

International Conference on **EDUCATION** and New Developments **2013**

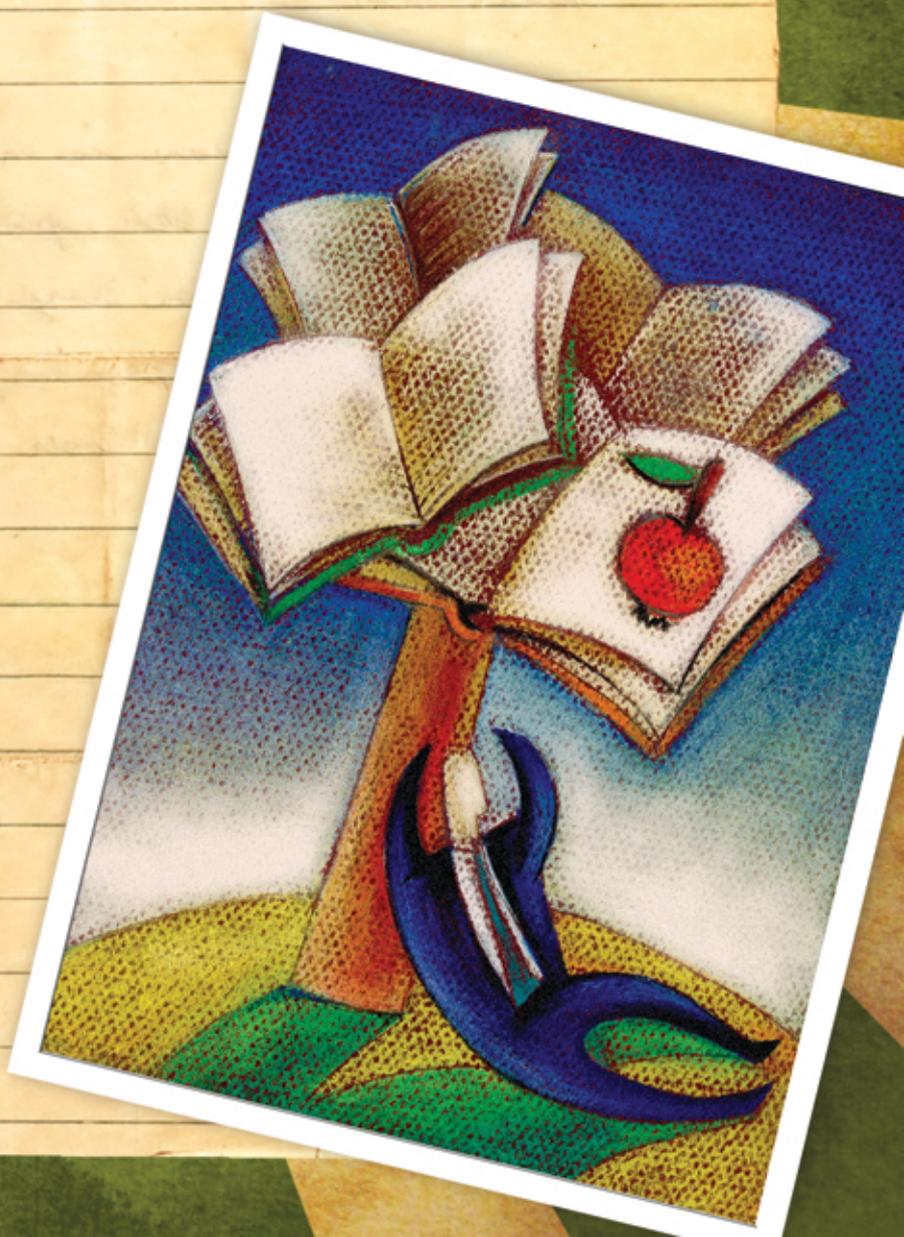
1 - 3 JUNE

LISBON, PORTUGAL

BOOK OF PROCEEDINGS

EDITED BY:

MAFALDA CARMO



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Edited by:
Mafalda Carmo,
World Institute for Advanced Research and Science (WIARS)

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FOREWORD

Dear Colleagues,

We are delighted to welcome you to the International Conference on Education and New Developments 2013, taking place in Lisbon, Portugal, from 1 to 3 of June.

Education, in a global sense, is a right since we are born. Every experience has a formative effect on the constitution of the human being, in the way one thinks, feels and acts. One of the most important contributions resides in what and how we learn through the improvement of educational processes, both in formal and informal settings. Our International Conference seeks to provide some answers and explore the processes, actions, challenges and outcomes of learning, teaching and human development. Our goal is to offer a worldwide connection between teachers, students, researchers and lecturers, from a wide range of academic fields, interested in exploring and giving their contribution in educational issues. We take pride in having been able to connect and bring together academics, scholars, practitioners and others interested in a field that is fertile in new perspectives, ideas and knowledge. We counted on an extensive variety of contributors and presenters, which can supplement our view of the human essence and behavior, showing the impact of their different personal, academic and cultural experiences. This is, certainly, one of the reasons we have many nationalities and cultures represented, inspiring multi-disciplinary collaborative links, fomenting intellectual encounter and development.

END 2013 received over more 267 submissions, from 35 different countries, reviewed by a double-blind process. Submissions were prepared to take form of Oral Presentations, Posters, Virtual Presentations, Workshops and Round Table. The conference also includes a keynote presentation from an internationally distinguished researcher Professor Peter Jarvis Emeritus Professor at the University of Surrey, UK, to whom we express our most gratitude.

This volume is composed by the proceedings of the International Conference on Education and New Developments (END 2013), organized by the World Institute for Advanced Research and Science (W.I.A.R.S.) and co-sponsored by the respected partners we reference in the dedicated page. This conference addressed different categories inside the Education area and papers are expected to fit broadly into one of the named themes and sub-themes. To develop the conference program we have chosen four main broad-ranging categories, which also covers different interest areas:

- In **TEACHERS AND STUDENTS**: Teachers and Staff training and education; Educational quality and standards; *Curriculum* and Pedagogy; Vocational education and Counseling; Ubiquitous and lifelong learning; Training programs and professional guidance; Teaching and learning relationship; Student affairs (learning, experiences and diversity); Extra-curricular activities; Assessment and measurements in Education.
- In **PROJECTS AND TRENDS**: Pedagogic innovations; Challenges and transformations in Education; Technology in teaching and learning; Distance Education and eLearning; Global and sustainable developments for Education; New learning and teaching models; Multicultural and (inter)cultural communications; Inclusive and Special Education; Rural and indigenous Education; Educational projects.
- In **TEACHING AND LEARNING**: Educational foundations; Research and development methodologies; Early childhood and Primary Education; Secondary Education; Higher Education; Science and technology Education; Literacy, languages and Linguistics (TESL/TEFL); Health Education; Religious Education; Sports Education.

- In **ORGANIZATIONAL ISSUES**: Educational policy and leadership; Human Resources development; Educational environment; Business, Administration, and Management in Education; Economics in Education; Institutional accreditations and rankings; International Education and Exchange programs; Equity, social justice and social change; Ethics and values; Organizational learning and change..

The proceedings contain the results of the research and developments conducted by authors who focused on what they are passionate about: to promote growth in research methods intimately related to teaching, learning and applications in Education nowadays. It includes an extensive variety of contributors and presenters, who will extend our view in exploring and giving their contribution in educational issues, by sharing with us their different personal, academic and cultural experiences.

The authors of selected best papers will be invited to submit extended versions of their papers after the conference for possible journal publication in the following journals:

- Knowledge Cultures
- Policy Futures in Education
- European Journal of Futures Research

We would like to express thanks to all the authors and participants, the members of the academic scientific committee, our sponsors and partners and, of course, to our organizing and administration team for making and putting this conference together.

Hoping to continue the collaboration in the future,

Respectfully,

Mafalda Carmo
World Institute for Advanced Research and Science (WIARS)
Conference and Program Chair

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KEYNOTE LECTURE

LEARNING - IMPLICIT AND EXPLICIT

Professor Peter Jarvis

Emeritus Professor at the University of Surrey, UK.

Abstract

Building on Polanyi's insight in *The Tacit Dimension* that we know more than we can tell, this paper argues that we actually experience more of reality than that of which we are conscious. Our conscious experience becomes the basis of explicit learning but that which we experience about which we are not conscious is the basis of implicit learning and tacit knowledge.

Brief Biography

Peter Jarvis is Emeritus Professor of Continuing Education at the University of Surrey which he joined the University in 1976. He has been studying adult education and lifelong learning for many years and has published many books and papers on the subject, some of which have been translated into a number of different languages and some have won international prizes.

He has just completed editing *The Routledge International Handbook on Learning*, a companion volume to *The Routledge International Handbook on Lifelong Learning* which was published in 2009. In addition, he has prepared a selection of his own writings which Routledge has also published and is currently writing two books - a *Philosophy of Learning* and another on *Reactive and Proactive Learning* and he is preparing a five volume anthology of papers on learning. He has recently written a trilogy *Lifelong Learning and the Learning Society* which Routledge published between 2006 and 2008. In 2009 he also wrote *Learning to be a Person in Society* and in 2010 the fourth edition of his *Adult Education and Lifelong Learning: theory and practice* was published. He is also founding editor of *The International Journal of Lifelong Education* – now in its 30th year.

He serves on a number of other Editorial Boards. He has been honorary and guest professor in many universities in the world, including City, Nottingham and Southampton universities in UK, Pecs University in Hungary and Tianjin Radio and Television University in China. He holds a number of honorary doctorates and has received a number of other awards. He has twice won the C.O.Houle Award for Adult Education Literature from the American Association of Adult and Continuing Education and is a member of the American Hall of Fame for Adult and Continuing Education. In addition he is an Academician of the Academy of Social Sciences in the UK, and a Fellow of the Royal Society of Arts. He is also the founding chairman of the Thatcham branch of the University of the Third Age

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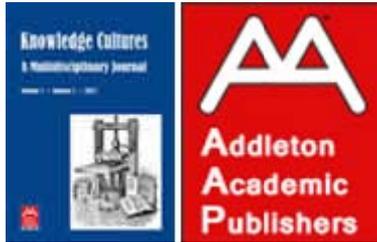


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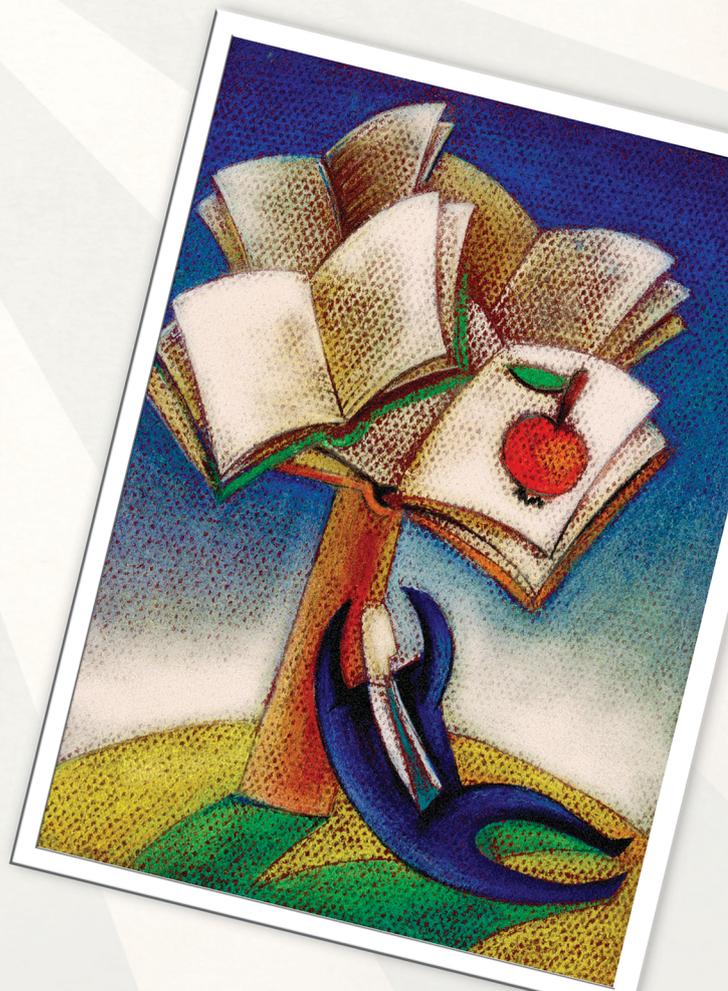
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ORAL PRESENTATIONS



HOW ADVISABLE IT IS TO BUILD COMPULSORY LANGUAGE CLINIC VISITS INTO A COURSE

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Abstract

A Language Clinic was established at a university in Hong Kong to give one-on-one help to students with their writing assignments. Since complaints had been made by previous and current teachers about the overall low standard of work of the students in English for Specific Purposes (ESP) course at this university, the course designer planned to seek help from the Language Clinic. To maximize the chance of students obtaining beneficial help from the Language Clinic, it seemed worthwhile building compulsory Language Clinic visits into the course. However, it was doubtful whether students with high performance would benefit from the visits. This project aims at exploring whether it was advisable to require all students with different levels of performance in an ESP course to seek help from the Language Clinic.

To help achieve this goal, in this ESP course, all students (120 altogether) were required to seek help from the Language Clinic in relation to the draft of their major written assignments before they submitted the final version of the assignments to their teacher for assessment. A questionnaire was given out to the students at the end of the course to find out their views on (1) how helpful the compulsory visit to the Language Clinic was, (2) whether it was workable for them to visit the Language Clinic before submitting the final version of their assignments to the teacher and (3) whether it was necessary to build in compulsory Language Clinic visits into a course. About 12 students, 4 with a high level of performance in their written assignment, 4 with a middle level of performance, and 4 with a low level of performance were selected for in-depth interviews to find out the rationale behind their answers to the questions on the questionnaire.

Results show that most students, no matter whether they had a high, middle or low level of performance found the compulsory visits to the language clinic helpful, workable and necessary. One main reason was that the visits provided them with chances and help to identify and solve their writing problems. The results informed course designers that it was worthwhile building compulsory visits to the Language Clinic into a course and suggestions on how to make the best use of the compulsory visits to a Language Clinic were also made.

Keywords: *Advisability, Compulsory visits, Language clinic*

1. Introduction

Writing clinics are set up in many universities in different parts of the world to help students improve their writing (Durrell 2011, Mallam, D. 1943, Mellon 2002). Students are usually encouraged to bring their written work to the writing clinic and/or specific problems that they encounter in writing and which they cannot solve by themselves (Mallam 1943). Instead of proof-reading the written work for the students, most writing clinics help them become independent learners who can revise and edit their own work (Mellon 2002). A Language Clinic working along the same line was also set up at a university in Hong Kong to give one-on-one help to students with their writing assignments.

Since complaints have been made by previous and current teachers about the overall low standard of work of the students in an English for Specific Purposes course at this university in Hong Kong, the course designer planned to seek help from the Language Clinic. To maximize the possibility of students obtaining beneficial help from

the Language Clinic, it seemed worthwhile trying out the option of building compulsory Language Clinic visits into the course to see whether it proved a workable and helpful option for them. It was obvious that the low achievers would benefit from their visits to the Language Clinic. It was, however, uncertain whether these compulsory visits would be helpful to the high achievers. It was therefore particularly useful to investigate whether compulsory visits to a Language Clinic were workable and helpful to all students with different levels of performance, which would in turn inform the course designer as to whether such visits should be built into a course as a compulsory activity.

2. Methodology

2.1. Data collection

To find out how helpful a compulsory visit to the Language Clinic was to students, all students (5 classes totalling 120 students) in an English for Specific Purposes course were required to seek help from the Language Clinic in relation to the draft of their major written assignments before they submitted the final version of the assignments to their teacher for assessment.

A questionnaire was given out to all students at the end of the course to find out their views on (1) how helpful the compulsory visit to the Language Clinic was, (2) whether it was workable for them to visit the Language Clinic before submitting the final version of their assignments to the teacher and (3) whether it was necessary to build in compulsory Language Clinic visits into a course. The response rate was 92.6%.

From one conveniently chosen class of students among the five classes in the course, the 4 students who obtained the highest marks in their written assignment, the 4 who obtained the medium marks and the 4 who obtained the lowest marks were selected for in-depth interviews to find out their views on the compulsory visits and the rationale behind such views.

2.2. Data analysis

Descriptive statistics (frequencies, mean and standard deviation) was computed to analyse the data on a 5 point likert scale in each question of the questionnaire. All interview data were be tape-recorded, transcribed, tabulated and categorized.

3. Results

3.1 Questionnaire results

The results of the questionnaire are reported below.

How helpful it was to pay compulsory visits to the Language Clinic before submitting the course assignment is shown in Table 1 below:

Table 1. The helpfulness of paying compulsory visits to the Language Clinic

Frequency %					Mean	STD
Very Helpful	Helpful	Somewhat Helpful	Not very helpful	Not helpful at all	2.14	0.75
19.47%	49.56%	28.32%	2.65%	0%		
69.03%		28.32%	2.65%			

It can be seen that most students (69.03%) thought that it was very helpful or helpful to pay compulsory visits to the Language Clinic before submitting their assignments to their course teacher.

Whether it was workable to pay compulsory visits to the Language Clinic can be seen in Table 2 below.

Table 2. How workable it was to pay compulsory visits to the Language Clinic

Frequency %					Mean	STD
Very workable	Workable	Somewhat workable	Not very workable	Not workable at all		
13.39%	46.43%	33.04%	7.14%	0%	2.34	0.80
59.82%		33.04%	7.14%			

Table 2 shows that more than half of the students (59.82%) reported that it was very workable or workable to pay compulsory visits to the Language clinic.

Whether it was necessary to pay compulsory visits to the Language Clinic can be seen in Table 3 below.

Table 3. How necessary it was to pay compulsory visits to the Language Clinic

Frequency					Mean	STD
Very necessary	Necessary	Somewhat necessary	Not very necessary	Not necessary at all		
10.62%	34.51%	38.05%	16.82%	0%	2.61	0.89
45.13%		38.05%	16.82%			

The opinions of the students were more diverse regarding whether it was necessary to pay compulsory visits to the Language Clinic. Nevertheless, still the largest percentage of the students (45.13%) opined that it was very necessary or necessary to pay compulsory visits to the Language Clinic.

3.2. Interview results

Among the 4 students in the high-grade category for their written assignment, all reported that the compulsory visit was helpful and workable because the tutors in the Language Clinic could provide them with helpful comments and point out the weaknesses of their assignments. It was viewed as very helpful to have another person read their assignments providing them with a new perspective. It was also an opportunity to practise their oral English. Regarding how necessary it was for the students to visit the Language Clinic, 3 of them thought it was necessary because Computer Science students were usually weak in their writing. Even if they performed well, they felt that they had also benefitted from the visit. It was not a waste of time because they had a chance to gain the views of a third person and were able to ascertain just how clear the paper really was. However, one student thought that the visit should not be made compulsory because she preferred to be able to make her own choice even though in her mind, the visit was not a waste of time.

All 4 students in the mid category stated that they found the compulsory visit to the Language clinic helpful, workable and necessary. One student said, "Even if it is not made compulsory, I will still go there myself because the tutor is knowledgeable and helpful. He gave me good advice and I could learn a lot and had a great improvement in my assignment after the visit. The visit is workable because it only took up half an hour of my time. It is necessary because it is inevitable that we will make mistakes in the assignment and it is better to identify the problems before its submission." Two other students thought that they could learn from the non-technical tutor where technical terms were not understood by non-technical readers so that they knew which terms needed to be defined in the assignment. In their view, they were weak in grammar and it was essential and beneficial to have someone giving them good advice in this area. Another student also pointed out that the compulsory visit to the Language Clinic was necessary and helpful because it forced him to finish his work early so that he had time to review his assignment again and revise it before submission.

The 4 students in the low category shared the same views as the students in the other two categories. In addition to these views, they thought that the compulsory visit worked for them because there was enough time for them to include the visit in their schedule. They also pointed out that since their English was poor, help from the tutor was very necessary. This compulsory visit forced them, who lacked confidence in English, to face their language problems and provided them with a chance to seek help to improve their language; otherwise they would just be left in the dark waiting helplessly and hopelessly for their fate.

4. Discussions

The results seem to suggest that it is a good strategy to ask the students to pay compulsory visits to the Language Clinic before they submit their assignments to their course teachers as most students in this study, no matter whether they had high, mid or low grades in their written assignment, thought that such activity was helpful, workable and necessary. Even students with high performance did not think that it was a waste of time. The compulsion to visit the Language Clinic gave the students a chance to see the benefits of the visit, to experience what it was really like and truly benefit from it. For the weak students, who particularly need basic help with their language, perhaps one visit was not enough for them to get the help they needed. It would be helpful to them if they could be allowed to pay multiple visits to the Language Clinic so that they could get their problems solved little by little and step by step. The students could be advised to plan their visits in such a way that each visit could help them deal with one needy aspect of their assignment. By the end of all the visits, they would have gone through the whole process of getting different aspects of their writing improved. This paves the way for the students to move towards self-initiated learning, the attitude and habit of which will benefit them throughout their life.

5. Conclusions

This is just an exploratory study on the advisability of building compulsory language clinic visits into a course. The sample of the students, especially those in the high, mid and low categories is of course too small for the result to be generalizable. However, the insightful findings seem to suggest a need to conduct a research project on a much larger scale with a much larger sample in many different ESP courses in the Computer Science programmes in order to identify whether this compulsory activity is helpful and workable to students with different levels of performance in other similar learning contexts. If this method is proven effective empirically in wider contexts, it can be put into practice with greater confidence in a larger number of places in different parts of the world. In this way, a larger number of students can thus benefit from this compulsory activity which helps them face any problems that may arise resulting in considerable improvement to their writing.

References

- Durell, D. (2011). *Reading and writing clinic*. Retrieved February 28, 2012, from <http://www.bu.edu/sereadingclinic>
- Harris, M. (1995). Talking in the middle: Why writers need writing tutors. *College English*, 57, 1, 27-42.
- Mallam, D. (1943). Reports: A writing clinic at Iowa State College. *School and Society*, 57, 1463, 51-53.
- Mellon, C. (2002.) *Enhancing education*. Retrieved February 28 2012, from <http://www.cmu.edu/icc/writingclinic/index.shtml>

AN INTERDISCIPLINARY MODEL OF TEACHING CHEMISTRY TOPICS

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Abstract

At the department of chemical education at the Faculty of Natural Sciences and Mathematics at the University of Maribor, our group of science educators participated in a three - year national project "Development of science competences", which primary aim was to generally increase the scientific literacy in Slovenian primary and secondary schools by introducing new learning tools and using active teaching methods. Over the past years the interest in and the need for applying methods and language from more than one academic discipline in order to examine a question, issue, topic, problem or experience has intensified for several reasons. Interdisciplinary integration uses methods to create connections between traditionally discrete disciplines such as sciences, mathematics, social studies and English language arts. There are various subject topics that have not been addressed in schools because of breadth or depth of information. Some of the curriculum that is contained in textbooks is neither timely nor relevant to students' lives. Learning is often being fragmented into pieces, because teachers have to cover certain topics in a very short amount of time. The paper presents an interdisciplinary oriented teaching material, which enables students to study particular chemical characteristics of acids and bases by using music and English language and to make cross-curricular connections between different subjects and topic areas as well as provide a variety of perspectives. The method of listening to music and method of didactic musical games have been used as two leading methods being supported by the text-based method and the method of structuring data into systems. The didactic material introduces an activity of listening to a song "Acids and Bases Have Two Different Faces" in English, where students learn the chemical content – basic properties of acids and bases in an interdisciplinary and interactive way by using music, images and text. Preliminary results of the tested material in Slovenian elementary schools speak in favor of applied interdisciplinary model as the students from experimental group performed significantly better on post-test than students from the control group. Most of the students even suggested that teachers should use such an approach more often.

Keywords: *Interdisciplinary model, cross-curricular integration, acids and bases, scientific literacy, active teaching method.*

1. Introduction

The field of chemistry is extremely complex, which makes certain chemistry contents difficult to understand. Therefore, successful chemistry teachers should concentrate all of their energy to create a stimulating environment in which students could learn chemistry in an interesting, fun, active and problem-solving oriented way. In order to achieve that, the teacher must give careful consideration to the needs of the pupils and students and prepare attractive didactic materials, which activities would enable students to develop a set of generic and subject-specific competences (Eurydice, 2002). This is the basis on which our national project "Development of Science Competences", financed by the European Union under the European Social Fund and Ministry of Education and Sport of the Republic of Slovenia, operated. As an integral part of a large Slovenian team of experts in the field of didactics of chemistry,

we have tried to focus all our efforts to boost scientific literacy. Nowadays, especially in primary and secondary education there is an increasing fragmentation of learning content, which should represent and form a logical whole. This is most evidenced by the separation of the individual subjects, among which there is relatively little connection and what is more, within the subjects even further separation to individual lessons is present as well. Given those facts, pupils / students often have difficulties in understanding the complex content that does not relate only to the parent, but also to the related scientific discipline. As the quality and lasting knowledge can be achieved through an integrated or thematic and problem-based learning content, from teachers' point of view cross-curricular planning of didactic sets at the milestone level is recommended, which allows the achievement of educational goals and provides many benefits for pupils and teachers. (Šorgo & Šteblaj, 2007). Whenever teachers have time, space and the willingness of their colleagues to participate, cross-curricular integration makes sense. In most of the chemical contents we first see connection to biology and physics. However, chemistry can also be linked to social science subjects such as languages, history, geography, as well as arts areas - music, dance, drama, etc.. The treatment of chemical content of acids and bases through music and English language is presented

2. Presentation of didactic material

Didactic material entitled "*Acids and bases through music and English language*" is composed to enable the implementation of two teaching units. It is characterized by a recommended core activity - listening to a song in English with primary chemical content (acids and bases) and a multidisciplinary approach, since the chemical field is directly associated with areas of English and Slovenian language, as well as music education. In this way it enables pupils to learn interesting chemical content in a diverse and active way and develop manifold key and subject-specific science competences. Different pupils have different learning styles. The presented material focuses on the development and the enhancement of auditory learning style, in conjunction with a visual learning style, as the activities are always planned to complement one another. For this purpose I obtained a recording of the song entitled "*Acids and Bases Have Two Different Faces*", carried out by Mike Offut online at <http://www.youtube.com> and developed a didactic material consisting of:

- audio recording of the English song;
- song lyrics in English;
- presentation of song lyrics in combination with visual acoustic lining in Microsoft Office PowerPoint;
- instructions for the teacher;
- working-observation sheets for pupils;
- post-test and
- evaluation questionnaire for pupils and teachers.

It is an active didactic strategy of direct acquisition of the basic properties of acids and bases, using music, images and text. It is recommended that a chemistry teacher connects with an English language teacher and

Acids and Bases Have Two Different Faces (Mike Offut, 1989)

Chorus

Acids and bases have
two different faces,
Two different personalities,
And you gotta find out
what they're all about,
If you want to learn chemistry.

Now the first thing you gotta get
straight in your head,
Acids turn blue litmus paper to red.
They react with metals with awesome power,
They neutralize bases and taste very sour.

Bases are different from acids, it's true,
Bases turn red litmus paper to blue.
They neutralize acids, feel slippery on skin,
They taste sorta bitter, and are called alkaline.

Chorus

Well, there's even more to this wonderful tale,
Something we call a pH scale.
It numbers from zero up to fourteen,
Those are powers of ten,
if you know what I mean.
When the pH is 7, then it's a case,
Where the sample is neither acid nor base.
But less than 7? ... it's an acid we say,
More than 7? ... it's a base all the way.

Chorus

Acids and bases? ...
Now why should you care?
'Cause acids and bases are everywhere.
You put them on salads,
and they get in the rain,
They settle your tummy,
and clean out your drain.

So the next time you're sitting
under some shade,
And you're sipping a glass full
of real lemonade,
You'll notice the sour taste
and think in your head,
I bet it turns blue litmus paper to red.

Chorus

Figure 1. Song lyrics

carry out the whole unit together. The presence of a guest "native speaker" is welcome as well. English teacher and / or native speaker should help pupils set a misunderstanding of English terminology. From a technical perspective, teachers must ensure that the classroom, where chemistry is carried out, is equipped with a computer, speakers and Microsoft Office software package, as it requires PowerPoint.

3. Design of the teaching unit

In the first teaching unit the teacher hands working-observation sheets with printed lyrics of the English song *"Acids and Bases Have Two Different Faces"* to the pupils in the experimental group, namely the one where he/she is about to test the new teaching material for the first time. Their task is to independently read the lyrics and underline the key chemical concepts. After pupils have read the text, they should extract the central chemical theme, which will be discussed later on. What follows is the listing of key chemical concepts and English translation to Slovenian language. Pupils then solve some short tasks to check their understanding. The teacher leads a conversation with the pupils on the undertaken activities and checks their (in) correct solutions.

The teacher then plays a PowerPoint presentation of the song lyrics to pupils, whereas the music of the song they have just read is being played in the background. Pupils carefully listen and watch the presentation and pay attention to the melody of the song. In order to check pupils' understanding the solving of the tasks follows. After the teacher checks the solutions to the tasks with pupils, they are given handouts with the content, which is identical to the content of the teacher's PowerPoint presentation and they hear the song *"Acids and Bases Have Two Different Faces"* to for the last time. Pupils are now expected to sing a song together with the teacher. The teacher asks pupils to learn the song lyrics for their homework, since five of them are going to sing the song at the beginning of the next lesson. At the beginning of the second teaching unit the teacher calls five volunteers who are willing to sing the song *"Acids and Bases Have Two Different Faces"* to other pupils in the classroom. The action takes up to 5 minutes. If necessary, the teacher can play the song in the background. Immediately after that follows a post - test (duration: 25 to 30 minutes), which includes 7 tasks of open, closed, and alternative type and includes content that pupils acquired in the previous lesson. For a comparative analysis, it is desirable that pupils from a parallel in which the central chemical content (acids and bases) was not presented to them in the suggested way, but where the teacher followed his/her own strategy, also take the same test in the second teaching lesson. The teaching material is appropriate for the introduction of the chemical content "acids and bases" in the eighth and ninth grade of elementary school and even in high school programs.



Figure 2. PPT presentation of the song.

4. Teaching method

The implementation of the proposed teaching units is conducted using the two leading teaching methods: method of listening to music and method of didactic musical games, supported by the text-based method and structuring data into systems. Pupils work individually or in groups.

5. Evaluation

A qualitative analysis of evaluation questionnaires was performed on 100 pupils from two elementary schools in Slovenia. In terms of descriptive statistics the following qualitative and quantitative findings are presented. All of the pupils believe that the presented learning activities in a very effective way enable the use of new knowledge and obtain information about the (im)proper use of it. They completely agree upon the fact that the set tasks on working-observation sheets and on the test were varied and clearly presented. The pupils believe the learning activities highly linked theoretical knowledge with practical. In the segment of the evaluation of the teaching material's didactic value, 92% of pupils think that the instruction that was followed by the proposed strategy is very much different from the traditional teaching within the same subject, 84% of them also agree that they worked more independently. They consider the presented teaching material clear, transparent, understandable and interesting. 96% of them agree that the English song "*Acids And Bases Have Two Different Faces*" with chemical content aroused their interest and attention and encouraged logical thinking. Pupils fully agree (72%) that the acquisition of new chemical content through music makes it easier to understand such content. Without exception, all pupils confirmed that the teaching material facilitates the development of reading, listening and oral competences and also that reading and listening to the song enabled a better interpretation of their own findings and conclusions. As follows from the pupils' responses, educational activities were not excessive, since 92% of the pupils believe that the scope of activities and learning materials was appropriate. Furthermore, a short summary of pupils' responses to four open questions follows.

➤ How was the instruction different from usual? What was different? Would you have wanted more of such instruction?

Pupils found the teaching on the topic "*Acids and bases through the music and English language*" great, relaxed, lively, interesting and much better than usual. Most of them agreed that the lesson was over quicker, that the conducted lesson represented a huge difference compared to traditional lessons, pupils had a lot of fun singing the song, they were actively involved all the time and they also liked the fact that two teachers (Chemistry and English teacher) were present in the classroom. The interdisciplinary integration between three subjects was evaluated as informative and pupils would have wanted more of such instruction in the future.

➤ Which activity in the context of the learning material did you like the most and why? (reading a song, listening to the song, singing a song, post-test ..)

The most interesting activity to pupils was listening to the song and singing it, as they like to sing very much (some of them also attend music school or sing in the choir), they love music, and chemical content constantly intertwined through the English language. They also liked the PowerPoint presentation of the song, stating that it was very colorful and contained many images, whereas some pupils were happy to deal with the tasks and post-test as well.

➤ What was the strategy of selecting key concepts?

Pupils first underlined key words in the song, then made a list of the words and eventually translated them into Slovene. Some pupils underlined the key words by ear, the others chose those they had been familiar with from chemistry and some of them

chose the words they thought were most important or had been mentioned several times in the song.

➤ Where do you see the benefits of integration of chemistry, music and English? Give suggestions, comments on the material used and activities carried out.

Pupils have noticed many advantages of integration of chemistry, music and English, as they believe that it is possible to learn new chemical concepts through singing in a foreign language more quickly, meanwhile they were doing several things at once and they like cross-curricular connection in general, since it represents even greater motivation to work. They believe that such links are necessary in the classroom as many contents in many areas of or life intertwine, and knowledge obtained in this way is seen as more permanent. They liked the didactic material, which was beautifully designed, colorful and interesting. Pupils praised both teachers who conducted the instruction in the classroom, they suggested that the some questions in the test could have been written in English instead of their mother tongue and few individuals stated that certain expressions in the song were difficult to pronounce.

6. Conclusion

Based on the results of the qualitative analysis, when following the presented teaching and learning strategy, pupils are likely to develop the following competences: ability of analyzing and organizing information, ability of interpretation, communication skills in foreign languages, ability to synthesize conclusions and the ability of adjusting to new situations. In order to avoid the fragmentation of knowledge, it is being strongly advised that teachers create cross-curricular connections as often as possible.

References

- Ambrožič, M., Ambrožič Dolinšek, J., Cvahte, M., Cvetko, M., Devetak, I., Faletič, S., idr. (2011). *Razvoj naravoslovnih kompetenc – Izbrana gradiva projekta*. Univerza v Mariboru, Fakulteta za naravoslovje in matematiko, Maribor, 141-146.
- Bukovec, N. (2010) *Kemija za gimnazije 2, učbenik za 2. letnik gimnazij*. DZS, Ljubljana, 50-65
- Kornhauser, A. in Frazer, M (2003). *Pogled v kemijo 8*, učbenik za osmi razred osnovne šole. Cankarjeva založba, Ljubljana, 40 – 44.
- Smrdu, A (2008). *Kemija, Snov in spremembe 2, učbenik za kemijo v 1. letniku gimnazije*. Založništvo jutro, Ljubljana, 61 – 66.
- Suite 101. *Teaching Science, Art with Music*. Retrieved January 30, 2013 from: <http://www.suite101.com/content/teaching-the-full-measure-of-music-a39047>
- Šorgo, A., in Šteblaj, M. (2007). Curricula and their impact on interdisciplinary integration of natural science subjects in high school. *Didac Slov-Pedagos*, 22, 1-2, 113-127.
- Youtube: *Acids and bases have two different faces*. Retrieved February 6, 2013 from: <http://www.youtube.com/watch?v=2r-mVTm47SQ>

EXPERIENCES IN CONTENT AND LANGUAGE INTEGRATED COURSES IN HIGHER EDUCATION: CHALLENGES IN ENGINEERING STUDIES

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Abstract

Although integrated content and language instruction in Europe has entered its third decade, the convergence of content and language learning in higher education levels in Spain is still far from being consolidated, when compared to other European countries. Student mobility has greatly increased in later years in Spanish universities, thanks to the great promotion encouraged through the different EU policies and measures. As a result, the demand for the engineering university graduates with a profound technical education and good command of English is outstripping supply. This has brought language, and non-language professors to implement across the curriculum the model of content and language integrated learning (CLIL) in the technical university classrooms. Here, we present some teaching experiences in higher education carried out with Building Engineering students in Spain, which have proved an interesting challenge both for teachers and for students. Outcomes to be highlighted, among others, are: it has integrated subject specific language technical terminology, it has provided greater opportunities to study technical issues through different perspectives, it has increased learners' motivation, and clearly prepared students for internalization contexts. In addition, it has also given the opportunity to increase the number of foreign students attending the classes and encouraged mobility throughout. Moreover, regarding general statements on the effect of CLIL on students, language learning outcomes have been surprisingly positive.

Keywords: *CLIL, Engineering courses, language competences, technical vocabulary*

1. Introduction: The concept of CLIL in Higher education

Content and Language Integrated Learning (CLIL) has become the umbrella term describing both learning another (content) subject through the medium of a foreign language and learning a foreign language by studying a content-based subject. The basis of CLIL is that other disciplines are taught and learnt in a language, which is not the mother tongue of the learners underscoring the importance of both language and content in the teaching-learning process. In the past, research on CLIL focused mainly and secondary school levels and did not give much consideration to the tertiary level. However, in the last decade, English-taught university courses have widely spread in European countries, but with great differences among these countries. These differences depend partly on individual university program policies, and on the national educational support found within each country (Costa 2009).

2. CLIL in Higher Education in the European Context: The case of Spanish universities

Today English has become the most chosen language for internalization programs, with a definite need for academic English language proficiency, since a good knowledge of it, is without a doubt, a strong advantage in the job market. The introduction of CLIL already in primary schools and secondary education, has proven to

be very important in order for CLIL methodology to develop most effectively in the tertiary level (Foran and Sancho 2009). Indeed, in Spain, following the 1990s educational reforms, several regions have been developing bilingual programs with CLIL teaching in primary and secondary education, so that soon, if not already, students who enter university will expect CLIL teaching to be delivered at tertiary education as well. Although internalization programs in European Universities started late in the 1980s, in Spain, it has only been in the last decade when an emerging population of students are opting to study abroad rather than at home, as the increasing numbers of Erasmus mobility students show. In fact, last year, Spain has become the country with the greatest number of students enrolled in mobility programs in Europe (The Erasmus Report).

Unfortunately, this rise in university students mobility of has not come hand in hand with the fast development of English-taught content classes in universities, as could have been expected. According to a survey carried out in 2008 (data from 2007) by Maiworm and Wätcher on English-taught programs in Europe in higher education institutions (excluding individual courses and modules), Spain is one of the countries with the fewest English-taught programs, and this is especially noticeable in the engineering degrees. In spite of the great efforts carried out by the European Union, to promote internalization and language diversity, encouraging European States to recognize the importance of L2 learning within the tertiary level, and to offer university programs in foreign languages, in Spanish universities, language acquisition has not been a main objective. Inappropriately, languages have been left out in the rather new academic curriculum stated for the degrees in accordance with the Bologna treaty in many of the university curricula. Indeed, languages have been relegated to a backstage, leaving it to each university to decide. Although the role of languages is greatly acknowledged within the integral training of the university student, language learning is still considered a transversal competence.

3. Starting up CLIL courses in Engineering: the seed of an ambitious program

During the last 5 years, Spanish universities, as a need to strengthen internalization and reach high competitive levels, as well as to engage a greater number of students, are more and more interested in CLIL model programs. In Spain, now, over 30 tertiary education institutions offer whole or partial bilingual degrees, mainly Business administration, Tourism, International Relations, Education, etc. (Toledo 2012). However, in the area of engineering the introduction of CLIL methodologies is still quite scarce.

In the Universidad Politécnica de Madrid, --a middle size university, with around 20,000 students, offering more than 28 engineering and architecture degrees-- at the moment when the new curricula were introduced in 2011, some CLIL approaches to different specific subjects being offered in the different careers started. In the School of Building Engineering, aiming to improve the language competences of the students and within the internalization program, a bilingual model was developed encouraged and supported by the institution. Although it has been hard work to convince content faculty to participate in the model, it finally started working in 2011.

3.1 Stating the setting. Basic linguistic background to be considered

CLIL is today one of the most widely spread methodologies within the language learning process (Arnold 2010) due to the many advantages it offers, both at a linguistic, psychological, pedagogical and institutional level. Indeed many of the benefits the CLIL method offers have been widely studied, and clearly so, the significant improvement of the student competence in the foreign language, thanks to a greater exposure to the meta language in a context favoring a natural and significant use of it. In addition, Mellion (2006) stated the three Cs requirements to make a CLIL

university project successful: Conditions (socio-political conditions and funding), Commitment (individual responses of the teachers) and Competences (linguistic, didactic and multicultural).

Different thinking pathways, which result from CLIL and the effective constructivist educational practice it promotes, can also have an impact on conceptualization (literally, how we think), enriching the understanding of concepts, and broadening conceptual mapping mind resources. This enables better association of different concepts and helps the student advance towards a more sophisticated level of learning in general (Coyle, Hood, Marsh 2010: 10-11)

Furthermore, Crandall and Kaufman (2002) identified challenges for the future as regards CLIL projects at the tertiary level, which clearly coincide, with the challenges we have faced in our experience. They include:

- identifying or developing appropriate content,
- convincing content faculty to participate in the program,
- developing and maintaining communication and collaboration
- institutionalizing the effort

3.2. CLIL experience with Building Engineering students

The School of Building Engineering of Madrid, offers students the possibility of voluntarily joining a group, partially taught in English (Group 1) in some of the subjects in each semester. To be part of this bilingual group is a student's personal choice, and not an imposition, which helps dealing with the language barrier handicap that some students can suffer.

The possibility of increasing English-taught courses has been possible through the continuous work of the joint teamwork between language teachers (from the Department of Applied Linguistics) and the teachers from the content discipline (from the Technical department). This has allowed both parties to adapt the curricular content searching for an improvement of the language learning processes. Because of its voluntary nature, the majority of students enter the group with a sufficient level to follow the contents presented in class without difficulty and to undertake the activities correctly. Nevertheless, it should be noted, that there are some students with a low English level, who have chosen the bilingual group because the schedule was more suitable for them, or because of the affinity with other student mates. For these students, it is clearly more difficult to follow the classes and sometimes, they are more reluctant to carry out autonomous work, having difficulties to break the language barrier. In this group, in addition to using the English language in all written documents, i.e. power point presentations, class notes, problems, instructions of exercises, tests and the like, the teacher offers tutoring sessions and help in this language.

The profile of students who enter this group, is that of a motivated student, interested in the activities carried out. In general their academic level is good and the most motivated students leading the group pull up from the ones with less favorable skills. The type student is willing to increase the level of the exposed content, and even to participate in activities that require their involvement more directly (oral presentations, individual activities, etc).

At the same time, the bilingual group is sometimes very appealing to foreign students, since classes are easier to understand than if they had to join the Spanish groups. Usually students in exchange programs are those who benefit most of the CLIL courses, especially those coming from non-Mediterranean countries, where similarities of Spanish with their native language are little. Likewise, and due to the small size of the group, these students find a more personalized follow-up and a more direct commitment and engagement by the teacher.

We have noticed that some subjects are more suitable to be English-taught than others, as they are friendlier, more abstract, and more appealing to the student, as in the case of sustainability and environmental issues, or construction systems, as

opposed to other courses in the degree, which are not that attractive. Indeed, in the specific construction class, because of the eminently local or regional nature of some of the constructive systems included in the subject content, lexical problems might appear. It is extremely difficult, at times, to find the corresponding specific terminology in the English language. As an example, we can mention that a widespread structural solution such as the slabs consisting of concrete ribs and lightening element (in Spanish *forjado*) does not have a direct translation in English, and an explanation is necessary when using the term. In contrast, the CLIL system allows deepening into structural solutions more widely used in the Anglo-Saxon world, or other issues more specific in the English context. In addition, one of the big advantages of the CLIL experience performed is the practical nature of the content subject, allowing for an implementation with many visual aids.

The activities designed to assess the acquisition of the learning goals were varied. Among others, the activities included: collecting information and writing reports about technical issues in English, developing a construction project explaining details and developing structural solutions, short presentations on specific technical aspects, etc. The goal of specific technical vocabulary, was developed with different activities were carried out, such as team group contests, cloze tests, competitions, glossary compilations, etc.

3.3. Assessment of the experience

At the end of the semester teaching period, students enrolled in the bilingual group took part in a survey to assess the satisfaction degree about the CLIL project developed. The questionnaire provided consisted of 9 closed questions with a Likert type scale of 4 levels (where number 1 corresponds to *I totally agree*, *I agree*, *I disagree*, and number 5 refers to *I totally disagree*) and an open question to show their overall opinion about the CLIL project.

The three first questions of the survey dealt with the importance students give to the knowledge of the English language in their academic and professional development. From the data obtained, students think English-taught courses are an absolute need, foreseeing the future use they will make of it in their professional careers. In addition, they acknowledge the relationship of the English-taught course with their improvement of the use of the English language.

Since there is not a mandatory placement test prior to access the bilingual group, and despite the fact that the criteria established in the European Higher Education Area require a minimum B1 English level for all undergraduate students, heterogeneous language levels and sometimes even low levels are present, and hence it can cause additional adapting problems. As noted above, the group is inclusive in nature, and its aim is not the formation of an elite, but to facilitate the access to students with all English levels, counting on their interest and their motivation. Therefore, we have found that the responses obtained are different depending on the students' English level. On the one hand, the average student believes he needs to make a special effort to follow the English-taught class, although they are qualified to carry out the different tasks; and these persons demand a greater number of activities in English and more intense language courses in order to improve their proficiency. On the other hand, they all insist on the importance of these subjects being taught in English, and students overwhelmingly support and appreciate these experiences.

In general, it is interesting to note the low acceptance of the students in participating actively in the activities in English language, with the possibility of assessing not only their content knowledge, but also the English knowledge they have. Presumably, this could be due to the lack of interest students show in active and autonomous work regardless of the language in which it is carried out. The general conclusion is that the experience of the CLIL group has been very interesting for the majority of students enrolled in it.

4. Conclusions

The experience of CLIL methodology applied in Building Engineering courses has been valued as highly positive by the students who participated in it. Almost all believe that English-taught courses are essential within the European framework of higher education, and in addition, the vast majority believe it is essential for their future professional career. Likewise, they believe that studying a content subject in English improves their knowledge of the English language.

Overall, the course development allows them to integrate their knowledge of English and apply it to the specific field of construction, expanding knowledge of specific terminology, construction solutions, etc.

The experience has shown that more suitable disciplines should be chosen at the beginning to engage the student into the new learning process. Choosing more suitable, content-friendly and more appealing-to-the student subjects will enable CLIL courses to be successful. The ideal subject for introducing CLIL should allow the use of visuals: pictures, short videos and other interactive activities. The joint work of content teachers and English language teachers providing support and assistance, as well as training programmes are strongly recommended. No evidence has been found on the common belief that understanding of content is reduced by lack of language competence. Indeed, quite on the contrary, this experience confirms that language ability is increased by content-based learning, and that content learning is enhanced through the CLIL approach. Among the advantages this CLIL experience has brought as a result, the following ones can be highlighted: it has introduced a wider cultural context in the content field classroom; it encourages internalization of university contexts; it improves overall and specific language competence, it prepares students for future studies or the working life, it develops multilingual interests and attitudes and increases language motivation.

References

- Arnold, W. (2010). "Where is CLIL taking us?" *Pulso*, 33: 227-233.
- Costa, F. (2009). Studies of Foreign Languages. *Kalbu studijos. Studies About Languages*. No. 15, pp 85-88. Retrieved May, 2013, from: http://www.kalbos.lt/zurnalai/15_numeris/13.pdf
- Coyle, D., Hood, P., and Marh, D. (2020) *CLIL Content Language Integrated Learning*. Cambridge: Cambridge University Press.
- Crandall, J., Kaufman, D., (Eds.), (2002) *Content Based Instruction in Higher Education Settings*. Alexandria: VA, TESOL Practice Series.
- Foran, D. and Sancho, C. (2009). CLIL approaches in university Applied Science environments. In Dafouz, E. and M. C. Guerrini (eds). *CLIL across Educational Levels. Experiences from Primary, Secondary and Tertiary Contexts*. Madrid: Richmond Publishing, 113-124.
- Maiworm, F., Wächter, B., (2008). *English-taught Programme in European Higher Education. The Picture in 2007*. Bonn: Lemmens.
- Mellion, M. J. (2006). The Challenge of Changing Tongues in Business University Education. In R. Wilkinson & V. Zegers, eds. *Realizing Content and Language Integration in Higher Education*. Maastricht: Universitaire Pers Maastricht.
- The Erasmus Programme.2010-2011*. Retrieved April 2013, from: <http://ec.europa.eu/education/erasmus/doc/stat/table1.pdf>
- Toledo, I., Rubio, F., Hermosín, M. (2012). Creencias, rendimiento académico y actitudes de algunos universitarios principiantes en un programa plurilingüe. *Porta Linguarum*. 18 junio 2012, pp. 213-229. Retrieved, May 2013, from: http://www.ugr.es/~portalin/articulos/PL_numero18/13%20%20Isabelle%20Toledo.pdf

iPAD OR PC COMPARING TABLETS AND PCs FOR SCIENCE TEACHING PURPOSES

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Abstract

This paper outlines different approaches of the use of desktop computers and tablets in competence- based science teaching evaluated at the BG/BRG Schwechat. Over the recent years the school equipped with 100 personal computers and 28 iPads has become one of the leading e-learning schools in Austria.

There is a huge emphasis on competence- based learning and practical orientation in teaching natural science. In order to further improve on these concepts the competence model sets not only standards in the field of acquiring knowledge but also in the field of acquiring learning skills such as: organizing knowledge, gaining insight, drawing conclusions and designing.

Our experience in the field of e-learning allows us to draw the conclusion that the use of a learning platform encourages the formation of those learning skills.

The implementation of interactive graphs and digital animations makes it easier for students to understand complex processes in natural science. For those tools teachers prefer conventional PCs because most of those Flash and Java based animations are not supported by iPads.

Those tablet computers show their advantages in the context of blended learning sequences: the devices are instantly ready to use and allow pure haptic interaction with the content. The iPad appeals with its simple interface and very stable operating system. It encourages teachers with few digital competences to implement e-learning into their lessons.

iPads are devices which interact with the environment: Their internal sensors and cameras allow them to “see”, “hear” and respond to physical movement and acceleration. The instant read out and optically appealing presentation of collected data turns the iPad into a mobile laboratory. Augmented reality inside and outside the classroom is not science- fiction any more. Significant differences between PCs and tablets are also evident in the use of communication tools of learning platforms: Students use these tools much more intense when they are logged in with tablets and mobile phones.

The evaluation of this paper was created with the feedback tools of the learning platform Moodle asking students about their views. Through workshops with teachers and lectures at national and international conferences, a validation of this work was accomplished.

Keywords: *eLearning, tablets, competence– based science teaching, sensors*

1. Introduction

For centuries school has been a place of tradition: One person is standing in front setting tasks. Those who sit back have to await more or less patiently the things that may be imposed on them. (translated from Müller 2006)

By using computers in their lessons, teachers have the opportunity to breaking this tradition and change the image of school. The benefits that come with the use of desktop computers for educational purposes have been evaluated and tested excessively in various national and international projects. A prime example of such a project in Austria is the eLSA project which has resulted in the implemented of e-learning with desktop computers in everyday school life in over 200 schools.

But as time changes and tablet computers significantly reduce the sales of desktop computers the question raises whether these devices have the potential to

improve the possibilities of e-learning or even displace desktop PCs in secondary school teaching.

Are tablet computers better suited than desktop computers to meet the needs of competence-based science teaching?

Do tablet computers like the iPad make the acquisition of the competences defined in the competency model for physics teaching, easier than with PCs?

There are a great number of applications designed for the iPad focused on natural science, which is why it was decided to further investigate the questions posed before.

The author is highly confident that the iPad has everything it needs to perform as an excellent tool for (science) teaching.

2. Description of Hardware and Software for the Didactic Design

At the BG / BRG Schwechat for several years now, the focus has been on eLearning, using 3 computer rooms with a total of over 100 PCs.

The BG / BRG Schwechat is a school with about 1000 students aged 10 to 18 years, employing about 90 teachers. To allow eLearning in all 40 classrooms, a mobile solution was implemented: There are 28 iPads stored in a cart, which makes transportation and synchronization easier. This mobile e-learning unit is available to all teachers as long as they reserve via a custom made reservation system accessible online. In order to optimize this system a projector was installed in every class room and full Wi-Fi coverage was set up in all parts of the school building. As this concept proved to be successful, a set of sensors compatible with the iPad was purchased. Those external devices instantly allow students and teachers to measure quantities like temperature, CO₂ emission, air pressure, IR radiation, etc. with the iPad.

The teaching methodology of the e-learning sequences was developed in cooperation with the committee for “new graduation standards for Physics” and meets the requests of the competency model for physics.

Competency based teaching has become very important especially in teaching natural science where experimenting and actually experiencing things is a big part of teaching methodology.

In order to further improve on the concept the competency model sets not only standards in the field of acquiring knowledge but also in the field of acquiring learning skills such as: organizing knowledge, gaining insight, drawing conclusions and designing.

The iPad with its touch screen and easy usability, applications sensors and real time read out of measurements seems to be a perfectly suited device for science teaching. Its impact on the following objections taken from the competency model for Physics teaching was evaluated: “...students should be able to make observations, perform their own measurements and describe their findings.”, “Students should be able plan a suitable experiment, record and perform them independently...”

The lessons for this study were designed following the concept of “inquiry based learning” based on investigation of questions asked in the subject physics. Questions and working instruction were provided at the learning platform “moodle”, students were able to log in by desktop PC as well as by iPad.

Applications and programs available for both, tablet and PC were selected in order to be able spot a difference between working out tasks with a desktop computer and an iPad.

The animations and programs used for this evaluation can be divided into 3 categories:

1. Interactive simulations; the change of parameters is possible
2. Motion analysis software
3. Data recording software compatible with various internal sensors

ad 1. The simulation “Energy Skate Park” from the University of Colorado’s online collection (<http://phet.colorado.edu>) was used for the discussion of the conservation of energy. Using the iPad these topic was taught by the applet „Coaster Physics“ from Ziconic (<http://www.ziconic.com/p/coaster-physics.html>).

ad 2. The analysis of bodies in motion was done by video recordings. Using the video clips with the PC velocity and acceleration was determined by the Logger Pro Software (<http://www.vernier.com/products/software/lp/>), working with iPads the application „Video Physics“ were applied in order to collect information about track, position and velocity of an object.

ad 3. Sonic detectors and sensors for air pressure were chosen to conduct measurements during educational scenarios. Frequencies and intensity of sounds were analyzed by the program „Spectrum Analyzer Pro Life“ (<http://www.pas-products.com/analive.html>) with PCs, using iPads these tasks were accomplished with the application „bs spectrum“ (<http://www.bismark.jp/bs-spectrum-app/>). The sensors’ readouts were recorded with the program „Sparkvue Software“ on PC, iPads recorded data with Pasco’s application „Sparkvue“.

3. Description of the sample of pupils and the pedagogical approach

The apps and programs listed above were tested with two classes (50 students) of 8th grade Middle school students (mostly aged 14). Many tasks included working with the learning platform “moodle”. Students of one class were already familiar with the learning platform because it was used in some of their previous courses while the others had made comparatively fewer experiences with this tool.

Most students were very skilled at working with the iPad because the device’s basic features are very similar to those of a smart phone which nearly all students are familiar with.

Students logged onto the moodle platform either at a PC using a web browser or with the iPad’s Safari browser. In rare cases the app "MoodIEZ" was used which can be complicated to work with sometimes.

The students received corrections and feedback via the platform’s feedback and communication tools. They were directed to upload their results to the platform after each task where they are accessible to their teacher for assessment and correction. A quantitative evaluation of this study was obtained with moodle’s feedback tool. Students were able to express their opinions on the different learning environments (PC and iPad) anonymously by filling in questionnaires accessible online.

Validation of the results was accomplished through workshops with teachers and lectures at national and international conferences.

4. Findings

This chapter summarizes the author’s findings on teaching supported by applications and software mentioned above.

Firstly the comparison between interactive simulations running on iPads and desktop PCs is described. While working on the topic of conservation of energy both of the simulation either running on PC or on the iPad were motivating students to deal with the topic. The application running on the iPad implemented the game based approach very well because the learning environment was similar to the design of a computer game. The game based approach appeared in various views (inside or outside of the coaster) and in the animation of the direction of the view.

The usability of the application on the iPad is better than the PC version’s because after the start of the simulation at the PC some security questions raise caused by the Java script, which leads to some confusion especially in inexperienced users.

The presentation of the balance of energy is done with bar diagrams at the PC which provides clear results. Thus it is strongly supporting the explanation of the principle of the conservation of energy. The law of the conservation of energy shows the application on the iPad only exercising additional calculations.

The iPad displays the connection of velocity and acceleration of the coaster by a graphical representation.

Both the application on the PC and the iPad enable to create new tracks for the skater respectively for the coaster. Thus supports the aspect of drawing conclusions and designing in the competency model.

The second comparison was focused on applications used for the analysis of bodies in motion. During the learning scenarios dealing with motion analysis software using video clips the iPad and its apps showed their advantages: the built in camera of the iPad allows easy integration of recorded video clips in the application "Video Physics". The time-consuming and sometimes tricky steps of loading videos from a camcorder to a PC are not necessary. The usability of the application "Video Physics" running on the iPad was by far better than the software running on the PC. The use of the application with the iPad was self-explaining, while using the software on the PC was not possible without detailed instructions. Especially pupils with few experience in using PCs had troubles in the handling of the software.

Even for inexperienced iPad users there is no need of distracting explanations regarding the software, which allows students to focus on the task and its learning content. Touching and moving of the object directly on the screen with their own fingers enables a special learning experience.

During the lessons with the sensors there occurred no significant differences between the software running on iPads and PCs, because the surface of the application and program was nearly identical.

The third comparison covers the use of sensors connected to iPad and PC. Doing measurements the use of the iPads was much more flexible than PCs. Pupils used iPads with the connected sensors for measurements outside the classroom and outside the school building. These mobile fields of applications were very helpful during lessons about the air pressure: students easily investigated the dependence of the air pressure of the altitude by moving with the iPad and the sensor from the 3rd floor to the ground floor. There is a great potential in designing learning scenarios with iPads used as mobile laboratories.

Finally 68% of students questioned felt that by learning with iPads and sensors greatly improved their understanding in scientific concepts. For all students, it was very motivating to work with iPads in educational context.

Asked about the usability of the iPad and PC regarding the input of text pupils of the 2 classes expressed different preferences. Pupils of the one class saw no disadvantages in using the iPad for the text input, 75% of the pupils of the other class agreed that they prefer the keyboard of a PC to enter text.

Fulfilling the task to upload files to the Moodle platform with an iPad many of the pupils – especially inexperienced computer users – asked for support and guided instructions.

5. Conclusions

The project has shown that the interaction with digital learning elements such as interactive simulations helps students to better understand complex scientific contexts. Tablet computers show their advantages in the context of blended learning sequences: the devices are instantly ready to use and allow pure haptic interaction with the content. The iPad appeals with its simple interface and very stable operating system. It encourages teachers with few digital competences to implement e-learning into their lessons.

The iPad can do something virtually impossible with ordinary PCs: Working with the iPad's internal and external sensors instantly turns an ordinary class room into a science laboratory. The iPad allows its user to conduct experiments and measurements even when on the move outdoors.

The haptic interaction with the iPad's user-friendly interface allows students new learning experiences that are very important in terms of competence-based science teaching.

The use of iPads enriches the opportunities of e-learning. Based on the feedback of students and teachers collected in the framework of the described project, it is legit to say that the iPad is a valuable tool for education. The use of iPads combined with e-learning scenarios enables learning activities that cannot be done on a PC in a computer lab. As one result of the use of iPads in science classes teachers perceived a significant increase in students' motivation to engage in scientific issues.

This conclusion highlights the need of digital resources for teaching purposes integrated in a didactical and pedagogical context. The Open Discovery Space project (<http://www.opendiscoveryspace.eu/>) offers a wide range of digital content covering many topics of curricula. Open Discovery Space is funded by the European Commission and is the result of collaboration between 51 organisations from 23 countries. The aim is to create a socially-powered, multilingual open learning infrastructure to boost the adaptation of e-learning resources in Europe.

The wide range of already existing content for mobile learning in repositories like mobile COSMOS (<http://portal.discoverthecosmos.eu/node/14461>) and mobile CERN (http://portal.discoverthecosmos.eu/2010_04_moCern_website/index_en.html) gives great opportunities to develop further "visionary" aspects of e-learning.

The author concludes from the experience gained in the course of this project that tablet computers will be firmly established in future education.

References

- Bönsch, Kohnen, Möllers, Müller, Nather, Schüürmann (2010). *Kompetenzorientierter Unterricht. Selbständiges Lernen in der Grundschule*. Braunschweig: Westermann.
- Hopf, Andorf, Apolin, Bartosch, Binder, Graninger-Pohle, Gröchenig, Haagen-Schützenhöfer, Neumann, Urban-Woldron (2012). *Die kompetenzorientierte Reifeprüfung aus Physik*. Wien: Bundesministerium für Unterricht, Kunst und Kultur
- Klippert (2008). *Pädagogische Schulentwicklung. Planungs- und Arbeitshilfen zur Förderung einer neuen Lernkultur*. Weinheim/Basel: Beltz.
- Müller (2006). *Eigentlich wäre Lernen geil. Wie Schule (auch) sein kann: alles aussergewöhnlich*. Bern: hep Verlag.

ENGINEERING STUDENTS AND THE APPLICATION OF MATHEMATICAL KNOWLEDGE: HOW TO EXPLAIN THE DIFFICULTIES EXPERIENCED?

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Abstract

The article presents the results of two focus groups and a questionnaire implemented with engineering students from the University of Minho, in order to assess opinions and perspectives concerning the main learning difficulties in mathematics-based disciplines. The results obtained show that students generally see the relevance of mathematics to engineering courses. Mathematics is considered as an essential discipline in course selection and a vital part of their career as engineers. The importance of the instructor is recognized when learning mathematical concepts. Students would like their courses to address mathematical concepts that are more in line with their future professions. The 73 undergraduate students who completed the questionnaire manifested a high self-efficacy and a high perception that the learning of mathematical concepts and the development of mathematical skills are essential for progression in their future career.

Keywords: *Learning factors, Mathematical concepts, Engineering students, University of Minho, Portugal.*

1. Introduction

Engineering plays a significant role in the modern world since it is always present in day to day activities concerning construction, computers, technology, energy, electronic devices, and manufacturing process. Regardless of the area of study, the mathematical concepts are essential in the training of engineers, both for understanding the different concepts as well as the specific knowledge of their applicability. Nevertheless, and despite Mathematics constitute an essential discipline on admission to engineering courses, engineering students reveal difficulties in Mathematics based disciplines. Students' grades reveal difficulties and motivational issues that go far beyond the required mathematical knowledge. The study involved collecting data from two complementary data sources: two focus groups and a questionnaire.

The purpose of this study is to measure and analyze three factors identified in the literature as influencing the learning of mathematical concepts: engineering self-efficacy; perceived importance of mathematics and the anxiety towards mathematics. The remainder of this paper is as follows: in Section 2 a literature review is presented, summarizing some of the factors that could influence the learning of mathematics. Section 3 presents the methodology and afterwards we present the results of a focus group and a questionnaire. Section 5, summarizes the most relevant conclusions.

2. Mathematics learning factors

The literature review identified several studies that suggest that learning of mathematical concepts may be constrained by several factors ranked as

psychographic or demographic factors. The most reported psychographic factors include concepts such as the personality of student attitudes, socio-cognitive aspects, motivation and anxiety about mathematics. The demographic factors focus more specifically on gender differences (see for instances Bakar et al., 2010; Homayouni, 2011; Kargar et al., 2010; Sirmaci, 2010). Most Portuguese studies on the learning of mathematics focuses only on demographic factors or on the level of elementary education or high school. The literature does not identify Portuguese studies that include psychographic factors. Even so, the concerns about school failure have played a leading role in research in education in Portugal (Buesco, 2012). The PISA 2006 showed that the performance of Portuguese students in science, although improving, is still lower than most OECD countries. In 2000, Portuguese students occupied one of the last places, but in 2009 it was the first time they achieved scores that fall in the average performances of the OECD (Conboy, 2011). In this context, it is opportune to explore the learning of mathematical concepts in Portugal, particularly in the specific context of university education and of engineering education, an area with strong math component and recognized impact on the application of mathematical developments.

3. Objectives and methodology

This study was conducted in three stages. In a first stage, two focus groups were carried out with undergraduate students of Master in Industrial Engineering and Management (MIEGI) and Master in Mechanical Engineering (MIEMAC) of University of Minho. The first focus group was involved students from 3rd, 4th and 5th years of the MIEGI course with a total of 10 students, 5 female and 5 male, aged between 21 and 24 years old who participated in the study. Due to the specificity of the MIEGI course, (with a strong management component), it was of the utmost interest to reproduce the focus group and broadening the investigation to engineering courses with a stronger technical foundations and stronger needs concerning the application of mathematical concepts. We therefore conducted a second focus group with undergraduate students in the 2nd year of MIEMAC with a total of 28 students, 24 male and 4 female, aged between 19 and 32 years old participated in the study. The objective of the focus groups was to know the opinions of the students about mathematics in general and ascertain the factors that they identified as influencing their performance in UC's with mathematics background. The focus groups, with 30 minutes each, were carried out in two stages: a discussion oriented by six questions script; 2) a comment to three sentences presented to the students.

In a second phase, we examined the literature related to the factors that influence the learning of mathematical concepts and engineering education.

In order to complement our studies, we developed a questionnaire using existing scales that included items related to engineering self-efficacy (Korea et al, 2009), items evaluating students perceptions of the relevance of mathematics in engineering (Flegg, Mallet & Lupton, 2011) and anxiety towards mathematics (Bai, Wang, Pan, & Frey,2009).

The final questionnaire consists of 8 initial questions with the purpose to characterize the sample followed by 3 sections, in the format of a five point Likert scale, with 25 items whose purpose is to measure and analyze the perspectives of engineering students about learning mathematical concepts, as well as difficulties perceived related to the importance of mathematics in their future career. The first section, with 8 items aims to assess the perceived importance of mathematics; the second section with 5 itens aims to assess anxiety towards mathematics and finally in third section, with 12 items, we intended to assess self-efficacy.

In order to validate the questionnaire a pretest was driven with a pilot group. The aim was to verify the suitability of each item to the interpretation of subjects with characteristics similar to the sample to be surveyed (Coutinho, 2011).

4. Results

4.1. Focus group

From the students' answers we were able to group their opinions in 5 categories: perceived importance of mathematics; the influence of parents/society/piers; study method/gender influence, teaching methodology/teacher. In table 1 we present the main results.

Table 1. Results from focus group

Category	Main Results
Perceived importance of mathematics	- The mathematic was essential in their choice of courses; - Mathematics is considered as an essential discipline in course selection and a vital part of their career as engineers
Influences of parents/society/piers	- Society is partly responsible for the negative views about mathematics - The parents' opinion is an important factor that influences the student's view of mathematics.
Study method/gender	- Female students are more methodical and devoted to their studies than their male counterparts, therefore there are able to obtain better results.
Teaching methodology/teacher.	- The lectures, in their exhibition molds, require greater care at a motivation level and at making the students better perceive their importance. - Students would like their courses to address mathematical concepts that are more in line with their future professions - The importance of the instructor is recognized when learning mathematical concepts.

4.2. Questionnaire

A total of 25 items of the instrument was analyzed. The items were presented on the format of a five-point Likert scale (1 - strongly agree, 2 - agree, 3 - not agree nor disagree, 4 - disagree or 5 - strongly disagree). The items which sound negative in their meaning were coded reversely in SPSS. All items were positively coded before proceeding with the analysis. All factors demonstrated good internal reliability, as shown in Table 2.

Table 2. Reliability

Scale	Nº items	Cronbach's Alpha
Perceived importance of mathematics	7 (one item was removed)	.741
Anxiety towards mathematics	5	.794
Self-efficacy	11 (one item was removed)	.813

The characterization of the sample is presented in Table 3. From a total of 72 respondents 42.5% were female and 57.5% of them were male. The majority were MIEGI students (43.8%) followed by MIEMAT students (24.7%), MIEBIOL students (21.9%) and MIEPOL students (9.6%).

Table 3. Profile of Respondents

Respondents' Profile	Number of respondents	Percentage of respondents
Gender	Male	42
	Female	31
Course	MIEBIOL	16
	MIEGI	32
	MIEPOL	7
	MIEMAT	18

Students' level of perceived importance of Mathematics, anxiety towards Mathematics and self-efficacy.

Table 4 indicates descriptive measures of students' level of perceived importance of Mathematics, anxiety towards Mathematics and self-efficacy. The mean of all respondents' perceived importance of Mathematics is 3.90, the mean of their anxiety towards Mathematics is 2.15 and the mean of students' self-efficacy is 3.69.

Table 4. Students' level of perceived importance of Mathematics, anxiety towards Mathematics and self-efficacy

	N	Minimum	Maximum	Mean	Std. Deviation
Perceived importance of Mathematics	72	2.57	5	3.90	0.51
Anxiety towards Mathematics	71	1	3.80	2.15	0.75
Self-efficacy	71	2.18	4.55	3.69	0.45
Valid N	72				

Gender differences on students' level of perceived importance of Mathematics, anxiety towards Mathematics and self-efficacy.

Table 5 shows that the mean of perceived importance of Mathematics of female is 3.80 and the mean of perceived importance of Mathematics of male is 3.97. There isn't significant difference between male and female groups on their perceived importance of Mathematics ($t = 0.159, p > 0.05$). This table also shows the mean of anxiety towards Mathematics of male is 2.19 and the mean of anxiety towards Mathematics of female is 2.09. There isn't also significant difference between male and female groups on anxiety towards Mathematics ($t = 0.60, p > 0.05$). The mean of self-efficacy of male is 3.68 and the mean of self-efficacy of female is 3.70 which indicates there isn't significant difference between male and female groups on self-efficacy ($t = 0.88, p > 0.05$).

Table 5. Students' level of perceived importance of Mathematics, anxiety towards Mathematics and self-efficacy by gender.

		N	Minimum	Maximum	Mean
Perceived importance of Mathematics	Male	41	2.71	5	3.97
	Female	31	2.57	4.71	3.80
Anxiety towards Mathematics	Male	41	1	3.80	2.19
	Female	30	1	3.80	2.09
Self-efficacy	Male	41	2.18	4.55	3.68
	Female	30	3	4.55	3.70

Table 6. T-test analyzes based on gender

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Perceived importance of Mathematics	Equal Variances Assumed	0.983	0.325	1.422	70	0.159	0.12098
	Equal Variances Assumed	0.030	0.863	0.532	69	0.596	0.09691
Self-efficacy	Equal Variances Assumed	0.002	0.965	-0.168	69	0.867	0.01818

Students' level of perceived importance of Mathematics, anxiety towards Mathematics and self-efficacy by course.

Results presented in Table 7 indicate that the mean of perceived importance of Mathematics, anxiety towards Mathematics and self-efficacy of the four courses are similar. Hence further analyses indicated that there is no significant difference between groups on perceived importance of Mathematics ($\text{sig}=0.274, p > 0.05$). There isn't also significant difference between courses on anxiety towards Mathematics mean ($\text{sig}=0.52, p > 0.05$) and self-efficacy mean ($\text{sig}=0.940, p > 0.05$) (Table 8)

Table 7. Students' profile based on course.

		N	Minimum	Maximum	Mean
Perceived importance of Mathematics	MIEBIOL	16	3.14	5	4.11
	MIEGI	32	2.57	4.71	3.83
	MIEPOL	7	3.29	4.43	3.76
	MIEMAT	17	2.57	4.71	3.87
	MIEBIOL	15	1.20	3.60	2.12
Anxiety towards Mathematics	MIEGI	32	1	3	1.99
	MIEPOL	7	1.20	3.60	2.86
	MIEMAT	17	1	3.80	2.18
	MIEBIOL	15	3.18	4.55	3.75
	MIEMAT	17	3.18	4.27	3.66

Table 8. Analyzes based on course (Anova)

		Sum of Squares	df	Mean Square	F	Sig.
Perceived importance of Mathematics	Between Groups	1.027	3	0.342	1.325	0.274
	Within Groups	17.581	68	0.259		
	Total	18.609	71			
Anxiety towards Mathematics	Between Groups	4.307	3	1.436	2.709	0.52
	Within Groups	35.510	67	0.530		
	Total	39.817	70			
Self-efficacy	Between Groups	0.083	3	0.028	0.133	0.940
	Within Groups	13.975	67	0.209		
	Total	14.058	70			

5. Conclusions

Results show that students have a high self-efficacy and a high perception that the learning of mathematical concepts and the development of mathematical skills is essential for progression in their future career. It is evident from this study that students generally see the relevance of mathematics to engineering courses. Mathematics is considered as an essential discipline in course selection and a vital part of their career as engineers. The importance of the instructor is recognized when learning mathematical concepts. Students would like their courses to address mathematical concepts that are more in line with their future professions. We consider these results as preliminary results, which require future evidence with a bigger sample and a comparison with other engineering students.

References

- Bai, H., Wang, L., Pan, W., & Frey, M. (2009). Measuring mathematics anxiety: Psychometric analysis of a bidimensional affective scale. *Journal of Instructional Psychology*, 36 (3), 185-193.
- Bakar, K.A., Tarmazia, R.A., Mahyuddina, R., Eliasa, H., Luana, W.L., & Ayub, A.F.M. (2010). Relationships between university students' achievement motivation, attitude and academic performance in Malaysia. *Procedia - Social and Behavioral Sciences*. 2(2), 4906-4910.
- Buescu, J. (2012). *Matemática em Portugal: Uma questão de Educação*. Lisboa: Fundação Francisco Manuel dos Santos.
- Coutinho, C. P. (2011). *Metodologia de Investigação em Ciências Sociais e Humanas: Teoria e Prática*. Coimbra: Almedina.
- Conboy, J. (2011). Retention and science performance in Portugal as evidenced by PISA, *Procedia Social and Behavioral Sciences*, 12, 311–321
- Flegg, J.; Mallet, D., Lupton, M. (2012). Students' perceptions of the relevance of mathematics in engineering. *International Journal of Mathematical Education in Science and Technology*, 43(6), 717-732.
- Homayouni, A. (2011). Personality Traits And Emotional Intelligence As Predictors Of Learning English And Math. *Procedia - Social and Behavioral Sciences*, 30, 839-843.
- Kargar, M. Tarmizi, & R.A. Bayat, S. (2010). Relationship between Mathematical Thinking, Mathematics Anxiety and Mathematics Attitudes among University Students. *Procedia - Social and Behavioral Sciences*. 8, 537-542.
- Korea, S.; Kore, J.; Korea, Y. (2009). Development and validation of a scale to measure the engineering self efficacy for engineering students. http://www.ineer.org/Events/ICEEiCEER2009/full_papers/full_paper_158.pdf
- Meelissen, M., & Luyten, H. (2008). The Dutch gender gap in mathematics: Small for achievement, substantial for beliefs and attitudes. *Studies in Educational Evaluation*, 34(2), 82-93
- Sirmaci, N. (2010). The relationship between the attitudes towards mathematics and learning styles. *Procedia - Social and Behavioral Sciences*, 9, 644-648.

DIDACTICS OF BODY FOR COGNITION. NEUROBIOLOGICAL SCIENCES AS SUPPORT TO PEDAGOGICAL PERFORMANCES

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Abstract

The research project, in agreement with the Department of Human Sciences, Philosophy and Training and the Department of Pharmaceutical Sciences at the University of Salerno, aimed to investigate the possible correlation between cortisol and learning, using the teaching of corporeity as teaching/learning methodology. Starting from the theoretical framework, the mechanism of mirror neurons to empathy approach, the selective pressure on the genetic heritage of the human population by proteome product, Kandel's reflections on underlying environmental epigenia and synaptic circuits are checked by experience are only some paradigmatic strengths which give great value to environmental input to the report body and in preserving and enhancing neuronal networks. Many studies have also shown that the activation and strengthening of mnemonic processes, may be indirectly related hormone cortisol changes in its hippocampal feedback. The project has provided, as part of a research-action, the administration on experimental teaching groups of corporeality; in parallel the same learning units programmed by teachers were administered in control groups with traditional method. For teachers who have joined the research project was conducted a training course on Neuroscience applied to education. The sample (250 children) was chosen within the school population-based primary school. The effectiveness of corporeality applied to teaching, was assessed through a biological parameter, cortisol, which through quantitative and qualitative test of skills assessment and previous knowledge and acquired in short, medium and long term. Analyzing data emerged, it is evident that the body has led to the experimental class, a raising of the rate of cortisol, with subsequent return to normal afterwards. Constant and light, however, was the growth in the level of cortisol for monitoring class, indicating a higher level of consideration value of experimental class in the final stage. In parallel, the results of learning content test clearly demonstrate that the clinical trial protocol raised the success percentage of correct answers. In this sense, the teaching body protocol considered as innovative methodology, developed, thanks to good professional conduct of teachers, educational circumstances in which students face with interest and curiosity the cognitive issues that arise during lessons.

Keywords: Cortisol, body, learning, evaluation.

1. Introduction

To start from a theoretical framework, until two decades ago, the complex of studies into psycho-pedagogical field considered senso-motoric functions a mere basic mechanism in the development of intelligence and learning. The vision suffered strongly of application, in the educational field, of the Cartesian dichotomy between mind and body, "thought up" and "hydraulic motor component". The current findings in the neuroscientific field suggest to modify this view, to rewrite the theory of mind and give the body the value of fundamental and constitutive part of social and cognitive processes. The neo-Darwinian theory, on selection of synaptic connections in

embryonic development, as well as the reflections of Kandel, on the underlying environmental epigenia, outline a cerebral array ready and open to social context of future membership. At a glance all neuroscientific discoveries contribute to outline a development of intelligence and closely interconnected learning experiences, with an attribution of meaning of "more authentic" if you lived them through the body.

However there is a methodology that allows combining experimental neuroscientific research data with systematic observations and experimental "psicopedagogic" data of educational research. Many researches have shown that the activation and strengthening of mnemonic processes, may be indirectly related to the hormone cortisol, changes in its hippocampal feedback (Davidson RJ, Irwin W. , 1999 - Dolan RJ., 2002 - Wang J, Rao H, Wetmore GS, Furlan PM, Korczykowski M, Dinges DF, Detre JA., 2005). The theory of "meme", units of cultural information, transmitted within a population through social learning, attach to culture mirrors a selective pressure on the genetic heritage of the human population by proteome product (Arjamaa and Vuorisalo, 2010). Therefore, the effectiveness of the teaching of corporeality in the co-construction of knowledge and greater awareness of the self, evaluated on the basis of a possible correlation with changes of salivary cortisol, it could represent a first meeting between different methodology disciplines, that bio-neuro-scientific and educational, as well as a method to study and explore the phenomenon of activation and strengthening of the processes of consciousness and memory.

2. Objectives

Considering also the theory on embodied cognition (Welsh, 2007), the research group wants to examine whether the co-construction of meaning, carried out by the teaching of corporeality, can have positive effects on the process of learning and long-term memory in students, from I to V, class of primary school.

3. Methodology

The following overview shows the search context.

Context	The province of Salerno
Recipients	3° Circolo di Pagani, 1° Circolo di San Valentino Torio and 4° Circolo di Cava dei Tirreni
Partecipants	250 students of 10 classes, 2 classes for every grade
Aim	To verify if the body didactics determine correlation between learning and cortisol
Protocol	Learning Units of 10 hours body didactics as independent variables for the 5 experimental classes
Tools	Content Test Salivar Cortisol Analisis (in micromoli/l)

The project has provided, in the context of action research (Cunningham, 1976), the administration on experimental teaching groups of corporeality; at the same time learning about the units programmed by teachers were administered in control groups with traditional mode. The sample was chosen within the school population of primary school. The effectiveness of corporeality applied to teaching, was assessed through a biological parameter, cortisol, and through quantity-qualitative assessment-skills tests and previous knowledge acquired in the medium and long term. For teachers who have joined the research project was provided a training course, of 30 hours, on Neuroscience applied to education and on playful-motor laboratory methodologies to enhance the role of corporeality as active motor of learning processes. This course has developed a methodology of lab background approach, offering the same teachers

the ability to simulate bodily experiences and subjective meanings emerged. The same model was applied on the occasion of the didactics of corporeal by teachers for the whole sample in experimental research. The Protocol the teachers have adopted with their students of the primary school, which lasts 10 hours for the creation of a learning unit (body teaching 2:0 day for 5 consecutive days of the week), represents a methodological innovation which combines the action research with lab experience, allowing teachers to project a participatory learning with their children and of a conscious training. Join to participate!

Protocol and tools are well illustrated in the tables below.

Protocol 2 h/day for L.U.	20 minutes	40 minutes	20 minutes	40 minutes
Activity	Envirenoment	Body Experience	Verbalization	Metareflection
Risult	Pro-active predisposition	Body cognition	Shared cognitive reprocessing	Curricular contextualization

Tools	Salivar analysis	Test
Aims	Cortisol rate	Learning content of Learning Unit
Motivation of use	Possible correlation	Planning

According to the Department of Pharmaceutical Sciences, there was a specifically scientific cooperation with skills needed to:

- give suggestions about the biological detection of salivary cortisol of those leagues;
- analyze it biologically in the laboratory;
- comment on the methodological procedure adopted in the laboratory.

The methodological procedure of the entire research has followed a path that, chronologically, responds to articulated instruments administration schedule and duration of experimental teaching week. The following table shows clearly.

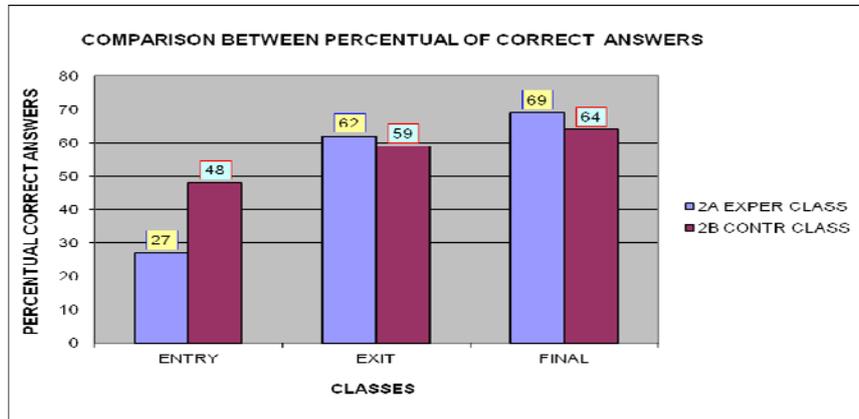
1			2		3				
04/05	05/05	06/05	09/05		16/05	17/05	18/05	19/05	20/05
Cortisol detection (pre-experimentation)			Test administration (entry)		Cortisol detection (experimentation)				
4		5				6			
23/05		30/05	31/05	01/06	06/06				
Administration test (exit)		Cortisol detection (post-experimentation)				Test administration (final)			

In this paper we will present only the data from the 2° school classes of Cava dei Tirreni, in which 2° A was an experimental class and 2° B a control class. The 2° B, as control class, achieved the learning unit testing during the week (16-20 May) according to a methodological redoing to conduct "traditional didactics", understood as the natural continuation of the method used until then by the teacher of the class. Both classes, of course, had the same object of study, "The minimum sentence expansions" in respect of the following points. Prerequisites: to understand that the sentence is an ordered sequence of words; locate within a phrase the sentence minimum. Objective: to recognize, distinguish and classify the simplest morpho-syntactic categories. Project purpose: to understand and classify the major expansions of the minimum sentence. Contents: the complement of time; the complement of place; the complement of company. The Audit Board is composed of closed questions, multiple-choice questions and open-ended questions to be administered in both classes inbound, outbound, and final (the latter Administration to measure long-term effects). It is necessary to emphasise that these data, which we will present in graphical form, should be "interpreted cautiously" because they may be affected by the remaining sample (8 other classes). Their reading, in fact, represents the first occasion to reflect on the innovative correlation between the biological and psycho-pedagogical data within the ordinary school education.

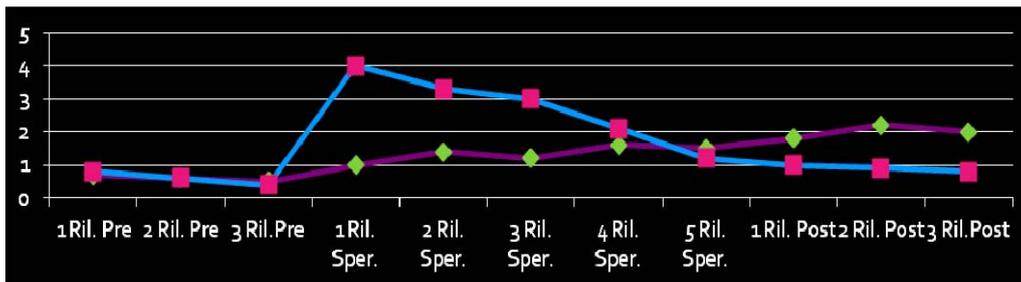
4. Results

The chart n. 1, represents the percentage of correct answers of the two classes. Graphic 2, on the other hand, depicts trends of medians of cortisol rate measured in two classes. The x-axis represents the days of detection of saliva and the y-axis the level of cortisol present in classes (blue 2° A and 2° bordeaux B) measured in micromoli/l.

Graphic 1



Graphic 2



5. Discussion and conclusions

In order to analyze the data that emerge from the graphs, it is clear that the body has led to teaching, to the experimental class, a raising of the rate of cortisol to peak (well over 6 times the average of the results) with subsequent return to normal afterwards. Constant and slight, however, was the growth in the level of cortisol for the control class, indicating a higher level of consideration value of experimental class in the final stage. One of the meanings they ascribe to this light and steady growth in the level of cortisol of 2° (B) is related to the period of the school year, at the end of which students manifest attitudes of tiredness, boredom, stress, all recordable behaviors so undoubtedly empirical. In parallel, the results of the verification Board learning content clearly demonstrate that the experimental protocol raised the success percentage of correct answers. Hypothetically these results should extend to the entire evaluation sample (250 students), we recognize that, in accordance with a principle of statistical correlation, to learn better you need a higher cortisol rate, so a healthy cognitive tension (Siegel, 2008). In this sense, the teaching body protocol (Gomez Paloma, 2009), innovative methodology, develops, thanks to good professional conduct of teachers, educational circumstances in which individuals face with interest and curiosity the cognitive issues that emerge during the lessons. It will be very interesting, at the end of processing, reflect on individual students and calculate the correlations that exist in relation to specific parameters such as: age, gender, culture, social context.

References

- Baddley, A., Winlkins, A.J. (1984). *Taking memory out of the Laboratory*. in Harris J.E. Morris P.E., *Every day memory, actions and Absent-Mindedness*. London: Academic Press.
- Ernst, H. Gombrich, *Aby Warburg: an Intellectual Biography*, The Warburg Institute, University of London, London 1970; tr. it. di Dal Lago A., Rovatti, P.A. (2003). *Aby Warburg. Una biografia intellettuale*. Milano: Feltrinelli.
- Gallese, V. and Goldman, A. (1998). *Mirror neurons and the simulation theory of mindreading*, Trends in Cognitive Sciences.
- Gallese, V. (2005). *Embodied simulation: from neurons to phenomenal experience*. Phenomenology and Cognitive Science.
- Gomez Paloma F. (2009). *Corporeità, didattica ed apprendimento. Le nuove NeuroScienze dell'educazione*. Salerno: Edisud.
- Grafman, J., Christen, Y. (1999). *Evidence for four forms of neuroplasticity*. In *Neuronal Plasticity: Building a bridge from the laboratory to the clinic*. Berlin: Springer-Verlag,
- Jeannerod, M. (2007). *Motor cognition. What actions tell to the self*. Oxford: University Press.
- Nelson, K. (1993). *Events, Narratives, Memory: What develops?* In Minnesota Symposia on Child Psychology.
- Schacter D. (2001). *Searching for memories*, Ed it. *Alla ricerca della memoria*, Torino: Einaudi.
- Wheeler, et Al. (1997). *Toward a Theory of Episodic Memory. The Frontal lobes and Autonoetic Consciousness*. Psychological Bulletin.

INTERNET INTERVENTIONS IN PHYSICAL ACTIVITY AND DIETARY BEHAVIOR FOR ADOLESCENTS – WITH OR WITHOUT SCHOOLS?

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Abstract

Purpose of Study: To perform a review on internet interventions for adolescents focusing physical activity and dietary behavior and to understand the effect of schools and teachers involvement in the outcomes.

Background: Although the well known benefits of a healthy lifestyle (high physical activity levels and a healthy eating pattern), the adolescents of most industrialized countries fail to meet dietary and physical activity guidelines.

Most governments are trying to find effective interventions that may focus in a wide range of individuals, rather than face to face (school based) interventions.

The internet has been used recently in a lot of health interventions, its advantages have been mentioned broadly, especially when targeting children and adolescents.

Recent reviews on similar topics are not coherent on their conclusions, some are in favour of the computer based interventions, others mention that there is no clear effectiveness of eHealth interventions. However no studies exclusively on adolescents were found. It seems relevant to perform an updated review, focusing studies with adolescents.

Methods: Articles were identified for inclusion using key word database literature searches. An initial search using electronic databases: Medline, ISI Web of Knowledge, Elsevier and Ebsco was performed, using as key terms: Internet Intervention; Web based intervention or online intervention. The search was completed using the Boolean term “and” with expressions: nutrition; diet; physical activity; exercise or motor activity. The full text review was done according to a matrix developed in a Microsoft windows excel database. It was calculated a quality score, based in nine methodological items.

Conclusions and discussion: Most of the papers reviewed had modest results in favour of the intervention group, but failed to show long term effects, when evaluated.

Less than 50% of the studies involved teachers, schools, parents or group leaders, and no relation was found between this involvement and the outcomes.

This review shows that besides the importance of interventions for adolescents, few studies are published. The improvement in diet and physical activity outcomes seem modest and not long term, either with the involvement of schools or not. Schools should evaluate and improve the health education programmes. The authors suggest that more interventions should be planned including innovative methodologies, as so much is still to be known in how to improve health behaviours in adolescents.

Keywords: Health education, physical activity, nutrition, adolescents

1. Introduction

Physical Activity and diet are the two main modifiable behaviors that may interfere with most diseases, in all ages. Childhood and adolescence are the age

groups that should have the focus from most interventions, since lifestyle adopted in these ages, namely the eating and physical activity behaviors have been mentioned as a cause for overweight and obesity in childhood, adolescence and later on adult years. (G. Rodriguez, 2006; S. S. Guo, 1999)

Although the well known benefits of a healthy lifestyle: physically active and a healthy eating pattern, the population of most industrialized countries fail to meet dietary and physical activity guidelines. (Rhonda S. Sebastian, 2008)

As a method to fight this reality, most governments are trying to find effective interventions that may focus in communities and a wide range of individuals, rather than face to face, individual interventions. School based interventions have been traditionally chosen as the best strategies to target adolescents, however the new technologies, specially the internet have been used recently in a lot of health interventions, in all age groups. (Corneel Vandelanotte, 2007; Gregory J. Norman, 2007) Considering world health recommendations for children and adolescents health interventions, school and teachers involvement is crucial for the success and goal achievement

Internet advantages have been mentioned broadly: personalization of experience, enhancement of cultural sensitivity, (Nigg, 2003) fastest access to information, at any time and place, (CO Cummins, 2004; J Brug, 2005) ability to keep information updated and accurate at a low effort and cost, (J Brug, 2005) possibility of anonymous participation, possibility of a more frequent contact and support asynchronously. (KYA McKenna, 2000) Interactive tools, such as discussion forums or boards, e-mail exchange and virtual meetings, may permit the sharing of experiences between participants. (KYA McKenna, 2000) Mentioning the characteristics that please children and adolescents, it has to be referred the attractiveness of the educational games, the website design and the possibility of using a technology of information and communication. (Thompson, 2010)

Recent reviews on similar subjects are not coherent on their conclusions. Some suggest the effectiveness of internet/ computer interventions, others conclude the opposite, but non focus on adolescents. Little is known about schools and teachers involvement in these internet based interventions.

The current study aims to perform a review on internet interventions for adolescents focusing physical activity and dietary behavior and to understand the effect of schools and teachers involvement in the outcomes.

2. Methods

2.1. Data Sources and Search terms

Articles were identified for inclusion using key word database literature searches.

An initial search using electronic databases: Medline, ISI Web of Knowledge, Elsevier and Ebsco was performed, using as key terms: Internet Intervention; Web based intervention or online intervention. The search was completed using the Boolean term "and" with expressions: nutrition; diet; physical activity; exercise or motor activity.

No time frame was defined considering the small amount of internet intervention studies directed to adolescent samples.

2.2. Data Sources and Search terms

Articles were included in the review if the abstract, title, or key words indicated that the studies focused on a Diet or Physical Activity Internet Based Intervention for adolescents. Inclusion criteria limited articles to randomized control trials or quasi-experimental studies; publications in a peer-reviewed journal and availability in English.

Publications were not included if title or abstract suggested a sample different than adolescents, if it were Review articles, if it were not an article, if it did not focus on physical activity, eating behaviour or weight control, if it were not an internet intervention. Interventions including a mixed method were included if the main method was web-based.

All articles resulting from the first search criteria were included for abstract review. In this phase duplicate articles, articles focusing on parents or non adolescent populations; conference documents and papers reporting non intervention researches were excluded. Interventions including non adolescent groups were included if there were separate results for the adolescent group.

Finally, 45 articles were included for a more extensive review, from these 10 corresponded to all inclusion criteria.

2.3. Data Extraction

The full text review was done according to a matrix developed in a Microsoft windows excel database, developed based on previous studies review criteria (Corneel Vandelanotte, 2007; Gregory J. Norman, 2007; Nancy L. Cohen, 2011). The following headings were analyzed: Publication Information (author, title, journal, year of publication); adolescents' characteristics [age; gender; sample (size, calculation and control group); equivalence of groups at baseline; different groups created; nationality; ethnicity; other characteristics of relevance]; Methods: Project (Study design; Theoretical framework; individual randomization; isolation of technology; pre and post test design; retention rate; missing data analysis) Intervention characterization (objectives, main focus areas/ behaviour targeted, setting; resources/ intervention technologies; resources/ control conditions; engagement, teacher or family support, year of intervention and length/ duration); About Internet (format; frequency; interactivity); Intervention Evaluation (measures; measurement methodology; PA objectively measured?; Diet measurement?; validated measures?; results/ effects; recommendations); and Additional Comments. These headings were subsequently collapsed into the results table.

It was also calculated a quality score, as mentioned in a previous study (Gregory J. Norman, 2007), based in nine methodological items. The presence of an item was score with one point, for a total of nine items /points, the original authors criteria was considered.

3. Results

The analyzed studies had a mean quality score of 6.1 (max=9; min=2) out of 9.

The studies involved adolescents with a mean age of 13.8 +/- 1.83, varying from 12 to 18.1 years. 60% of the interventions were directed to both genders, mainly for American adolescents (60%).

Sample sizes were very different between studies, the smallest one used 21 individuals and the largest sample included 473.

The intervention project was based in a theoretical framework in 50% of the cases, mostly Social Cognitive Theory (30%). Website technology was used in 80% of the studies included in this review, but it was also found e-mail support and cell phone related technological devices. Most of the studies (60%) did not involve schools or teachers. In average the duration of the intervention was 8.6 +/- 4.24 weeks.

90% of the interventions had positive results when compared to the baseline data, however only 50% had significantly better results than the control group. Table 1 shows the main results.

No significant association between the involvement of schools and the results of the intervention (versus baseline or versus control group) was found.

Most of the papers reviewed had modest results in favour of the intervention group, but failed to show long term effects, when evaluated.

Sample Characteristics		
Mean Age	Mean; SD	13.8; 1.83
	Minimum	12.0
	Maximum	18.1
Gender (%)	Female	20.0
	Male	20.0
	Both	60.0
Nationality	American	60.0
	Australian	10.0
	German	10.0
	Chinese	10.0
	Not mentioned	10.0
Intervention Project		
Theoretical Framework (%)	Social Cognitive Theory	30.0
	Cognitive Behavioral Theory	10.0
	Transtheoretical Model	10.0
	Not mentioned	10.0
Sample Size	Mean; SD	198.7; 165.60
	Minimum	21
	Maximum	473
Technology used (%)	Computer	10.0
	Website	80.0
	Other	10.0
School/ Teachers Involvement (%)		40.0
Duration	Mean; SD	8.6; 4.24
	Minimum	2.0
	Maximum	16.0
Improvement Results (%)	Versus baseline data	90.0
	Versus control group	50.0

4. Conclusions and Discussion

This review shows that besides the importance of physical activity and dietary interventions for adolescents, few studies are published. All the studies included featured the internet or other interactive technologies, expecting to facilitate the improvement in health behaviours.

It seems evident that these interventions improve behaviours compared to the baseline data, suggesting efficacy in a lower budget, as previously mentioned. However it is still not clear if including the new technologies have more significant results as the traditional methods.

There may be a theory based or a dose effect as extremely different approaches were found. Although specific recommendations for these interventions are needed, we found no sufficient evidence to make such recommendations.

WHO recommends involving schools in health promotion intervention for children and adolescents (WHO, 2009); however in this review we found that only 40% of the studies did so. Further on we investigate the association of this involvement with the results, and found no statistical significance. More studies are needed to confirm the magnitude of the benefits of including schools and teachers.

The improvement in diet and physical activity outcomes seem modest and not long term, either with the involvement of schools or not. Schools should evaluate and contribute to the improvement of the health education programmes.

Regarding the overall quality of the study design most studies reviewed had high scores, however 20% had a negative quality (score <2).

The authors suggest that more interventions should be planned including innovative methodologies in along with schools/ teachers, as so much is still to be known in how to improve health behaviours in adolescents.

Acknowledgments

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References

- CO Cummins, K. E., JL Johnson, A Paiva, JO Prochaska, JM Prochaska. (2004). Assessing stage of change and informed decision making for internet participation in health promotion and disease management. *Managed Care Interface*, 17, 27-32.
- Corneel Vandelanotte, K. M. S., Elizabeth G. Eakin, Neville Owen. (2007). Website-Delivered Physical Activity Interventions: A Review of the Literature. *American Journal of Preventive Medicine*, 33(1), 54-63.
- G. Rodriguez, L. M. (2006). Is dietary intake able to explain differences in body fatness in children and adolescents? *Nutrition, Metabolism and Cardiovascular Diseases*, 16, 294-301.
- Gregory J. Norman, M. F. Z., Marc A. Adams, Dori E. Rosenberg. (2007). A Review of eHealth interventions for Physical Activity and Dietary Behavior Change. [Review]. *American Journal of Preventive Medicine*, 33(4), 336-345e337.
- J Brug, A. O., W Kroeze, H Raat. (2005). The internet and nutrition education: challenges and opportunities. *Eur J Clin Nutr*, 59, S130-S137.
- KYA McKenna, J. B. (2000). Plan 9 from cyberspace: the implications of the internet for personality and social psychology. *Personality Soc Psychol Rev*, 4, 57-75.
- Nancy L. Cohen, E. T. C., Patricia A. Beffa-Negrini. (2011). The Design, Implementation, and Evaluation of Online Credit Nutrition Courses: A Systematic Review. *Journal of Nutrition Education and Behaviour*, 43(2), 76-85.
- Nigg, C. (2003). Technology's influence on physical activity and exercise science: The present and the future. *Psychol Sport Exerc*, 4, 57-65.
- Rhonda S. Sebastian, L. E. C., Joseph D. Goldman. (2008). Effect of Snacking Frequency on Adolescents' Dietary Intakes and Meeting National Recommendations. *Journal of Adolescent Health*, 42, 503-511.
- S. S. Guo, W. C. C. (1999). Tracking of Body Mass Index in Children in Relation to Overweight in Adulthood. *American Journal of Clinical Nutrition*, 70, 145S-148S.
- Thompson, D. B., Tom; Buday, Richard. (2010). Conceptual model for the design of a serious video game promoting self-management among youth with type 1 diabetes. *J Diabetes Sci Technol*, 4(3), 744-749.
- WHO. (2009). *Interventions on diet and physical activity: what works: summary report*. (9789241598248).

THE MOTOR LITERACY ITALIAN PROJECT. COST- BENEFIT ANALYSIS

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Abstract

In the Italian primary school qualified teachers are presently not fully involved in the teaching of physical education. Compared to other EU countries, the qualitative and quantitative level of motor activities in the educational field appears to be less adequate.

Over the past few decades, the Ministry of Education, Universities and Research (MIUR) has promoted several interventions in order to offset the negative trends resulting from the latest scientific research, both those examining the quantity of children's physical motor activities and also those dealing with the growth of phenomena such as sedentariness and improper nutrition. A "Motor Literacy" three-year project was activated in primary schools in 2009, following an agreement protocol between MIUR and the Italian National Olympic Committee (CONI). The project establishes that an expert with a degree in Physical Education (Scienze Motorie) has to assist the primary school teacher during the curricular hours of motor activity.

The purpose of the present study is to reflect on the positive and negative aspects of the project, whose activities aim at acquiring several motor abilities and active lifestyles. There has also been an attempt to outline a financial statement of the project through a cost-benefit analysis. The reference scientific literature and the three-year progress of the project have been re-examined using the theoretical-argumentative approach.

This study has made it possible to consider the strengths and weaknesses of the project and to analyze its effectiveness and scientific validity. The results of the project have been analyzed considering the data taken from national monitoring. The descriptive and statistical analysis has shown that the participants in the project obtained a significant increase in their abilities and motor skills. This is underlined by a substantial decrease in the number of mistakes made (48.9 %) in the prearranged course and by a slight improvement in the time taken to finish it (an average of 9.8 % considering the whole group analyzed).

The opinions of the students, the families and the school heads involved in the project have been collected through questionnaires which indicated 85% of positive answers and a general will to continue with the experience. The project expenses rose from 5 million euros in the first year to 12.5 million euros in 2013, with an average cost of 24 euros per student.

Overall, the results of the "Motor Literacy" project are positive for motor monitoring and also considering the approval obtained. If the Motor Literacy was extended to all students in Italian primary schools, with the introduction of a teacher holding a degree in Physical Education (Scienze Motorie), it would produce an increase in the physically active population and a general improvement in the level of the psychophysical conditions of the children. In addition, this would lead to an increment in the competitiveness and the efficiency of the country's production system.

Keywords: *Fisical Education, Primary School, Sedentary, Motor Science.*

1. Introduction

In Primary School Sport Education operates in line with what is provided by the European Charter as "physical activity which, through a casual or organized participation, aims at expressing or improving physical fitness and mental health of

people, with the promotion of socialization" (European Charter for Sport of the Council of Europe in the VII Conference of European Ministers responsible for Sport, held in Rhodes 13 to 15 May 1992, Article 2).

In Italy, in Primary School, the teaching of Physical Education has never been given to graduated in Physical Education, but entrusted to curricular teachers.

In 2009 the Ministry of Education and the National Olympic Committee, with a Memorandum of Understanding, gave life to the project "Motor Literacy" which, for the first time, suggests that an expert teacher, graduated in Physical Education, collaborates with the curricular teacher during school time (two hours per week instead of one) and proposes educational activities, specific of motor activity, with the assurance that this, along with aerobic capacity, improve cognitive, logical-mathematical and reading skills (Be smart, exercise your heart: exercise effects on brain cognition - Hillman, CH, Erickson, KI, & Kramer, AF 2008 - Nature Reviews Neuroscience, 9, 58-65) as well as, thanks to the regularity of the same, there will be an improvement of brain activity (increased blood flow, changing hormonal levels and arousal higher level) as well as increase of attention and school performance (Cocke, 2002; Tremblay et al., 2000; Dwyer et al., 1983; Shephard, 1997).

2. Design

The project involves two key figures: Experts and Supervisors. The expert, graduated in Physical Education, assists the curricular teacher and they both plan the objectives to acquire the motor skills and abilities, as suggested by the Ministerial Guidelines. The "curricular teacher-expert" relationship is fundamental to establish a fully shared methodology.

The expert is assigned to 10 classes and, for about 15 weeks, gives a two-hour lesson for a total of 20 hours per week. The expert programs his lessons in an articulated way from 1st to 5th class. He is responsible for periodic training-refresher sessions, organized at national and / or regional level.

The supervisor, however, is a teacher always titrated, but in possession of particular coordination experience in projects of physical activity and sport in the school.

The supervisor provides scientific assistance, coordinates and supports the experts for the preparation of educational programming, in relation to the objectives, content, methods and evaluation of motor skills acquired by the students; he can also perform "trainer" tasks in the area.

3. Objectives

The goal of the project is the improvement of motor skills and lifestyle through physical education in primary school.

The general objective is the implementation and fine-tuning of a correct and uniform program of physical education.

The specific objective is the implementation of a "motor-literacy" project, after the leader experience in 2009, to be implemented between 2010-2013 on the whole national territory in all classes.

4. Methods

The project is addressed to primary school children. The total duration of the project has involved about 520,000 students for a total of 3000 educational institutions around the country.

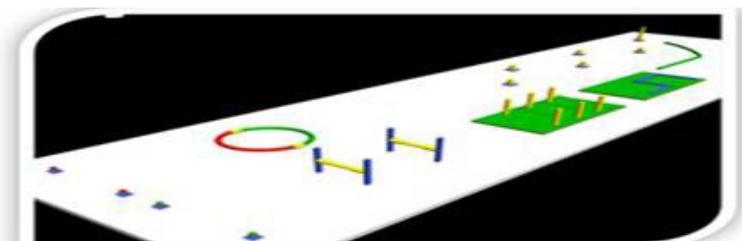
To evaluate the effectiveness of educational proposals, the Technical-Scientific Committee of the project, in collaboration with the Faculty of Kinesiology, University of Verona, had created 5 different motor pathways, with increasing complexity according

to the class of students, which included the passing of "seven motor tasks" with both quantitative and qualitative assessments.

For the pupils with difficulties, the members of the Committee arranged simplified motor courses.

The monitoring procedure involved the execution of an initial test, after the second week of the project, and a final one. For this purpose each participating school was provided with a (Ground Foam System GFS) Sports equipment kit for the homogeneous structure of the paths to guarantee the uniformity of the data collected and the scientific methodology.

An example of a tracking motor for the class IV (9 years):



The monitoring proposed by the first Technical and Scientific Commission and the Faculty of Sport Sciences, University of Verona stated:

- 5 different paths for the 5 classes;
- 7 motor tasks per route;
- progression of complexity;
- feasibility and quality;
- use of modular kits;
- accurate instructions (text, graphics and video).

Outcome: monitoring, capacity development (time, quantitative component), acquisition of motor skills (errors, qualitative component).

Timing: third week and twelfth week of the project.

The choice of educational proposals, although suggested and addressed by the above mentioned Commission, was entrusted to the expert teacher and class teacher who, beginning from the National Guidelines for the Curriculum, planned and proposed to the pupils.

A sample program for Class IV:

- Learning Objectives - the body and sense perception functions: become aware of the physical functions (cardio-respiratory and muscular) and changes resulting from exercise, also knowing how to modulate and control the use of conditional abilities (strength, endurance, speed) adapting the intensity and the duration of the motor task;

- Learnings expected: know the physiological changes related to motor activity, maintain a constant running pace for a certain time;

- Milestones for the development of competences: the student acquires knowledge through listening and observation of his own body, the mastering of movement and postural patterns, knowing how to adapt to the variables of space and time.

Furthermore, in conjunction with the monitoring of physical activity, two different questionnaires were given with the aim to assess the teaching performance:

1. the questionnaire of motor Self Efficacy, designed to detect the confidence that the students put in their ability to successfully deal with a specific situation. (Colella, D., Morano, M., Bortoli, L., & Robazza, C 2008).

2. the Physical Activity Enjoyment Scale questionnaire, to assess the level of individual satisfaction of the motor activity. (Kendzierski, D., & De Carlo, K.L. 1999)

Both questionnaires are based on two fundamental principles that support human behaviour: the principle of personal development and the principle of fun.

5. Results

All results of the tests have been computerized and published on the site www.alfabetizzazione motoria.it.

The results of the motor and enjoyment monitoring have shown that pupils achieved a significant increase in abilities and motor skills, highlighted by a substantial reduction in the number of errors made (-48.9%) and the improvement in run time (an average of 9.6% on the whole group analyzed).

The improvement was larger in males than in females and in the classes of the second cycle than in the first cycle.

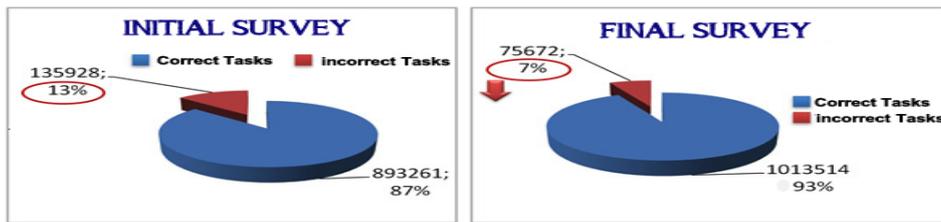


Figure 1. Monitoraggio di efficacia, fonte: www.alfabetizzazione motoria.it

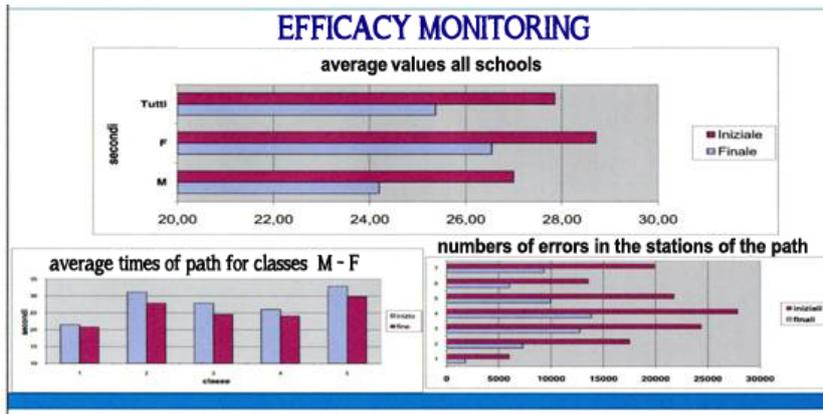
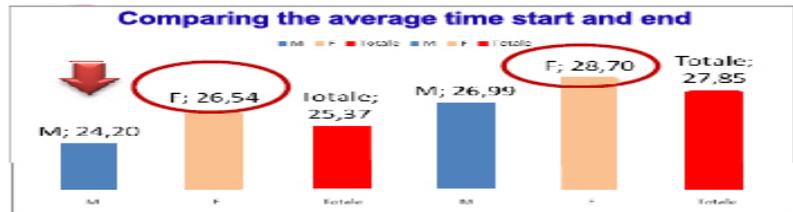


Figure 2 and 3. Efficacy Monitoring from: www.alfabetizzazione motoria.it



As we can see, even the decrease in run time, the quantitative element of trail, took place for all 5 classes. Particularly evident the difference between the average times of classes with about 30% between the 1st and 5th, a sign that they represented different difficulties.

6. Discussion/Conclusions

The monitoring data, in particular those ones referring to enjoyment provided by headmasters, pupils and their parents, confirmed the approval of the initiative unanimously (the positive indicators exceeded 85% of the answers).

The strengths of the project consist of the centrality of the child in the educational process; the presence of an expert teacher, graduated in Physical Education, along with the curricular teacher; continuity and duration of an upgrade and alignment of all the operators involved; monitoring of the program; availability of financial resources in support of the same.

As for the critical points we can highlight an incorrect didactic integration between teacher and expert; partial involvement of the classes, taking part in the project, within the school buildings (maximum 10 classes); motor monitoring to review, considering more the psychomotor component of the child and giving more scientific nature to the same.

The positive results, deduced from the monitoring of the results of the project, which developed with common and homogeneous features all over the country in the space of four years, beginning from the “pilot” experience of 2009 have had no more excuses for the noninclusion of motor activity in primary school.

The costs/benefits do not only refer to learning or training elements of the pupils.

It would be very interesting to start a new research which reflects upon the effects of this national project on the economic policy of the Italian school system.

Since 2010 after reinforcing and spreading the program on all of the provinces in an experimental way until 2013, the CONI and Miur decided to continue increasing it in primary schools in view of a possible full plan of action.

References

- C.O.N.I. (2012). *Il libro bianco dello Sport Italiano*. Roma.
- Carraro, A., Young, M.C., & Robazza, C. (2008). *A contribution to the validation of the Physical Activity*.
- Colella, D., Morano, M., Bortoli, L., & Robazza, C. (2008). *A contribution to the validation of the Physical Activity Enjoyment Scale in an Italian sample*. *Social Behavior and Personality*, 36, 841-848.
- Consiglio d'Europa, CDDS – Comitato per lo Sviluppo dello Sport. *Carta Europea dello Sport, Carta europea dello sport*. VII Conferenza dei Ministri europei responsabili dello Sport, Rodi, 1992.
- Gomez Paloma F. (2004). *Corporeità, didattica e apprendimento*. Salerno: Edisud.
- Gomez Paloma F. (2004). *Corporeità ed emozioni. Una didattica psicomotoria per la costruzione del saper ... essere*. Napoli: Guida Editore.
- Ministero della Pubblica Istruzione. *Indicazioni per il Curricolo per La scuola dell'infanzia e per il primo ciclo d'istruzione*. Roma, Settembre 2007.
- Be smart, exercise your heart: exercise effects on brain cognition – Hilman, CH, Erikson, KI, & Kramer, AF 2008 – *Nature Reviews Neuroscience*, 9, 58-65.
- Cocke, 2002; Tremblay et al., 2000; Dwyer et al., 1983; Shepard, 1997.
- Alfabetizzazione Motoria nella Scuola Primaria*. www.alfabetizzazionemotoria.it.

THE INTERSECTION OF THE AUTHORS IN THE QUOTIDIAN APPRENTICESHIP

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Abstract

The objective is to discuss the relations of the quotidian apprenticeship established between teachers and students. The focus is on school reality, its possibilities, routines and cultural diversifications, compared to actions the authors (teachers, students and community), analyses the intersection with the school cultural quotidian. The question is how the effect of the quotidian apprenticeship affects the relation between teachers and students. The research's context begins from the low rates of apprenticeship in the Primary Education Brazilian School. The hypothesis: the results obtained in the school suffer everyday cultural intersections, resulting in significant apprenticeship not rated. The research methodology, qualitative, was performed in two phases. The first: analyzed the depositions of 19 teachers, sought to understand the concept of educational routine and educational quotidian. The routine categorization in depositions of teachers, are standardized practices and quotidian practices are unusual. However, the limits that distinguish them proved to be tenuous and conflicted. In the second phase, the record was performed by the ethnographic research in two classes of students between 11 and 13 years, totaling 30 students of public schools, children of parents who do not have, in total, higher education, industry workers. The type of ethnographic research, based on case study is justified by the need to comprehend a particular case, prioritizing the context that generates and complexity of relations, for interpretation linked to cultural intersections in quotidian school life. Nothing observed suffered value judgment or criterion of assertiveness, the generated facts examined within category educational events scrutinized: the school quotidian. The procedure used was the observation, transcribed by chronic. The chronicle was the chosen genre, by having the subject a quotidian situation observed or experienced, allowing unusual conclusion. The chronicles enabled penetrate interpreting the relations established, the records are not neutral. The records to reveal categories: the actual time in the relationship between teacher and students to promote apprenticeship; use the time for personal relationships between teachers and students; students and students; and time for diversification in activities not directly related the content of the discipline. The first results showed that the apprenticeship by standardized routine, measured by school ratings represents 40% of class time. The remainder time focuses on different situations, linked to the quotidian and unusual, with no prescribed mediations or planned by the teachers and they apparently do not add value to the students, but they take 60% of class time.

Keywords: *Quotidian; ethnographic research; learning.*

1. Introduction

When we study the relations between subjects in school, during teacher training, we investigated predetermined categories in the curriculum; in the knowledge of sociology, philosophy, anthropology, psychology, didacticism, politics and more recently of diversity and inclusion. But even comprehensively with regard to knowledge and goals, this study becomes fragmented to analyze practices reflected by the

complex interaction between the subjects in the apprenticeship environment, or quotidian apprenticeship.

The study field of didactic, after the 1980s, in Brazil, points to the need for a reinterpretation of the actions and the quotidian apprenticeship, part of an instrumental view to fundamental analysis (Martins, 2008, p.20) , which according to the author corresponds, respectively, in didactic theory and didactic practice. The theoretical didactic takes as a starting point the theory for the practice on the basis of an educational trend that seeks to understand the principles that determine the practice. The didactic practice does not deny theory, but evaluates the interaction in the historical concrete moment of the relations of their educational goals, seeks the means for achieving the objectives.

Discuss the interaction of subjects of quotidian apprenticeship in teacher training does not mean examine only the positives and negatives of school as fact, is not fact that we care, but the move. In this paper we consider both studies the Stake (2011), Andre (2009) and Rockwell (2009).

Rockwell (2009) points out how the quotidian apprenticeship operates in the knowledge, described as: pedagogical knowledge and educational knowledge. The first occurs in a prescriptive training and the second comes from the description of practices. It's delimited so, the field of research: the formation of teachers and in it the investigated element: the quotidian apprenticeship as interpretive category.

Our first hypothesis is on the investigative educational processes, which are thought to interact with the subject, is sought in the facts how to comprehend the determinants that define it. The facts can be interpreted as results of objectives achieved or not, but the movement is caused by the fact that structure the quotidian apprenticeship, allowing to understand why the educational objectives are not fully met.

To achieve this level of response is necessary to analyze the relationships established in the quotidian apprenticeship with answer of conflict between the elements of formation and educational professionalization. The quotidian apprenticeship has narratives and conflicts that are far beyond the curriculum and study plans of academic training, involves the routine of school institutions, but do not represent all the quotidian apprenticeship relations.

For this reason, there need to structure a theoretical critique of the interactions of subjects in the quotidian apprenticeship and how to organize the new educational determinations. In this study we will adopt critical theory based on Souza Santos (2011, p.23). "(...) For critical theory following definitions shall apply that the theory does not reduce the" reality "of what exists. This reality is considered by the critical theory as a field of possibilities and the task of the theory consists precisely in defining and assessing the nature and range of the alternatives to what is empirically given."

The relationships within the school, are widely studied, but there are gaps in the studies that expect unveiling. There is an estrangement in the relations, which generates a restlessness as exposed by Souza Santos (2011 p.37). This restlessness is the result of what is known and certain and what creates estrangement and indeterminacy. However, requires knowledge of its existence for there to be overcome or interaction.

Souza Santos (2011) affirms that the cognitive maps changed, networks are compared and so all becomes another direction. Maps are interactional and social, connected, but possible to be analyzed.

The general thesis of the research is that the routines may have been vanguards in another time, might have originated from ruptures, which lost its purpose in a given context. There may have been advances, may have been resistances, but today are ritualistic repetitions. At priori they are not right or wrong, may have lost the reason for its effect. Analyze and evaluate the routines is taken as vanguards interpret them as absorbed in the quotidian, submitted or processed into structures or schemas of overcoming. The routines are not separate from the quotidian are manifestations simultaneous, there are times when the quotidian breaks the routine and requires a

new representation. A new mutation, a new routine. The relations in and about the quotidian contains routines, disruption, permanencies, in time, space, in motion. What occur are different intensities for different reasons, which in turn generate different responses. Capturing this movement and these intensities, from the content of the actions / relationships allows us to interpret what, why and how the interactions happen in school quotidian.

2. Design

When we elect a category for interpretation of a fact or thesis directly related to the characters or subjects this environment, we are sure that this is a concept determined by the gaze of the researcher and that part of the analysis and choice, which can appear to be arbitrary, but seeks to comprehend and mediate, to finally understand.

Studies on the quotidian apprenticeship are set out by three trends: first, that retakes Gramsci, and the question of hegemony of labor and interpersonal relations, in which the understanding of the quotidian is necessary to understand the complexity of the individual removing the whole idea of totality and marking the question of individuality and participation in curriculum studies.

The second, related to Robert Stake, which indicates the studies of the case of the origin based on naturalistic observation of what happens on in school, born from this study the trend of a not generalizing front of the multiplicity and complexity of the school environment.

In a third moment, supported in studies of Stenhouse and in Brazil Selma Garrido Pimenta, we have the inclusion of reflective teacher or researcher in his own practice, which begins to rethink and understand this dynamic and reflect on their own practice incorporating the inferences derived from the understanding of the culture of the school, becoming a fundamental "weapon" for a contextualized apprenticeship socially validated. (PIMENTA, 2002, p.21).

When we launch our eyes to school and pay attention to their particularities, not only as institutionalized environment but a space of human interactions and relationships, we face a complex issue, already studied under the aegis of topics such as indiscipline, reflexivity, and inclusion and many others. However, there is a latent category that urgently needs to be interpreted, as enunciated here as quotidian apprenticeship.

2.1. Quotidian or routine

Before stating the quotidian as a category of interpretation is necessary to distinguish or minimize the sensitive line that differs quotidian and routine. As signaled by André (2009), research into the quotidian apprenticeship is relevant to understand and to structure a new category of interpretation, but should not be confused with research done in the quotidian, but set to a research about the quotidian.

Research about the quotidian understand it as a space of social relations as told by André "(...) the study of the school practice cannot be restricted to a mere picture of what goes on in your quotidian, but must involve a process of reconstruction of this practice, unveiling its multiple dimensions, remaking his movement, pointing out its contradictions, regaining the life force that it is present "(2009 p.43).

For Rockwell (2005) the quotidian term is designed to on the analysis of relationships that result in school practices historically institutionalized; include regional level variations, the official curriculum and interpretations of teachers and students about the education.

The routine is a sequence of actions, reflective or not, seeking an outcome in an automated manner by the individual or by a group of individuals. It is linked to the making and egalitarian result. Routines are uncritical and non-interpretive of the

movements, are prescriptive and often fit the criterion of right and wrong. The routines are generated by historical determinations that need to be constantly evaluated to understand its pertinence and unhistorical interpretation of facts or anachronistic.

The quotidian apprenticeship is the ample space of representations that are able to implement the systems and routines of learning differently for each subject in the school interaction.

3. Objectives

The goal of the research about the quotidian is uncover the relationships that constitute the processes of apprenticeship and teaching involving real and historical subjects, as their routines and his interpretations in quotidian relationships and his transformations in quotidian apprenticeship.

4. Methods

André (2003) states that for an investigation into the school quotidian it's four dimensions should primarily be seen, but points out that they are not the only ones. The first relates subjectivity / personal history of each subject, their role and social position in the school environment, and the second the institutional / organizational, as the school is organized, as it is seen in society, as it represent itself for the front political organization and management education, and the third the instructional / relational, how does the relationship between teacher-student-knowledge, including educational materials and the evaluation form, the fourth dimension is the sociopolitical in order totalizing see the school in its social, political and cultural and how they relate to other dimensions.

In the research reported here, the first phase has investigated the subjects' perception of what comes to be routine, what understand as school quotidian, and what are the mechanisms of appropriation, resistance and accommodation of the subject, in the case teachers. We interviewed nineteen teachers.

The second phase of research relates to other dimensions: institutional / organizational, instructional / relational and sociopolitical. To this end, besides the interviews, were made remarks that were transcribed in the form of chronicles. The chronicle was the chosen genre since it is an quotidian situation observed or experienced, and may terminate in an unusual way. As the observation occurs in a receptive and not prescriptive way, the gaze of the researcher becomes the chronicler's, capturing the fact, like when a photo is registered, turns into motion by transcribing it to paper.

The choice of the subjects is established by participating directly in the history of the educational researcher, professor of public education and teacher trainer. There experimental proximity, about culture and is perceived as integral part allowing for a kind of ethnographic approach

5. Discussion

The first phase presented results about routine as understood by the subjects in the action to require, do, perform, oppress, something standardized and about quotidian as action of living, engaging, educating and being present, the unusual. But what distinguishes the margin proved to be close and conflicted, the process word, in both speeches, or routine or quotidian was contemplated, and sometimes the quotidian becomes an routine, when it was absorbed.

In the second phase, the record was held by ethnographic research in two classes of students between 11 and 13 years, totaling 30 students of public schools, children of industrial workers. The type of ethnographic research, based on case study is justified by the need to comprehend a particular case, prioritizing the context and

complexity that generates relations for the interpretation linked to cultural intersections in quotidian school life.

The Chronicles allowed to interpret the relationship between the routine and the quotidian, the records are not neutral. Categories were revealed: the real time in the relationship between teacher and students to promote apprenticeship, use the time for personal relationships between teachers and students, students and students, and time for diversification in activities not directly related to the content of the discipline

6. Conclusion

The first results showed that apprenticeship by standardized routine measured by school evaluations represents 40% of class time, which apparently is the only mediator for teachers on the progress of students. The remaining time focuses on different situations related to quotidian and unusual or uncommon situations, without prescribed or planned mediation made by teachers and who apparently do not add measurable value to the students, but they take 60% of class time.

This indicates the need to rethink the quotidian, transpose it into new routines for new thinking about the relationships and interactions within the school environment, involving all knowledge, whether philosophical, anthropological, educational, psychological, inclusive, educational policy, but applicable knowledge and validated by human interaction. For this, analyzes should validate a new knowledge. The knowledge about the school's life quotidian, representing it as a valuator of the apprenticeships, which in unusual origin cannot be measured, but make up the knowledge shared by the subjects at school.

References

- André, Marli. (2003) O cotidiano escolar, um campo de estudo. In. PLACCO, Vera Nigro de Souza (Orgs.). *O coordenador pedagógico e o cotidiano da escola*. São Paulo/Brasil: Loyola,.
- André, Marli. (2009). *Etnografia da Prática Escolar*. São Paulo/Brasil: Papyrus
- Martins, Pura Lúcia Oliver (1989). *Didática Teórica/Didática Prática: para além do confronto*. São Paulo/Brasil: Edições Loyola.
- Martins, Pura Lúcia Oliver (2008). *Didática*. Curitiba/Brasil: IBPEX
- Penin, Sonia (2011). *Cotidiano e escola: a obra em construção*. São Paulo/Brasil: Cortez
- Pimenta, Garrido. GHEDIN, Evandro (org.) (2002). *Professor Reflexivo no Brasil*. São Paulo/Brasil: Cortez.
- Rockwell, Elsie (2005). *La Escuela Cotidiana*. México: Paidós
- Rockwell, Elsie (2009). *La experiencia etnográfica: historia y cultura en los procesos educativos*. Buenos Aires: Paidós
- Santos, Boaventura de Sousa (2011). *A Crítica da Razão Indolente: contra o desperdício da experiência*. São Paulo/Brasil: Cortez
- Stake, R. E. (1983) *Pesquisa qualitativa/naturalista: problemas epistemológicos*. Educação e Seleção, 7: 19-27, jan/jun. São Paulo/Brasil Fundação Carlos Chagas.
- Stake, R. E. (2011) *Pesquisa qualitativa: estudando como as coisas funcionam*. Porto Alegre/Brasil: Penso

LEARNING ABOUT MATERIALS, CHEMICAL REACTIONS AND SOUND THROUGH INQUIRY

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Abstract

In Portugal, the curriculum guidelines for teaching science propose the use of inquiry based learning as one of the strategies for promoting scientific literacy. Inquiry is a multifaceted activity that includes posing questions, searching and synthesizing information, planning and conducting procedures, using different tools to collect data, analyzing and communicating results. Taking it into account, three Physics and Chemistry teachers used inquiry with their pupils. This presentation aims at describing the type of learning that took place when pupils were involved with inquiry and showing its consistency with the proposals of national curricular guidelines. The research reported is qualitative, adopting an interpretative orientation. Participants were 161 pupils who attend the 7th and 8th grade. The inquiry activities were related with the subjects Materials, Chemical Reactions and Sound. The data sources used in this study were the interactions among pupils during the lessons, groups' interviews, at the end of the study, and written documents produced by the participants. Consistent with a naturalistic research paradigm, the data analysis consisted of repeatedly examining the data to uncover salient patterns, singularities, and themes associated with research questions. This study shows that pupils mobilize competences while they are accomplishing inquiry activities. The use of these activities enables pupils to question their ideas and conceptions, explore new ways of explaining what happens, communicate and support their findings, extend their own ideas and reflect upon the work done. Therefore, inquiry activities pose a challenge to pupils since they have to be active learners and take responsibility for their own learning process. They find it difficult to assume this new role. However, over the activities, pupils were able to overcome those initial difficulties. In fact, pupils learn while they overcame those obstacles since it enables the development of knowledge competences, reasoning, communication and attitudes as the National Curriculum recommends. Their own difficulties become a challenge which promotes pupils' learning. It is important to communicate these findings to other teachers because they can plan their lessons with them in mind.

Keywords: *Scientific literacy, science education, inquiry, pupils' strategies*

1. Introduction

In Portugal, the curriculum guidelines for teaching science propose the use of inquiry as one of the strategies for promoting scientific literacy (ME, 2001). Inquiry activities promote the search for answers and asking questions which are two important features in science lessons (Windschitl & Buttemer 2000), since pupils engage in scientific situations by drawing connections to the real world and to pupils' everyday life (Wellington, 2000). Therefore, inquiry is a multifaceted activity in which pupils are active learners by posing questions, searching and synthesizing information, planning and conducting procedures, using different tools to collect data, analyzing and communicating findings (NRC, 2000). Abd-El-khalick et al (2004) distinguish two aspects of inquiry, namely "inquiry as means" and "inquiry as ends" (p. 398). "Inquiry as means" may be a strategy used in the classroom with the purpose of helping pupils to

develop understandings of science content. The other feature, “Inquiry as ends”, refers to inquiry as an outcome, since pupils learn to do inquiry and, at the same time, they develop understandings about the nature of science and the development of scientific knowledge. So, inquiry activities may therefore enable pupils to learn science, to learn about science and to learn to do science in the classroom (NRC, 2000).

Taking this into account, the research reported in this study aims at describing pupils’ strategies when they are involved in inquiry activities related to *Materials*, *Chemistry Reactions* and *Sound*.

2. Methodology

The research reported in this study is qualitative, adopting an interpretative orientation (Erickson, 1986). This study was conducted by three Physics and Chemistry teachers who used inquiry activities on the subjects *Materials*, *Chemistry Reactions* and *Sound*. Participants were 161 pupils who attended 7th and 8th grades in two middle schools. Their ages varied between 12 (27 pupils) and 19 (1 pupil) and consisted of 83 females and 78 males. Multiple data sources were used, including audio recordings of pupils’ group discussions, written documents produced by the participants and group interviews at the end of the study.

The data analysis was inductive and ongoing (Bodgan & Biklen, 1994). Consistent with a naturalistic research paradigm, the data analysis consisted of repeatedly examining the data to uncover salient patterns, singularities, and themes associated with research questions. By using an inductive analysis concerning strategies that pupils used when carrying out inquiry activities, the following categories emerged from the data: seeking information, selecting and organizing information, representing knowledge, sharing information collaboratively, planning and doing the procedure and organizing data.

3. Results

All inquiry activities begin with a text, a video or a comic strip where is present a problem. To find an answer to the problem, pupils use several strategies, namely seeking information, selecting and organizing information, representing knowledge, sharing information collaboratively, planning and doing the procedure and organizing data.

3.1. Pupils’ strategies used during inquiry activities

Pupils seek information on their textbook to find an answer to the problem:

Leo – It’s on the previous page. Where is it? It’s here. The solute is coffee...

Anne – And the solvent is water.

(...) [They keep searching and start reading what is written in the textbook]

Leo – Wait, that’s it! Coffee is the solute because it dissolves in water.

Anne – And water is the solvent because it dissolves the coffee.

(Audio recording in an inquiry lesson about concentration of a solution)

They select and organize information. Then, they represent knowledge, by writing the information in their own words. Anne, Mary and Daisy wrote: “Heartburn is caused by the increase of hydrochloric acid in the stomach. This happens as a result of diseases, nervous tension or too much food. To tackle this problem one should take medication containing bases such as aluminum hydroxide or magnesium hydroxide.” (Inquiry lesson related to acid-base reactions).

Pupils have to plan experiments in most of inquiry activities. For example, in an inquiry activity related to density, pupils have to identify the metal of which are made

two cylinders. Each group indicates the material and the procedure. Addy, Amber and Eddy wrote:

“Material: scale, beaker, water, two cylinders.

Procedure:

Measure the mass of each object.

Add water to a beaker and measure its volume.

Put the object in water and measure the volume of the whole.

Calculate the volume of the object.

Calculate the object density dividing its mass by volume”.

Pupils organize data by charts. In the same activity all groups draw a chart very similar to the following one:

Object	Mass/ g	Initial volume/ cm ³	Final volume/ cm ³	Object Volume/ cm ³	Object density/ (g/cm ³)
Objeto 1	103	30	39	39 - 30 = 9	103 : 9 = 11,4 → chumbo lead
Objeto 2	99,7	30	42	42 - 30 = 12	99,7 : 12 = 8,3 → cobre copper

In all activities it is proposed a new situation on which pupils have to apply what they learned. So, in an inquiry activity about acid-base reactions, it is presented the following situation: A farmer has a land with high pH and intends to grow potatoes that prefer acidic soils. What should he do?

David, Charles and Andrew wrote: *The farmer should use acidic fertilizers, like ammonium nitrate or ammonium sulfate, to get good crops.*

At the end of the activity, all pupils present their conclusions and comments and, at the same time, they are confronted with other hypotheses or different strategies.

At the group interviews, pupils said the importance of sharing information collaboratively, namely on the class discussion:

Teacher – Do you think that class discussion is important?

Everyone- It helped!

Lauren – Yes, it helped.

Sarah – It helped on some questions which our group didn't know the answer. And, with the class discussion, we listened to classmates and teacher who helped us to understand.

In these activities, pupils reflect on the work done, which enables them to understand what and how they learned. Some pupils wrote:

Alec, Barbara and David – we do the experiment and it helps to learn more than just listen to the teacher's explanations.

Anne, Sophie and Elaine – These strategies help us learn about chemical reactions through searching, writing and presenting the work done.

Inquiry activities pose a challenge to pupils since they have to be active learners and take responsibility for their own learning process. They find it difficult to assume this new role. However, over the activities, pupils were able to overcome those initial difficulties. This is perceptible in group interviews:

Tad - On the third or fourth activities, we did okay, because we knew what we should do.

Anne - (The difficulties) vanished.

Richard - Because we have learned more things, so we had less doubts and did better the work.

Lisa – We became more expert.

The written documents support these findings, over the course of inquiry activities, the difficulties highlighted by the students – namely, search for information, select and organize information, represent knowledge, share information collaboratively, plan and do the procedure and organize data – decrease. In fact, they learned while they overcame those initial difficulties.

4. Conclusions

The use of these activities enables pupils to question their ideas and conceptions, explore new ways of explaining what happens, communicate and support their findings, extend their own ideas and reflect upon the work done. Pupils use several strategies to accomplish the inquiry activities proposed, namely seeking information, selecting and organizing information, representing knowledge, sharing information collaboratively, planning and doing the procedure and organizing data. In fact, pupils are active learners and this new role is a challenge to them. However, they overcome their initial difficulties and, at the same time, this is an opportunity for learning since the use of these strategies involves the mobilization of knowledge competences, reasoning, communication and attitudes which promotes the development of their scientific literacy as the National Curriculum recommends.

References

- Abd-El-Khalick, F., BouJaoude, S., Duschl, R., Lederman, N. G., Mamlok-Naaman, R., Hofstein, A., Niaz, M., Treagust, D. & Tuan, H. (2004). Inquiry in science education: International perspectives. *Science Education*, 88(3), 397–419.
- Bogdan, R., & Biklen, S. (1994). *Investigação qualitativa em educação: uma introdução à teoria e aos métodos*. Porto: Porto Editora.
- Erickson, F. (1986). Qualitative methods in research on teaching. In M. C. Wittroch (Ed.), *Handbook of research on teaching*. New York, NY: Macmillan.
- ME (Ministério da Educação) (2001). *Currículo Nacional de Educação Básica*. Lisboa: DGIDC
- NRC (National Research Council) (2000). *Inquiry and the national science education standards: A guide for teaching and learning*. Washington D.C.: National Academic Press.
- Wellington, J. (2000). Investigations in science. In J. Wellington (Ed.), *Teaching and learning secondary science: Contemporary issues and practical approaches* (pp. 156-165). London & New York: Routledge.
- Windschitl, M., & Buttemer, H. (2000). What Should the Inquiry Experience Be for the Learner? *The American Biology Teacher* 62(5), 346-350.

AN EVALUATION OF MENTORING PROGRAMME AT NORTH WEST UNIVERSITY, MAFIKENG CAMPUS

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Abstract

Background: Mentoring programmes are one of the most widely used strategies in providing assistance to less-experienced persons in various organisations including institutions of Higher learning. In the teaching and learning contexts especially at institutions of Higher learning, it appears that mentors can positively influence students' behaviours, school attendance, and sense of competence in school. However, the impact of such programmes may not be determined if evaluation is not conducted. While bearing in mind the various types of mentoring programmes, the current study evaluates a mentoring programme that was established as a way of supporting first year extended programme students at North West University, Mafikeng campus, South Africa, to ease their transition into University. *Objectives:* The purpose of the study was to i) explore the degree of importance of academic mentoring programme, ii) explore the degree of importance of mentoring and its impact on academic growth, and iii) investigate the challenges faced by the mentees and mentors in the programme. *Data and Methods:* The study used both quantitative and qualitative approaches in order to have a comprehensive understanding of the issues involved. Data was collected from 13 mentors, 200 mentees and 2 members of staff from 2 participating Faculties. All the mentors and mentees were asked to complete a questionnaire. The data obtained from the study was evaluated using SPSS for Windows 11.0. In particular, descriptive statistics (frequencies and percentages) were used to analyse the data. The qualitative data was analysed first by transcribing the recorded interviews, followed by an analytical reading of the transcribed data to look for recurring words, phrases, topics and emerging themes in the data from the interviews. Categories and themes were identified and the results of the qualitative and quantitative data were merged. *Results:* The results indicate that most of the people interviewed feel that mentorship programme is beneficial. Mentors reported transferring skills and identified effects beyond mentoring. The study affords insights into the training requirements and learning experience of mentors and shows that mentor training is indispensable in providing tools and techniques and an opportunity to reflect on practice, and in facilitating the feedback necessary for continuous improvement in the mentoring capacity. Areas requiring improvements were suggested.

Keywords: Mentoring, mentors, mentees, university teaching-learning

1. Introduction

A review of literature indicates that there has been a surge of formal mentoring programmes among universities to consider students retention (Salinitri, 2005). Studies have used graduation as an indicator for retention (Bean & Eaton, 2002). Others (Wild & Ebbers, 2002) have identified student completion rates as a fundamental measurement of an institution's success in meeting student needs. As argued by Salinitri (2005), research into the factors that impact on persistence (programme completion) is crucial for institutions to develop appropriate policies and practices to enhance retention. To add to the research on programme completion, we have focused this study on evaluating the degree of the importance of academic mentoring programme, exploring the degree of the importance mentoring and its impact on

academic growth, and investigating the challenges faced by the mentees and the mentors.

As students enter university, they find factors that adversely affect their transition from high school to university, for example, new found independence, homesickness, time management, finances, or different teaching styles. Further, because of the demands of a knowledge-based society, students from various cultures, socioeconomic backgrounds, different learning styles, or with low entrance grades are entering university. As a result, several factors affect student success: inability to meet university academic standards, inability to adapt to a new social and academic environment, changes in personal goals and aspirations, lack of motivation and clearly defined goals, priority of other commitments such as work or family, financial difficulty, or incongruence between an institution's orientation and approach and that desired by an individual (Lang & Ford, 1992).

These factors translate into a need for increased academic and personal counselling programs to improve student retention, particularly for low-achieving students, defined, for the purpose of this study, as students who are afforded an extra year to complete the mainstream programmes of the university. i.e students who are admitted with less than programme requirements.

Because Mafikeng Campus universities accept these lower achieving students to give them opportunity, and to increase their own government funding, they need to make students' transition from high school to university fluid by providing them with the skills, knowledge, and confidence necessary to successfully fulfil their degree requirements. These students are a particular challenge because they may have poor study habits, study alone, often do not seek help, or know how to seek help. In other words, they often find themselves dropping out in the first year because they were unable to seek and acquire tools for success. Nagda, Gregerman, Jonides, Von Hippel and Lerner (1998) found that most students, including academically achieving students, enter university unprepared for the required level of academic retention, particularly for low achieving students, defined for the purpose of this study as students. For this study, we evaluated a peer mentoring programme by examining the degree of the importance of academic mentoring programme, exploring the degree of the importance mentoring and its impact on academic growth, and investigating the challenges faced by the mentees and the mentors. We established peer mentoring programme to enhance students first-year experience and to retain them through a mutually beneficial relationship between mentor and mentee.

The mentoring programme at Mafikeng Campus started in 2011. It is a pilot project focusing on two of the five Faculties (Faculty of Commerce and Administration and Faculty of Agriculture Science and Technology (FAST). The mentors were senior students from different Faculties. Some are in the final year of undergraduate and others are postgraduate students.

The programme was introduced as an addition to the existing retention programmes offered to the students through the Academic Development Centre (ADC), North West University. Other retention programmes include supplemental instruction [SI], writing centre, and reading laboratory. The writing Centre provides an environment where students are introduced to academic and scientific writing whereas the reading laboratory assists students with reading for speed and comprehension. The peer mentoring was initiated as a transition programme to address academic, personal and social experiences.

Bearing in mind the channel through which the extended programme students gain access to the North West University, Mafikeng Campus, there was a felt need that for them to psychologically adjust to the new environment and gain academic persistence through to graduation, they need intervention programmes such as the mentoring programme.

The peer mentoring was initiated as a transition programme to achieve the following: address academic, personal and social experiences, encompass a sense of

listening, identify problems, provide moral and emotional support, provide encouragement, establish supportive relationships and orientate the first year students through the first year and if possible through the entire academic journey.

2. Objectives

The purpose of the study was to i) explore the degree of importance of academic mentoring programme, ii) explore the degree of importance of mentoring and its impact on academic growth, and iii) investigate the challenges faced by the mentees and mentors in the programme.

3. Methods Heading

The study used both quantitative and qualitative approaches in order to have a comprehensive understanding of the issues involved. Data was collected from 13 mentors, 200 mentees and 2 members of staff from 2 participating Faculties. All the mentors and mentees were asked to complete a questionnaire. The quantitative data obtained from the study was analysed using SPSS for Windows 21.0. In particular, descriptive statistics (frequencies and percentages) were used to analyse the data. The qualitative data was analysed first by transcribing the recorded interviews, followed by an analytical reading of the transcribed data to look for recurring words, phrases, topics and emerging themes in the data from the interviews. Categories and themes were identified and the results of the qualitative and quantitative data were merged. Two focus group discussions were conducted with twelve mentors. Each focus group comprised of six mentors.

4. Results

The majority of respondents were in the 17-20 year age group. The gender distribution of the respondents was in favor of males in that 51% were males and 49% were females. All the respondents interviewed were Black Africans.

Table 1 shows the percentage of mentees' views in 2012 on student-mentor quality attributes. The percentages reflected in Table 1 are rounded off values. The first part of the questionnaire was aimed at getting views regarding the overall perspective of the programme. The majority of the respondents agreed that the mentorship programme was acceptable and that the objectives were clear, justifiable, supportive, realistic and beneficial to both mentors and mentees.

Table 1. View of the respondents about the objectives of the programme (%)

	Agree	Nuetral	Disagree	
Goals and objectives Clear	78	12	10	100
Felt supported	73	19	8	100
Easy to perform mentor-mentee roles	64	28	8	100
Requirements Right	66	25	9	100
Time commitment Right	65	22	13	100
Mentorship will benefit studies	73	15	12	100
Expected outcomes realistic.	66	22	12	100
The programme worked for me.	61	22	17	100

One of the guidelines given to mentors during the training was that since the mentees were new to the university environment, mentors should initiative meeting the mentees, especially during the first three months. It is interesting to note that meeting regularly had the lowest percentage. Only 46% of the respondents indicated that they met regularly and 30% of the respondents disagreed that they met regularly.

Table 2. Views of Mentees on Mentor-Mentee Relationship (%)

	Agree	Nuetral	Disagree	
mentoring partner and I met my needs.	58	30	12	100
Met regularly.	46	24	30	100
used the time effectively	59	24	17	100
confident about what to do when we started.	65	21	14	100
My mentor/mentee understood what I was saying	70	20	10	100
experienced growth during the process.	63	27	10	100
meaningful conversations/discussions	63	24	13	100
offered guidance and knowledge.	64	22	14	100
relationship will continue	52	28	20	100

Another aspect that was collected in the study is the views of the participants in terms of the impact of the mentorship programme. The mentors were enthusiastic and openly enjoying their role. The mentors felt so rewarded to see the mentees' appreciation of what they could achieve as they mentored them. Appreciation, positive feedback, respect and trust were among the topmost qualities that the mentors underscored as being crucial in driving the mentor-mentee relationship. However all the mentors indicated that the major drawback was on lack of commitment among the mentees who in most cases do not show up for subsequent meetings. During the focus group discussions two of the mentors said that some of the mentees were expecting that the mentors will assist them with bursaries and help them with their class work as is the case with SI facilitators.

Table 3. Views of mentees on the impact of the mentoring programme (%)

	Agree	Nuetral	Disagree	
Improved my understanding	70	22	8	100
Encouraged responsibility	65	24	11	100
Helped me to manage study time	62	28	10	100
Convinced advantages of group study	67	27	6	100
Improved ability to work effectively	53	34	13	100
Increased my confidence	66	20	14	100
Made me more enthusiastic	76	8	16	100
Increased my motivation	70	30	0	100
Helped me to form friendships	69	19	12	100

5. Discussion and Conclusion

One finding of the study is irregular attendance to the scheduled meetings. This agrees with findings from other countries (Nagda, Gregerman, Jonides, Von Hippel and Lerner (1997). There are a number of factors that may contribute to the irregular attendance to the scheduled meetings. First from experience most students do not like to participate in activities that are not credit bearing. Second it may be due to ignorance that the mentee do not know or are not willing to accept that they need help. Third being in the extended programme the mentees feel that they are labelled and are considered as second class students.

The results indicate that most of the people interviewed feel that mentorship programme is beneficial. Mentors reported transferring skills and identified effects beyond mentoring. The study affords insights into the training requirements and learning experience of mentors and shows that mentor training is indispensable in providing tools and techniques and an opportunity to reflect on practice, and in facilitating the feedback necessary for continuous improvement in the mentoring capacity. Areas requiring improvements were suggested. One such improvement require campus management to motivate and encourage first year students to participate in the mentoring programme.

This evaluation was merely a small contribution to a very large body of knowledge about mentoring programmes in higher institutions of learning in South

Africa. It provided a basis which tertiary institutions in the country can use to evaluate their own mentoring programmes as a way of highlighting factors that may hinder the success of their programmes. The list of evaluative questions proposed is by no means exhaustive and it is hoped that future evaluation research will continue to build the wall that this study has begun.

References

- Bean, J., & Eaton, S. (2002). The psychology underlying successful retention practices. *Journal of College Student Retention*, 3(1): 73-89.
- Lang, M., & Ford, C. (1992). *Strategies for retaining minority students in higher education*. Springfield, IL: Charles C. Thomas
- Nagda, B.A., Gregerman, S.R., Jonides, J., Von Hippel, W. & Lerner, J.S. (1998). Undergraduate students-faculty research partnerships affect students retention. *The Review of Higher Education*, 22(1):55-72.
- Salinitri, G. (2005). The effects of formal mentoring on retention rates for first-year, low achieving students. *Canadian Journal of Education*, 28(4): 853-873.
- Wild, L., & Ebbers, L. (2002). Rethinking student retention in community colleges. Community College. *Journal of Research and Practice*, 26(6): 503-519.

AUTHORS AND EDITORS AS ONE COMMUNITY – A PUBLICATION PROJECT

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Abstract

A recently completed work of collecting grassroots educational ideas and experiences will be described, in which contributors and editors were involved as one community, exploiting a variety of ict solutions. At the same time, two members of the editorial board were engaged in a very demanding, special role as mediators between educational contexts and the academic world.

The plan, as conceived and carried out by a team of teachers and pedagogy scholars at the Bologna university, aimed at providing a sample as varied as possible of the liveliness that characterizes the world of education and training, suitably framed to allow weighting and evaluation of reports and thus rendering the content usable by the academic community.

See <http://www.dropsintheocean.net> for more detailed information's.

The end result, as 'handbook of research', has recently gone into print and delivered by an international publisher.

Keywords: *Grassroots innovation, pedagogy, research directions*

1. Introduction

Adults' response to the education as a duty is not adequate, both because they do not always act conscientiously and because of the complexity of relationships in today's social environment, which they find hard to deal with.

Were the educational duty understood by all, every local public entity would strive to find the needed ways, places and availability to get positively involved, and education could not be conceived anymore as something confined within school walls.

The importance of educational aspects would be recognized, even in all instances where formative goals come foremost, as in high school, university and beyond, in lifelong learning and in teachers' training. People would realize the importance of being able to listen to the people in front of us, thus enriching these relationships with motivations and opening new spaces

In short, an open and advanced educating community, would not just watch helplessly the failure of young people who are unable to develop their potential¹.

Moving out of the present situation must start from within. School operators' aim must be to further learners' continuous desire for knowledge, a desire which is inborn in all humans. Teachers should listen to, and strive to use more ways to communicate the pleasure of learning.

¹A situation sadly evidenced by reports on dropping out data. The UNESCO Data Center at <http://stats.uis.unesco.org> can be used to get detailed reports on this point.

Fortunately, signals from public school, university and other training institutions show that many teachers want to listen to young people and are ready to support their potentialities, as well as to make teaching stimulating by improving methods and tools. Professors, teachers, trainers and education scientists who share these principles regularly meet online to show how classical pedagogical principles can be used to address the complexity of today's world, with or without the support of digital technologies, and to discuss new strategies or to confirm the validity of known didactic practices and pedagogic theories²

Unfortunately, even though these experiences, are public and often very effective, they remain unknown beyond the restricted group of direct participants and they are often short-lived, because of their promoters' limited resources.

They are drops in the ocean, which apparently cannot modify the entire educational system. But this can be changed, if we are able to understand their spirit and their promoters' value. Then every drop will leave a sign, in whatever ocean it will fall.

2. Our idea taking shape

Sure it is important to spread information about this movement, because other teachers can be inspired and encouraged by it, and because these experiences can give a clear signal of emergency to social bodies and local public institutions, whose response is so far insufficient, but which are essential in building a motivating and fertile environment.

The opportunity to spread this innovating movement has been caught when publisher IGI Global asked for a project for a research handbook or an encyclopaedia. Our idea was proposed to the Italian network www.lascuolachefunziona.it (LSCF)³. LSCF is inspired by an open cooperation between university research and educational practice. We think that a constant and mutual exchange is essential for building an educating society, an educational environment which is adequate to our society.

In Summer 2010, the LSCF community was attracted by the simple and exciting idea to collectively broadcast many didactic intuitions and educational success stories born of public school operators' dedication and passion, via an international publication.

This surprising summer enthusiasm probably arose from the need to react against governance and mass media pressure, which impoverishes and brings discredit on the public school, even though teachers have been making new didactic experiments in the field. In a few weeks, more than 50 participants' contributions were collected and translated in English, with effective abstracts.

Thanks to that material, we designed the first project idea and presented it to the publishing house. In a few weeks, the proposal was accepted, but IGI-Global asked us to extend the project to the rest of the world.

In the following months, objectives were defined according to our goals, both in LSCF network discussions and thanks to Luigi Guerra, Dean of the Faculty of Education Sciences in Bologna, and Elena Pacetti, Education Sciences researcher.

We thus managed to explicit the more wide-ranging implications that were already present in the starting idea.

Our ambition was both to collect examples of didactic practices, but also to review them critically and rationally. Besides, the long range diffusion was refocused pedagogy research, which imposed a certain rigorousness and homogeneity to the structure of these reports of didactic experiences.

²e.g., see the collection of educational networks at <http://www.educationalnetworking.com/List-of-Networks>, by Tangient LLC.

³LSCF was created and is capably lead by Gianni Marconato, together with about ten collaborators, where teachers and pedagogy researchers had been developing a project about didactic improvement in public school for two years.

In that phase, we conceived a long term idea, in which the IGI-Global publication was to be a first step: we named it 'Gocce nel Mare' or 'Drops in the Ocean',. Further information at <http://dropsintheocean.net/> or mailing to dropsintheocean.info.edu@gmail.com

Meanwhile we decided to give the royalties for the book to LSCF social network, in the hope that they would enable us to make more projects and didactic experiments.

Finally, Luigi Guerra e Elena Pacetti joined us in the Editorial Board, where they are in charge of the comparative analysis of selected experiences.

3. Publication project

The purpose of our work was

1. Giving appropriate emphasis to the successful practices devised by teachers or other realities of local civil society, along with pedagogical lines emerging from the activities that had been described.

2. Giving authors the opportunity to indicate research directions to those people working in academic.

3. Presenting results of teaching experiments suitably framed so that scholars in pedagogy and social sciences can easily determine all the valuable aspects. That is not a mere gathering of educational experiences, but a structured collection of narratives, with the addition of five descriptive chapters prepared by the editorial board, as a guide for the reader through the volumes.

Setting up the call for contributions, in which we explained our goals and asked for interesting experiences, was our first deadline. It was prepared in two languages, Italian and English, later also in French and Lithuanian, and diffused through Italian and international mailing lists and social networks. When we happened to participate in a congress, we used to speak about our project.

During the following period, in which we collected and evaluated contributions, we realized that for many teachers, English was an insurmountable obstacle. In order to overcome it, a volunteer translator's team was set up. We thus managed to satisfy all the requests (over thirty) and all the collected experiences were ready to be reviewed by international experts.

4. Writing up chapters

Compared to writing a narrative, preparation of a scholarly article requires a much greater commitment, which may discourage those who never went through this experience.

Work of the editorial board has therefore become essential at this stage, in which we did our utmost to provide all the assistance that writers needed.

Each author was personally assisted, in a variety of ways: email, chatting, skype contacts and phone calls, mostly. A personal collaborative web area, through the wikispaces facility, was made available to authors who needed major help. So, thanks to a team of volunteers, coordinated through the LSCF community, the editors were able to provide free assistance to about some thirty Italian authors during the whole the summer of 2011, directing their efforts into fitting manuscripts to the chapter template and translating texts from italian into english.

The LSCF web community also arranged a monthly web audio conference, in which authors and the editors could exchange ideas.

This support was crucial for our target: that the collected material could be comparable, even if it's product of very different conditions, through homogeneous descriptions and analysis.

Finally, one further feature worth to be noted. Our template had been designed to explore a communication channel allowing teachers to turn scholar's attention to specific research directions.

That effort engaged us in a very demanding, special role as mediators between educational contexts and the academic world.. Results of such endeavour have not yet been analysed; that will keep us busy in the course of the Drops in the Ocean project.

Despite some withdrawals, by November 2011, about hundred full-length manuscripts were submitted, more than half from italian authors.

5. The reviewing process

Before the work submitted were accepted for publication, would have to go through the critical reading of at least two experts in the field.

Therefore, the editorial board took steps to contact more than hundred experts worldwide, respectively competent in the area of each work to be examined, asking their availability to read and analyze the content of at least a couple of manuscripts and to return their response, touching on all aspects of interest for our publication.

Manuscripts, authors' names having been removed, to lower the risk of biased judgment, were then sent to reviewers, together with the evaluation model the editorial board had set up to highlight the criteria by which manuscript contents had go through⁴.

Each response contained an overall judgment on the value of experience told and compliance to the aims of publication, followed by the reviewer's direction about improvements to be made to bring the manuscript to the level required by the editors.

Responses were then forwarded to the authors, hiding the name of the reviewers, to avoid suspicion of biased judgments.

As a rule, every manuscript received at least two detailed comments by experts in the field; afterwards authors set to work to make the adjustments required.

Chapters in their final form arrived during the following months, between february and march, for most. Unfortunately, some manuscripts did not succeed, because they could not be approved by the reviewers or because the authors were not able to meet the reviewers' demands.

In the end, the style of every draft, revised by authors according to experts' suggestions, was edited by Jonathan Bishop (fifth co-editor, recruited for this job), an expert in technology and didactics, and an English native speaker.

6. Final version and thanks

The definitive collection of the work completed, june 14, 2012. After about one year and a half of work of the editorial board, the collection was issue in late 2012, in the form of 'Handbook of Research', under the title: Didactic Strategies and Technologies for Education: Incorporating Advancements⁵.

We want to thank Gianni Marconato and all the LSCF participants who answered the publishers' first call, Prof Giuseppe Milan of the University of Padua and his collaborators, especially Marialuisa Damini, for their support.

Thanks to the translators, who freely offered their help, in particular Claude Almansi e Chiara Trabella and to all the authors and reviewers for their enthusiastic dedication to our project.

⁴Such procedure draws from the so called double blind peer review, that has been used in the academic environment for centuries. Incidentally, we like to note that, in the emerging knowledge society, that will no longer be the only way to assess originality of ideas and value of experiences

⁵The Handbook webpage at <http://www.igi-global.com/book/handbook-research-didactic-strategies-technologies/66392>

References

- Gatt, S., Ojala, M., Soler, M. (2011) Promoting social inclusion counting with everyone: Learning Communities and INCLUD-ED, *International Studies in Sociology of Education* 21 (1), pp. 33-47
- Chickering A.W. & Gamson Z.F, (1987) Seven Principles For Good Practice in Undergraduate Education. Retrieved March 24, 2013: <http://wwwtemp.lonestar.edu/multimedia/SevenPrinciples.pdf>

CONSTRUCTION OF A STUDENT'S PERSONAL LEARNING ENVIRONMENTS IN THE MUSEUM: THE EMPIRICAL STUDY

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Abstract

The research literature (Hein, 1998; Falk, Dierking, 2000; Hooper-Greenhill, 2007; Khaled, 2010) distinguishes dual educational approach to the museum: students are studying in the museum as at "a school" of non - formal education, where the educational activities are adjusted to general syllabuses of schools. Meanwhile, aiming to make the learning process attractive and joyful, museums offer the possibilities of *edutainment*. Although education in museums and the organization of their environments have been subject to analysis, there is a lack of research that would analyse how visitors react to museum environment. The aim of this paper is to answer the following questions: what personal learning environments are identified by various visitors in the same museum; what factors determine the construction of such personal learning environments.

The article presents the essence of the museum potential learning and educational environments and factors behind the formation of students' personal learning environments also the vitality of the constructed theoretical model is analysed. The methods of the empirical research are presented; the findings of the empirical study - interview with the museum educator, teacher and students - are presented and discussed.

Keywords: *Education in museums, educational environment, learning environment.*

1. Introduction

It is evident that the *museum* – is an educational institution implementing teaching by entertaining; here learning is being implemented by applying the method of discovery and theory of constructivism (Hein, 1998).

When disclosing the importance of individual learning in the contemporary museum and when the formation of personal meaning of every learner is particularly important, the context of *personal learning environment* is emphasized. Personal learning environment is the environment individually identified by every person according to his / her learning goals, abilities, needs and experience; in other words, it is a part of information space surrounding a person, which the person recognizes as his / her learning environment and uses it (Jucevičiene, 2010).

Falk, Dierking (2000) states that information and knowledge presented in the museum is directly related to personal and social features of a visitor by trying to reveal multiple perspectives and by allowing visitors to freely create their personal meanings referring to their experience. Here learning refers to the constructivist position by emphasizing that learning is not only what the museum wishes to teach a visitor, but it is more what meaning and sense a visitor attributes to the experience acquired in the museum.

It is evident that meaningful and rich individual experience very much depends on potential learning and educational environments in the museum, on the basis of which he / she is able to form his / her own personal environments.

When revealing the importance of museum potential learning environment*, the following characteristic features are distinguished: a) learning information; b) channels of information reception: how it reaches an individual: through observation/ activity/ by invoking the live senses (vision, smell, hearing, taste, touching); c) and their conditions (education zones, children rooms, etc.).

Educational environment in the museum is considered to consist of educational activities (educational programmes, lectures, festivals, concerts, etc.) created by museum employees and educators who have a particular learning goal, the content that conforms to it as well as educational methods and forms that support its assimilation. In this environment a learner acts; his / her learning is directly influenced by the factors of educational environment through the learning environment, which he / she understands (Savicke, Jucevičienė, 2013).

Learners are able to transform potential museum learning environment which involves the entire environment of the museum, its present objects and subjects into their personal learning environments. This, according to Falk and Dierking (2000), is determined by their personal characteristics. A learner integrates what he / she sees, acts or feels with what he / she already knows, understands and recognizes. Here it is important how a person works with information, perceives objects and ideas, what his / her learning style is, etc. This influences construction of personal learning environment.

Learning always takes place at a certain moment, under certain conditions and always depends on the context. Referring to the ideas of Falk, Dierking (2000) as well as Jucevičienė et al. (2010), it is possible to offer the model of factors for the formation of personal learning environments (PLE). The model reveals personal context which defines all personal characteristics that a person brings to his / her learning process – motivation and expectations, previously acquired knowledge, interests and persuasions, choice and control. These are internal factors which determine what information, means of its formation or dissemination channels a person will choose from educational environments and potential learning environments; so that he / she can construct his / her personal learning environment.

2. Research methodology (Design, Objectives, Methods)

The research of the construction of a student's personal learning environments in the museum is based on the methodological conception of a case study. The aim of the research is to respond to the following research questions: 1) what personal learning environments are identified by various visitors at the same museum? 2) what factors determine the construction of such personal learning environments? A document analysis of the museum educational programme and a semi-structured interview with a museum educator, school teacher and five schoolchildren were completed for this purpose.

Research sample. The research was completed in 2012. The research sample consists of 1 museum – the Lithuanian Art Museum.

During the integrated educational programme of chemistry and art the teacher and students revised acids, salt formulas, made chemical equations, the teacher experimented with acid and alkali (green colour turned into reddish and blue). Then students made chromatographic experiments, found out what primary colours form green, reddish and other secondary colours. After the experiments the students listened to the educator talk about museum objects and analyzed colourful miracles created by professional artists. The educational programme was followed by an acquaintance with works of stained glass from the funds of the Lithuanian Art Museum. Later the students were divided into two groups, where one group worked in the laboratory and made colorful glass (they weighed and mixed some materials which

* Potential learning environment in the museum – is physical and virtual space in the museum, which distinguishes in fixed verbal, non – verbal or virtual information as well as its reception channels, by means of which knowledge can be constructed, new experience acquired.

resulted in drops of colorful glass after heating), while the second group learned about the craft of glass blowing (a glassblower told about and demonstrated how glass is blown). The students not only admired the professional work, but also had an opportunity to make glass vessels themselves and take them home.

Method of data collection. A semi-structured interview with the educator from the Lithuanian Art Museum and the chemistry teacher from a secondary school in Vilnius was aimed at revealing cooperation and communication processes during the organization of the museum educational programme, adjustment of educational objectives and content and choice of educational methods which corresponded the students' ages, needs, interests, etc. The semi-structured interview with five 11th form students was conducted to reveal factors of personal learning environment formation from potential learning and educational environments of the museum. The respondents were asked the following questions: 1) How was the integrated educational programme of chemistry and art constructed? 2) Did the teacher explain the destination and schedule of the trip prior to going? 3) What impression did the museum building have on the students? 4) What did the students feel upon entering the museum? 5) How did the educator meet the students? 6) How was the aim of the educational activity given by the educator and teacher? 7) Is information in museum activities provided using senses? 8) Do students use specially designed methodical - learning tools during educational activities? 9) What practical activities did the students perform at the museum? 10) How did the educator communicate with the teacher and students? 11) Did the educator – teacher awarded the students individual or group prizes for educational activity? 12) Did your group discuss the results achieved in the educational class and at school? 13) Did the educator provide information about an opportunity to visit the museum website and Facebook page? 14) What did the students expect to experience at the museum? Did the activities at the museum meet their expectations?

Method of data analysis. The data processing method of descriptive content analysis was applied to process the information collected during the semi-structured interview. Applying a descriptive content analysis the content of information is given by structuring it according to the research goals, i.e. according to the questions of semi-structured interviewing.

3. Result and Discussion

Analyzing the construction of the integrated educational programme, the educator noticed possibilities to integrate various fields of science and art: *'...it is important to present art not only through the prism of art, but also through school subjects...'*, *'...mathematics, physics, chemistry are close to art...'*. The educator invited a scientist and chemistry teacher who works at a university and secondary school to prepare an integrated programme of chemistry and art: *'...we would meet and I would ask the teacher to think of possible insights of her subject integration...'*. During the construction process of the educational programme *factors of educational context* were accentuated: *'...we prepared the programme together, discussed and adjusted educational goals, content and methods corresponding the age, needs and interests of the students...'*, *'...the curriculum content has been supplemented with new specific knowledge with the help of the educational programme...'*, *'...a creative process took place during the construction of the programme – new specific integrated information has been offered as well as various practical activities...'*. The educator and teacher discussed what students were coming to the museum in order to choose proper content and educational methods: *'...it is important to know whether the students are active or reserved, team workers or individualists...'*, *'...demonstration, information and creation methods were used in the educational programme...'*, *'...the question – answer method was used, the students listened to stories, painted, organized an exhibition, made colourful glass, discussions were present, etc...'*. Analyzing the preparation for the visit to the museum, the students stated: *'...the teacher informed us that we would*

do experiments there...', *'...the teacher said that chemistry would be related to art...'*, *'...this will be new experience for us...'*. The teacher prepared the students for the trip to the museum and discussed the aims, activities and results of the visit.

The question about the impression the museum building had on the students brought out *factors of physical context*: *'...really modern...'*, *'...its form is exceptional, eye-catching...'*. The students also described what they felt upon entering the museum: *'...I liked it inside, it's very spacious, beautiful and positive energy was felt...'*, *'... the space is modern, light, inspiring and motivating...'*, *'...I was impressed by so much glass there...'*, *'...big and spacious cloakroom, no crowds...'*, *'...I was really impressed by the toilet which was neat, exceptional, modern, decorated in nice colours...'*. The teacher also described the physical space of the museum: *'...I felt so different presenting the educational programme at the museum: it is so interesting when you are in a different environment and my students and I have been impressed by this type of learning...'*. The students were especially fascinated by the physical environment of the museum – interior, exhibition design, etc., which encouraged positive emotions and learning motivation.

The analysis of how the museum teacher - educator welcomed the students indicated that: *'...the educator was very kind, helpful, greeted us warmly...'*, *'...she said that we would find out a lot of interesting things...'*, *'...we will find out how to relate chemistry and art...'*, *'...she gave us workbooks with the information of what we would do and learn...'*, *'...I was really intrigued when the educator said that we would be able to experiment and try out many things...'*. When the respondents answered the question about the aim of the educational activity, it became clear that the educator asked the students what they expected from the activity and what they wanted to do: *'...we will search for relations between a science field and an art field...'*, *'...we will find out new things about science and art and how these two fields are similar or different...'*, *'...we will try to do experiments...'*. The respondents also gave their answers about usage of feelings in the educational activity: *'...not only did I watch the exhibits, but I also tried to create colourful glass myself...'*, *'...I had an opportunity to touch, explore and smell hot glass...'*. The educational programme was not limited to the usage of sight or hearing only; in order to form personal learning environments the students were offered to touch, explore and smell which strengthened their learning motivation. Analyzing how the students used the provided methodological – learning tools, they noted: *'...I found interesting information about glass in the book...'*, *'...I did creative tasks with pleasure and wrote chemical equations...'*, *'...I solved crossword puzzles...'*, *'...I wrote the results in the workbook after completing the laboratory work...'*. Revealing the expression of the students' practical activities at the museum, the respondents stated: *'... I watched and tried to make colourful glass myself...'*, *'...I made a glass vessel...'*, *'...we could touch various chemical materials (salts) which we could not do at school...'*, *'...I did various chemical experiments...'*. Unusual experiences, opportunities to try things which are usually impossible at school or home motivated the students and encouraged to be active.

Analyzing cooperation among the educator, teacher and students *factors of social context* were highlighted: *'...we completed various tasks in groups...'*, *'...I was able to consult the teacher or my classmates...'*, *'...I completed the task by myself, but the educator encouraged asking questions if something was unclear...'*, *'...the educator emphasized that a museum is not a school and we could express ourselves freely and choose what we wanted to do ...'*, *'...we took part in discussions with our teacher and educator...'*, *'...the teacher and educator helped complete the tasks ...'*. Students cooperated with the educator, teacher and each other when completing the tasks. Analyzing the aspects of the students' assessment and awards upon completing the programme, it was stated that: *'...the educator and teacher thanked all after the programme and awarded us diplomas for successful participation...'*, *'...I made myself some colourful glass and could take it home...'*, *'...the glassblower gave me a clear glass swan, while my classmate received a beautiful vase...'*, *'...we were all given*

orange notebooks and pens.... Non-formal assessment, praising and awards were the factors that boosted the students' feeling of content and apprehension that their efforts were noticed and evaluated. The analysis of where and how the results were discussed showed that: *'...generalizations and discussions took place at the end of the activity...'*, *'...each of us had a chance to say what was interesting and what needed to be changed...'*, *'...at school we revised the things we learnt at the museum, discussed and tried to make pigments and different types of paint...'*. The results of the educational programme were discussed both at the educational class and at school in order to concentrate on successes and failures and what needed to be perfected in the future.

The respondents were also questioned whether the educator informed about the museum website or Facebook page emphasizing *factors of virtual context*: *'...the educator told us that we could find our photos on Facebook...'*, *'...it was great to check the photos and remember all the tasks we completed...'*, *'...we all looked really happy in the photos...'*. Students had a great opportunity to not only see their photos and remember joyful moments, but also evaluate the results of the learning process at the museum repeatedly, enjoy the experienced individual and group tasks again and discover additional learning information in virtual space using the museum website and Facebook page.

Analysing if their expectations were satisfied, the students emphasized: *'...I was hoping to do chemical experiments individually or in a group and find out something new about art – my expectations have been satisfied...'*, *'...at the museum we could complete all the tasks ourselves while at school the teacher would only show us something but we could not try it out...'*, *'... I expected it to be fun and to learn something new about art and chemistry...'*, *'...I couldn't have imagined that it would be so interesting to make colourful glass drops...'*, *'...I hoped to have a good time, and in addition I learned and experienced so much...'*, *'...I will long remember how interesting and unusual it was...'*, *'...I felt differently because I was in a different environment where we became scientists and explored new things...'*. The results from the interviews allow stating that formation of the students' personal learning environments at the museum was influenced by the factors of educational environment of the museum (factors of educational, physical, social and virtual context) rather than factors of potential learning environment. Various practical activities and tasks at the museum enabling students to use their senses encouraged their learning motivation, striving for knowledge, abilities and skills and construction of new knowledge.

4. Conclusions

The results of the research indicate that the formation of personal learning environments of self-directed learners was mainly conditioned by factors of educational, physical, social and virtual contexts interacting in the educational environment of the museum, i.e., they have become factors of educational environment of the museum related to factors of personal context (learning motivation in particular), rather than factors in potential learning environment of the museum.

References

- [1] Falk J. H, Dierking, D. L. (2000). *Learning from Museums: Visitor Experiences and the Making of Meaning*. AltaMira.
- [2] Hein, G. E. (1998). *Learning in the Museum*. London: Routledge.
- [3] Jucevičiene, P., et al. (2010). *University's educational power: response of the 21st century challenges (Universiteto edukacinė galia: atsakas 21-ojo amžiaus iššūkiam): monograph*. Kaunas : Technology. (in Lithuanian).
- [4] Savicke, J., Jucevičiene, P. (2013). *Educating Pupils in Museums: The Possibilities for Forming Personal Learning Environment*". *Journal of "Social Sciences"*. ISSN 1392 – 0758. 2012. Nr. 4 (78).

DEBUNKING THE MYTH OF THE IMPORTANCE OF NATIVE SPEAKERS IN EFL CLASSROOMS

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Abstract

The team teaching model of native and non-native teachers in EFL classrooms has long been considered an effective means of instruction. In fact, the employment of native English teachers has been actively promoted by policy makers in Asian countries, such as Japan, Korea, Taiwan, and China. Recently, however, the role of such monolingual native speaker teachers in the EFL classroom is being more critically examined. We report initial findings of our study about the role of native and non-native teachers in EFL classrooms with a particular focus on the Japanese context. Based on qualitative data collected through semi-structured face-to-face interviews with elementary, secondary and post-secondary teachers, we explore the myth that native speakers make better teachers, especially in regards to the teaching of pronunciation, writing, and cultural issues. Our findings reveal that what Japanese teachers expect of native English teachers differs at each educational step, and that the roles of and attitude towards nonnative speaker teachers in the classroom need to be reassessed based on different criteria. Given the enormous differences in ideology, teaching ability and motivation of native speakers, it is thus critical to reconsider the employment, management and use of native speakers in EFL settings and move away from the misinformed belief that they are best teachers of languages.

Keywords: *Native teachers, non-native teachers, EFL.*

1. Introduction

The team teaching model of native and non-native teachers in EFL classrooms has long been touted as one of the most effective means of instruction. Consequently, the employment of native English teachers has been actively promoted by policy makers in Asian countries, such as Japan, Korea, Taiwan, and China. Recently, however, the role of such monolingual native teachers in the EFL classroom is being more critically examined (e.g., Braine, 1999; Cook, 2006). In our study conducted in Japanese elementary schools prior to this research project (Matsumura & Chapple, 2013), for example, we observed little collaboration in lesson planning between native and nonnative English teachers. Furthermore, native speaker teachers often appeared to play nothing more than the role of human taperecorders in the classroom. This very situation supports the body of research into team teaching theory and practice which has revealed problems that could be attributed to native speaker teachers who were hired merely because they are native speakers or native speakers who, despite professional training, are under- or mis-utilized in the classroom thus leading to job stress and dissatisfaction.

This present study is part of an on-going larger scale research project examining EFL teacher professionalism and requirements in Asian countries. This paper, with its particular focus on the Japanese context, is an attempt to 1) examine nonnative speaker teachers' views on problems with team teaching, 2) reveal similarities and differences in the expected roles of native speaker teachers among elementary, secondary, and post-secondary school levels, 3) explore what knowledge and skills should be required for native speaker teachers at respective educational levels, and 4)

discuss how they should be assessed in the recruitment process to ensure the quality and standard of native speaker teachers. In so doing, we attempt to debunk the myth that native speakers necessarily make better teachers, especially in regards to the teaching of pronunciation, writing, and cultural issues in EFL classrooms.

2. Method

2.1. Participants

Participants in the present study were 203 elementary-level, 194 secondary-level, and 12 post-secondary-level nonnative speaker English teachers in Japan. The hiring of English teachers in the Japanese educational system is unique in that an English teaching certificate is required for secondary school teachers only. For those who want to become English teachers at the junior high school level, for example, the first-stage written test is the most significant hurdle to overcome. In fact, many candidates are eliminated at this stage in the recruitment process. The failing candidates cannot advance to the second stage where both practical skills and their aptitude to become teachers are examined. It's not unusual for even fluent speakers of English to fail to obtain an opportunity to demonstrate their advanced oral communication skills because they are unable to pass the first-stage written test. A very small number of secondary school teachers in the present study passed the teacher recruitment exams on their first attempt; most having had to take the exams several times before they were successful. On the other hand, native speaker teachers who teach English as assistants to nonnative English teachers in secondary schools are generally employed through interviews conducted in their home countries. The interviews are often not so competitive meaning that generally only candidates who demonstrate an obvious problematic character are eliminated.

At the elementary school level in Japan, no English exams or certificates are required for teachers in the recruitment process and almost none of them have been trained professionally or had expertise or experience in teaching English when they started their career as elementary school teachers. Despite such a background, all elementary school teachers in the study were currently or formerly entrusted with teaching English to 5th and/or 6th grade students, although their specializations were not teaching English, but math, science, music, PE, or the like.

2.2. Data Collection

Both quantitative and qualitative data were collected. Quantitative data were collected using a 24-item questionnaire that was designed to examine teachers' backgrounds and perceptions about English language teaching. The questionnaire items were provided in the form of multiple-choice or a 4-point Likert scale.

As for qualitative data, we observed both regular English classes taught by a Japanese teacher alone as well as those team-taught with a native English speaker. We also conducted interviews and held open discussion sessions with both the Japanese and native English speaking teachers each time we visited the schools.

3. Results & Discussion

Our findings reveal that what Japanese teachers expect of native English teachers differs at each educational step. Specifically, at the elementary level, while Japanese teachers want native teachers to be pronunciation models for students, there were large discrepancies in terms of the method required of them and what they are capable and/or willing to do, thus leading to confusion and even disharmony between native and nonnative teachers. The traditional focus on form and repetition within certain aspects of Japan's education system means that native teachers are oftentimes

reduced to the role of 'human tape recorders'. With the majority of elementary level teachers uncomfortable with using English, and the majority of native English teachers unskilled in English teaching methodologies and lacking teaching experience – especially at the elementary level – considerable discord was witnessed. Furthermore, Japanese teachers expect native teachers to introduce cultural topics to students but oftentimes these risk being nothing more than over-generalized stereotypes. Given the limited English language abilities of the Japanese teachers and their students and the limited Japanese language abilities of the native English teachers, the possibility for anything more than superficial introductions is unrealistic from the outset. However, such conditions resulted at times in overly simplified lesson content that could lead to the creation and/or promotion of dangerous stereotypes; in other words the antithesis of the goals of such intercultural education.

At the secondary level, where the educational focus moves away from issues of pronunciation to those of writing (due to the demands of the university entrance examination in which, at most, 20% is concerned with oral communication skills), what is most needed is native speakers willing – and able – to teach and assist with writing accuracy. Under the present system and conditions, however, this is neither possible nor likely leading to another large gap between needs and roles. At the secondary level in Japan, while most high schools offer oral communication classes, the central educational focus is on preparation for university entrance exams, which in turn means a focus on grammar and reading comprehension. Little time, unfortunately, is available for writing and that which is, is used mainly for translation rather than production. Consequently, writing accuracy and fluency – important skills for the job market and something that native speakers are able to usefully assist with – are given little time in the curriculum or classroom.

Finally, at the post-secondary level, once again the overwhelming need is for opportunities for oral communication practice with native speakers. While such opportunities are provided, regrettably by this stage, students' lack of oral communication ability is generally interpreted as intellectual deficiency by native teachers. Consequently, such opportunities are considerably underutilized due to less challenging content classes. An examination of the content of classes or the textbooks used in many 1st or 2nd year level English language classes at universities reveals that there is a large discrepancy between what is offered and what is required. A large number of native English teachers working at universities in Japan tend to view the lack of communicative ability, after 6 years of language education, as an inherent inability in languages. Rather, we believe there is merely a mismatch between expectations on both sides along with an inexperience on the part of Japanese students to become active and demanding participant consumers in their own learning.

As a result of these findings, we will show that given the enormous differences in ideology, teaching ability and motivation of native-speakers, it is critical to reconsider the employment, management and use of native speakers in EFL settings and move away from the misinformed belief that they are naturally the best teachers of languages. There are roles and responsibilities for different participants in the teaching program and the acknowledgement of this should lead to improvements and a better, more efficient use of resources.

4. Concluding Remarks

Based on the data we collected in the Japanese context, we recommend that a number of issues require consideration regarding what knowledge and skills should be required for native speaker teachers at respective educational levels, and how they should be assessed in the recruitment process to ensure the quality and standard of native speaker teachers.

Firstly, with regards to the kinds of knowledge and skills required, it is important to differentiate between the levels in which teachers will be working. As identified above, each stage of language education requires different skills and approaches and to assume that just because someone is native they are therefore able to teach anyone, is a clearly misguided method. Clearer guidelines and requirements need to be stipulated in the employment process along with more detailed job descriptions at the outset along with training and monitoring sessions during employment. The widely-held belief that 'you can speak, therefore you can teach', is an outdated and wasteful approach that clearly only benefits native speakers. In other words, there is a need to be aware of the danger of falling prey to mercenary English teachers and their demands.

Secondly, when it comes to the recruitment process, again there is a considerable gap between reality and practice. Perhaps as a result of market constraints and traditional practices, in the past almost any native English speaker was deemed capable of teaching English in Japan. Today, however, the pace of change in the world is dramatic. In the past few decades, a large number of Japanese have travelled overseas for education and consequently there is a growing number of bilingual Japanese who are entering the teaching field. On the other hand, the conditions and demands attached to native speakers in Japan has barely altered. Yet given the growing bilingualism amongst younger Japanese, today there is a much greater need for bilingual native English speakers who understand the culture and are able to teach not only English, but also about cultural issues in Japanese. Together, bilingual Japanese and such bilingual and culturally aware native English speakers will be able to create an atmosphere of trust and collaboration in the classroom leading to more openness and a fostering of internationalism amongst students.

In order to maximize the effect of native speakers in Japan's English language education system, a management structure needs to be created to fully recognize their roles, accommodate and accept them as – if not equals – at least fullfledged team members. At the same time, native speakers need to obtain a wider understanding of the curriculum, their role in the teaching process and demonstrate an attitude appropriate for intercultural understanding and language teaching. This sense of partnership between NNS and NS English teachers affects both NNS and NS teachers' levels of satisfaction with team teaching

In the pre-service training stage, it is necessary to improve prospective NNS teachers' English proficiency, not necessarily to the level where they can communicate fluently with their partner NS teachers, but to the level where they have a positive attitude towards working with them. To this end, for example, graded step up training sessions, study abroad opportunities and so forth should be considered. Next, at the in-service training stage, the provision of combined sessions (currently separate sessions are held for NNS and NS teachers) in which roles can be clearly delineated and discussed would be another positive step forward. Presently it is not uncommon for NNS and NS teachers to meet each other for the first time on the first day of school. Advanced meetings and time together practicing team teaching would undoubtedly lead to more effective planning from the beginning. Overall, psychological barriers between NNS and NS teachers must be lowered and understanding increased in order to improve their actual collaboration.

In order for the present situation to change and improvements to be implemented, changes and support at the policy and bureaucratic level are essential. Such progress will undoubtedly require time but ongoing research and discussion of topics like those outlined here may contribute to expediting this process.

References

- Braine, G. (1999). *Non-native educators in English language teaching*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Cook, V. (2006). Basing teaching on the L2 user. In E. Llurda (Ed.), *Non-native language teachers: Perceptions, challenges and contributions to the profession* (pp. 47-61). New York: Springer.
- Matsumura, S., & Chapple, J. (2013). *Assuring the quality of native speaker teachers in EFL*. Paper presented at the 47th Annual International IATEFL Conference and Exhibition, Liverpool Arena Convention Centre, UK.

THE RELATIONSHIP BETWEEN THINKING AND LEARNING STYLES TOWARDS THE STUDENTS' ACADEMIC ACHIEVEMENT IN MALAYSIA

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Abstract

This study was conducted to examine the relationship between Sternberg's thinking and learning styles towards the students' academic achievement in Social Science, Information Science and Engineering Science. A total of 236 students were involved in this study from the University Selangor (Unisel), Management & Science University (MSU) and Universiti Teknologi MARA (UiTM). The instrument used in this study was 'Sternberg Thinking Styles Inventory' which uses the theory of mental self-government based on three dimensions : Functions, Forms and Levels. While the VAK module involving Visual, Auditory and Kinesthetic was used to measure the learning styles. Questionnaires method was used throughout this research and the data were analyzed using descriptive statistics. The findings showed that 'Legislative and Oligarchic' is the dominant style of Social Science students, 'Judicial and Monarchic' as the dominant style of Information Science students and 'Executive and Hierarchic' style as the dominant of Engineering Science students. 'Global and Visual' style has also been found as the dominant for students of Social Science, Information Science and Engineering Science. ANOVA analysis has showed significance on gender, socio economics and VAK learning styles, but did not show any significance on parents' educational background and birth order on the students' academic achievement. Pearson correlation analysis showed significance on socio-economics and birth order, but did not show significance on gender and parents' educational backgrounds. Overall, the Pearson's correlation analysis on the socio-demographics, Sternberg's thinking and learning styles, and VAK learning styles, showed a significant linear positive relationship on the thinking styles of dimensions Functions, Forms, Levels and style of Auditory. Regression analysis showed the relationship between Sternberg's thinking and learning styles and socio-demographic as intervening variables affecting the relationship except parents' educational level showed no significant effects towards the students' academic achievement.

Keywords: *Sternberg's thinking and learning styles, VAK module, academic achievement.*

1. Research Background

Each student is individually capable of causing a change in a matter and be responsible for the effects and results that are produced by his or her actions. These individuals are also responsible for choosing a life style that suits them. The approach taken by each student in his or her learning is based on the student's subjective perception towards the teachers' needs or the learning contexts. This approach influences students' behavior in terms of behavioral psychology and sociological relationship; this is an attempt by an individual to obtain a change in a new behavior as a whole due to individual experiences in their interactive circles, which influence their academic achievements.

Each individual has his or her style of thinking. The style referred to here is the priority given to thinking. It is not ability but how we use this readily available ability (Sternberg, 1988, 1997). Regardless of different abilities in different students, they need to be given the same treatment without taking into account if their academic achievement is weak or excellent.

The past researches have shown that certain thinking styles can be used to predict academic achievements or academic performance of a student. In managing an activity, selecting an appropriate style is the priority. In the learning process, there are many tendencies possessed and practiced by individuals. According to Hargreaves (1996), learning in actuality does not have any relation to gaining more knowledge or remembering what has been learnt. Learning is actually related to understanding the principles and basic concepts and how these are applied in real world.

Clark-Thayer (1987) reported that certain learning styles have close relationship with profiles of excellent students. Learning style refers to the characteristics of an individual in terms of cognitive, psychomotor and affective domains in trying to understand what is being learnt. It is important for a lecturer to identify and understand the different learning styles among his or her students. This challenge has to be faced by every lecturer in this era of world without border where many approaches, methods, strategies and teaching techniques are adjusted to suit the existing learning styles.

Most of the tertiary students who are eager to achieve academic excellence still practice rote learning due to excessive exposure to examination oriented education system. This causes students to become too dependent on lecturers or teachers; they behave impulsively, become dogmatic and lazy to give their own opinions. The students would concentrate more on the problems faced in not being able to finish reading the notes before examination after spending a lot of time taking notes and planning work as well as time for studying. There are students who fail to adapt themselves to the teaching and learning styles at tertiary institutions. This leads to poor academic performance. Many thinking and learning styles influence some students into memorizing many facts but do not encourage them to think about the facts they are learning. This is what happens to majority of students who learn by memorizing facts or formula; they memorize but could not apply what they have memorized in different situations in real world. Thus, in this research, the researcher will identify the extent to which thinking styles and learning styles relate to academic achievement of students.

1.1 Statement of Problem

The research background shows that each student has his or her unique and individual thinking style. They have different thinking styles which, most probably, influence the way they study and their academic performance. Facing the daily challenges does not only need sufficient knowledge but also the skills to apply the knowledge in different situations. The vast change in education exposes an individual to a variety of choices that needs skills and expertise in making decisions effectively. So, thinking styles and learning styles are the main focus. This research is conducted to analyse the relationship between Sternberg's thinking and learning styles; socio-demographic factors are used as an intervening variant to know whether they could influence the relationship between thinking and learning styles.

1.2 Research Objectives

1. To identify if there is any relationship between Sternberg's thinking styles and VAK learning styles in determining academic achievement.
2. To identify if socio-demographic factors influence the relationship between Sternberg's thinking styles and VAK learning styles in determining academic achievement.

1.3 Research Questions

1. Is there any relationship between Sternberg's thinking styles and VAK learning styles in determining academic achievements?

2. Do socio-demographic factors influence the relationship between Sternberg's thinking style and VAK learning styles towards academic achievements?

2. Literature Review

In this research, the Inventory of Thinking Styles (Sternberg & Wagner, 1992) is used as the research tools to measure the level of think skill mastery. Data is analysed using Statistical Packages for the Social Science software (IBM SPSS V20.5). The students' results in their final examination of a semester (CGPA) is used to determine their academic achievements.

In Robert Sternberg's theory of thinking skills – theory of mental self-government – there are three dimensions of thinking styles which consist of nine types of thinking styles. Everyone has his or her own learning styles that have their own strengths. Learning style can be defined as the motivational interest or pattern that is preferred when processing new information or experiences. There are many models of learning styles. However, the researcher focuses on the learning styles that use sensory perception model (rote learning), which is adapted from Chislett & Chapman (2005) to identify the Visual, Auditory and Kinaesthetic learning styles (VAK learning styles).

In this research, the socio-demographic factors, which are used as an intervening variant, are also analyzed to identify their relationship with the thinking and learning styles of students and their academic achievements. The socio-demographic factors focused here are gender, academic background of the respondents and their parents, socio-economic status and the sequence of respondent's birth in the family (e.g: eldest child, middle child).

In Hong Kong, three researches similar to the one stated previously (Zhang & Sternberg, 1998; Zhang, 2001a, 2001b) were conducted. One of the research (Zhang, 2001a) was conducted among school children while the other two researches were conducted using university undergraduates. The findings of all three researches suggested that thinking styles should be Conservative, Executive and Hierarchic; these relate positively to academic achievements. On contrary, Legislative and Liberal thinking styles relate negatively to academic achievements.

One of the researches conducted in Hong Kong involved the influence of thinking styles towards academic achievements of university undergraduates from Mainland China (Zhang, 2001b). The finding showed that among American school children, Executive thinking style had positive effect towards their academic achievements.

In analyzing the influence of thinking styles towards academic achievements among undergraduates in universities in Philippines, Zhang and Callueng (2002) found that their finding was consistent with the research conducted among Hong Kong students. Generally, the research findings showed that thinking styles should be Conservative, Executive and Hierarchic; these would relate positively to students' academic achievements. Judicial thinking style relates positively to academic achievements of students in Philippines.

A research on the relationship between thinking styles and academic achievements was also conducted among undergraduates from Spain (Cano-Garcia & Hughes, 2000). The research finding supported the findings of the research conducted in Hong Kong; students tend to excel academically when they obey the rules and follow the procedures (Executive), work individually (Internal) and do not summarise and plan to solve a problem (Legislative in negative term).

3. Methodology

This is a descriptive survey research. The chosen participants for this research are students who are in their second semester. They come from Faculty of Education &

Social Sciences, Universiti Selangor (Unisel); Faculty of Informative Science, Management & Science University (MSU); and Faculty of Engineering, University Technology MARA (UiTM).

This research involves 295 students, who are in their second semester, from Faculty of Education & Social Sciences (Unisel), Faculty of Informative Science (MSU) and Faculty of Engineering (UiTM). They are chosen based on convenient non-random sampling and they will be referred to as respondents hereafter. Based on the summary from Krejcie dan Morgan (1970), the appropriate number of sample would be 223. 260 surveys were distributed and 236 surveys were returned by the respondents.

4. Findings

The regressive analysis shows that Sternberg's thinking style and VAK learning styles do influence academic achievements. The variant for Sternberg's thinking styles is 6.6% ($R^2 = 0.066$) inclusive of VAK learning styles amounts to the change of value of R^2 ($R^2 = 0.028$) and change of R^2 is about 5.2% ($\Delta R^2 = 0.052$) and F statistics is significant ($F = 11.571^*$). According to Evans (1985), although the value of variant or R^2 is as small as 1%, it is still considered important in measuring the strength of variables and Jaccard et al., (1990) stated that significant F can be more salient to conclusion that there is a relationship.

There is solid evidence to conclude that changes in R^2 indicate a relationship between Sternberg's thinking styles and VAK learning styles; this relationship influences students' academic achievements. Grigorenko and Sternberg (1997) found that certain thinking style contributes to prediction of academic performance. Their research also revealed that students with certain thinking style would demonstrate better academic achievement. Adapting academic materials to suit this relationship will enable the learning process to be smooth and help to increase the learning benefits, especially for average and weak students. (Nor Azan Zin, Halimah Badioze Zaman & Shahrul Azman Mohd. Noah, 2002)

Besides, adapted learning styles (Sternberg, 1988, 1990, 1997) can cause awareness regarding different learning styles which can make more students to approach their learning tasks and help them to identify their choices. As a result, students can learn how to take advantage of their strength to overcome their weakness as well as adapt to the learning environment based on their own style.

Thus, the result of data analysis supports the question of relationship between Sternberg's thinking styles and VAK learning styles that influences academic achievements.

Regressive analysis show that there is increase in intervening variables: gender 7.0% ($\Delta R^2 = 0.070$), parents' education 5.5% ($\Delta R^2 = 0.055$), socio economic status 7.0% ($\Delta R^2 = 0.070$) and sequence of respondent's birth in the family 7.9% ($\Delta R^2 = 0.079$). The statistic value of F shows all variables are significant; gender ($F = 9.330^*$), parents' education ($F = 7.930^*$), socio economic status ($F = 9.391^*$), and sequence of respondent's birth in the family ($F = 10.221^*$).

The intervening variables show an increase in value of R^2 and β value for parents' education does not show any significant effect. Thus, the result of this analysis denies parents' education as an intervening relationship between Sternberg's thinking styles and VAK learning styles that influences academic achievements.

This research finds that there is a significant relationship in gender but Sadler-Smith and Tsang (1998) did not indicate any difference in gender in their research. Findings also show that Sternberg's thinking styles are better at prediction academic achievements compared to learning styles and intervening variables. Zhang & Sternberg (1998) found that thinking styles can serve as reasonable predictive method for academic achievement. The findings of previous researches conducted also found that there is a significant relationship between learning styles and socio-economic

status as well as sequence of respondent's birth in the family (Sternberg & Grigorenko, 1995)

5. Suggestion

Students need to determine their own learning styles so that they could identify their own strengths and weaknesses in any learning process. Lecturers can identify the existing dimensional elements of Sternberg's thinking styles and also the differences between socio-demography. Lecturers could also plan their teaching strategies to be compatible with their students thinking styles in order to promote effective thinking and learning process. Lecturers can help the students to attain good academic achievement by preparing lesson plans that could fulfill the students' needs. Lecturers can help students who have certain learning styles to improve or maximize their learning potential.

References

- Cano-Garcia, F., & Hughes, E. H. (2000). Learning and thinking styles: An analysis of their interrelationship and influence on academic achievement. *Educational Psychology*, 20 (4), 413-430.
- Clark-Thayer, S. (1987). The relationship of the knowledge of student-perceived learning style preferences and the study habits and attitudes to achievement of college freshmen in a small Urban University (Doctoral dissertation, Boston University, 1987). *Dissertation Abstracts International*, 48, 872A.
- Evans, M.G. (1985). A Monte Carlo study of the effects of correlated method variance in moderated multiple regression analysis. *Organizational Behavior and Human Decision Processes*. 36 (3), December 1985
- Grigorenko, E. L., & Sternberg, R. J. (1997). Styles of thinking, abilities and academic performance. *Exceptional Children*. 63, 295-312
- Hargreaves, D. (1996) *Teaching as a research-based profession: Possibilities and prospects*. London: Teacher Training Agency
- Jaccard, J., Helbig, D.W., Choi K. Wan., Gutman, M.A. & Kritz-Silverstein, D.C. (1990). Individual differences in attitude-behavior consistency: The prediction of contraceptive behavior. *Journal of Applied Social Psychology*. 20 (7), April 1990
- Krejcie, R. V. & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*. 30 (607-610).
- Sternberg, R. J. (1988). Mental self-government: A theory of intellectual styles and their development *Human Development*, 31, 197-224
- Sternberg, R. J. (1990). *Intellectual styles: Theory and classroom implications*. In R. McClure (Eds.), Learning and thinking styles. Washington : National Education Association.
- Sternberg, R. J. (1997). *Thinking styles*. New York: Cambridge University Press
- Sternberg, R. J., & Grigorenko, E. L. (1995). Styles of thinking in the school. *European Journal for High Ability*. 6: 201-219
- Sternberg, R. J., & Wagner, R. K. (1992). *Thinking styles inventory*. New Haven, CT: Yale University. Unpublished
- Zhang Li Fang. (2001a). Do styles of thinking matter among Hong Kong secondary school students? *Personality and Individual Differences*. 31: 289-301
- Zhang Li Fang. (2001b). Do thinking styles contribute to academic achievement beyond abilities? *The Journal of Psychology*. 135: 621-637
- Zhang Li Fang, & Sternberg, R. J. (2002). Thinking styles and teacher characteristics. *International Journal of Psychology*, 37(1), 3-12
- Zhang Li Fang, & Sternberg, R. J. (1998). Thinking styles, abilities, and academic achievement among Hong Kong University students. *Educational Research Journal*. 13: 41-62

VISIONS OF TEACHING INSTRUMENTAL MUSIC PEDAGOGY. A CASE IN THE FINNISH HIGHER MUSIC EDUCATION INSTITUTION

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Abstract

The question of *how to teach to teach (instrumental) music* is little addressed in music education research. The purpose of this study was to examine the visions of teachers of instrumental and vocal pedagogy (N-12) in higher music education regarding 'good' teaching and instrumental student teacher development. In a wider view, this study aims at understanding the approaches the pedagogical studies take by examining the assumptions, ideals and beliefs of the teachers who teach those courses. Theoretically the study is based on the notion of *vision of teaching* (Hammerness 2006, 2009) referring to images of an ideal teaching practice. The data of this qualitative case study was gathered through 12 semi-structured qualitative interviews and analysed by qualitative content analysis.

The findings support Hammernesses (2012) recent findings in the context of Norwegian teacher education in that the program or the faculty members in question did not have a shared or negotiated vision of teaching; teachers' visions were personal instead. Findings suggest that teacher educators' visions of good teaching can be seen to entail two main characteristics: on one hand, the vision was very close to the traditional understanding of a good teacher as a "didactically thinking teacher". On the other hand, their understanding of good teaching could be described as "pedagogical vision" referring to an ideal teacher–student –relationship. (See, Kansanen & Meri, 1999) The process of teacher development was primarily understood as acquiring a package of skills and knowledge that are partly instrument specific, partly generic. The visions appeared somewhat steered and limited by traditions rather than reaching for new possibilities. The pedagogical thinking in general seemed instrument driven instead of guided by larger educational principles. Yet, the traditional canon of the *instrumental music pedagogy* subject was challenged by the ideals of research and reflection based teaching, along with challenges of the vocational field and the labour market.

The notion of vision, as such, did not seem to suit entirely to the ways in which teachers thought about their teaching. Still, teachers were content to share their thoughts and felt the need to discuss visions of teaching with their colleagues. Obviously examining music teacher educators' visions offers important insights with regard to teaching quality of music teacher education which in turn benefits the construction of a clearer understanding of music teacher preparation and serves as a good starting point for discussion and collaboration aiming at developing shared reflection on pedagogical practices. Thus, the notion of *vision* seems to function as a tool worth applying also in the future research on music teacher educations.

Keywords: *Vision, higher education, music education, pedagogy, instrumental music*

SERVANT LEADERSHIP AND STUDENT WORLDVIEW

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Abstract

The purpose of the proposed study is to examine the factors that influence the development of a biblical Christian worldview amongst undergraduate students at a Christian institution of higher education. Specifically, recent studies have shown that the educator plays an integral role in impacting the undergraduate worldview. Examination of the instillation of a biblical Christian worldview (believed to be of significant value to Christian institutions of higher education) and the influences that faculty play in this development in light of the servant leadership model, allow for a significant avenue of new leadership research. Theoretically, the servant leadership model should have the ability to impact this worldview via conscientious faculty who weave biblical truths into both instructional methodology and curriculum. Two variables that can be directly measured are the change in the undergraduate biblical Christian worldview and the faculty servant leadership character itself. As such, the mean scores of the undergraduate biblical Christian worldview, as measured by the Nehemiah Institute's *PEERS* (2003) survey instrument, should shift considerably over the course of one academic year toward the more desired biblical Christian worldview through the effective application of the servant leadership model by faculty members as measured by servant leadership self-assessment instrumentation. Theoretical assumptions that exist in light of this type of research, which are expounded upon herein to include: the difference between leaders and managers, undergraduates and faculty can both discern and self-report concerning their worldviews, worldviews are subject to change, the Christian university desires that the Christian worldview is articulated, the undergraduate desires to live within a realistic and truthful worldview, and the faculty are sufficiently trained in the servant leadership model. Therefore these measurable components, undergraduate worldview development and servant leadership as a mediator of change inside academia, stand to be furthered within their respective bodies of literature from the proposed study. The conference attendee should expect the presentation to be considered a work-in-progress for future research regarding servant leadership and undergraduate worldview in order to generate discussion and feedback moving forward.

Keywords: *Education, teaching, worldview, servant leadership.*

1. Introduction

Although several leadership models have been found to be semi-effective in generating a biblical Christian worldview in undergraduate students, the servant leadership model will have the greatest positive effect on the formation of this biblical Christian worldview. Servant leadership is the foundation stone upon which the castle of biblical Christian worldview can be built to endure through the ages. As an agent of change via conscientious faculty, servant leadership can weave biblical truth into the instructional methodology and curriculum which will have a positive effect on the biblical Christian worldview of the students. Mean scores of the students as identified by the Nehemiah Institute's *PEERS* (2003) survey instrument, as adopted from Fyock (2008), will shift considerably over the course of one academic year toward the desired more biblical Christian worldview through the effective application of the servant leadership model by faculty members as measured by the self-assessment instrumentation provided by Taylor, Martin, Hutchinson, and Jinks (2007).

2. Research Design and Hypotheses

Foundations for the current study were adapted from the work by Fyock (2008) leading to the development of the following hypothesis: In the context of a medium-sized Christian university, the worldview of first-year undergraduates will shift toward a more biblical Christian worldview at the end of one year of exposure to faculty who employ the servant leadership model with the intention of fostering such a worldview formation. The corresponding null hypothesis is: There will be no difference in mean worldview scores over the course of one academic year. Measure of both the student biblical Christian worldview and the effectiveness of the faculty implementation of the servant leadership model via multiple assessment surveys will occur.

Several theoretical assumptions need to be made regarding the formulation of the study in the fact that: (1) there is a difference between leaders and managers in the servant leadership model in that managers look at how to do things right, leaders do the right things (Spears & Lawrence, 2002), (2) that the undergraduate students have the ability to discern and self-report regarding their current worldview, (3) worldviews vary for each individual and are subject to change, (4) the context of a Christian university setting assumes that the curriculum, mission, core values, and philosophy of education of the institution communicates and articulates a biblical Christian worldview, (5) the undergraduate has the desire to live within the circumstances that portray a truthful and realistic worldview (Fyock, 2008), and (6) that the faculty leader is sufficiently trained in the servant leadership model to successfully employ the system. Identification of these theoretical assumptions allows the researcher to significantly narrow the parameters of investigation to the faculty servant leadership effectiveness and the change in the undergraduate biblical Christian worldview. Future research could occur which analyzes each of the preceding assumptions on an individual basis in order to further scholarly worldview formation studies.

3. Objectives

The objective of the theoretical research study shall be to examine to what extent an effective application of the servant leadership model by experienced faculty members' effects undergraduate biblical Christian worldview.

4. Theoretical Methodology

Two variables that can be directly measured via a pre-/post-test analysis are the change in the student biblical Christian worldview and the faculty servant leadership character. The dependent variable being the measure of student biblical Christian worldview as indicated earlier will be via the *PEERS* (2003) survey instrument as referenced in the dissertation by Fyock (2008). Ideas and convictions from biblical worldview scholars as well as a number of humanist scholars were employed in the development and writing of the survey instrument (Fyock, 2008). Furthermore, both Fyock (2008) and the Nehemiah Institute conducted varied analyses that ensured the validity and reliability of the instrumentation in measuring this biblical Christian worldview shift in student populations.

The independent variable being the faculty servant leadership measured by an assessment as presented by Taylor et al. (2007) which provides a 99 item instrument that is based on a 7-point Likert scale which ranges from (1) strongly disagree to (7) strongly agree called the Self-Assessment for Servant Leadership Profile (SASLP). Taylor et al. (2007) grouped the items into 12 categories: integrity, humility, servant-hood, caring for others, empowering others, developing others, visioning, goal setting, leading, modeling, team building, and shared decision-making. It is worth noting that Taylor et al. (2007) point to these characteristics as being emphasized in servant leadership literature and furthermore that these characteristics can be directly related

to servant leadership as put forth by the previously referenced Spears (as cited in Taylor et al., 2007). The Taylor et al. (2007) article supports the supposition of being able to measure servant leadership character in the faculty through the use of their instrumentation.

5. Discussion and Theoretical Considerations

Along this line of reasoning, a look at recent studies indicates that one of the greatest influences on student worldview development has been the input by the educator. Examination of these two factors (instillation of a biblical Christian worldview and faculty) in light of the servant leadership model presents a formidable area of new leadership research. As such, the focus of the proposed study as an examination of the effects of faculty on the formulation and development of a Christian undergraduate worldview through application of a servant leadership model is a worthy endeavor and adds value to the current literature via identification of one of the factors of influence upon undergraduate worldview.

Furthermore, this topic demands further examination as it is important to varied shareholders of the system including parents, faculty, the students, institutions of higher education, and the taxpaying society as well. The crux of this need for examination arguably comes from the previously mentioned assumption that one of the main purposes to attending a Christian university is to maintain or even establish a particular biblical Christian worldview. Research regarding the development of a biblical Christian worldview exists in the academic realm; however the factors that influence this worldview formation have not been fully investigated to date. Thus there is a need for this type of study which examines the independent factors with their impacts on worldview formation. Considering the increased emphasis on worldview formation, worldview integration, and the recent awareness on educator influence as it pertains to worldview, a call for this type of study exists to fill in current research gaps.

Support for this particular study can be found in the previous research articles by authors such as Glanzer and Talbert (2005) with "The Impact and Implications of Faith or Worldview in the Classroom". The study investigates the connections between teachers' identities and practices from a postmodern perspective via a survey of 58 teacher education students at a Christian university (Glanzer & Talbert, 2005). The exploration was to see how the students understand this connection of the interdependent and virtually inseparable factors of teacher identity and practices (Glanzer & Talbert, 2005). The results revealed that most students did not see faith or worldview as directly informing the educator pedagogical methods; however most students did see indirect ways of worldview integration into the classrooms in constitutionally appropriate ways (Glanzer & Talbert, 2005). Furthermore, Glanzer and Talbert (2005) make suggestions on how teacher education can develop these connections through student education. The similarities to this study are evident in the faith/worldview and faculty elements of the article but lack the measureable traits of servant leadership and biblical Christian worldview.

Other good springboard studies also exist such as the work of Kanitz (2005), "Improving Christian Worldview Pedagogy: Going beyond Mere Christianity". In this study, Kanitz (2005) examines the challenges of communicating a Christian worldview in higher education and the approaches to transforming student thinking; a clear application to the proposed. The author suggests that to do this, one must reexamine the presuppositions we have regarding a Christian worldview as a unified, monolithic structure (Kanitz, 2005). In essence, Kanitz (2005) calls higher education to consider the denominational and institutional differences, as well as the cultural influences, to make the Christian worldview pedagogy more effective. While not empirical in nature, the philosophical aspects of the article can shed some light on the proposed study and worldview research, again with the caveat of limited measurable influences.

Next, an article by Hammond and Hunter (1984) uses data from thousands of students who attend college at institutions that range from secular-public to exclusively Christian. The authors investigate three key elements to determine if the religious worldview of the students varies significantly between the Evangelical and the less Evangelical campuses (Hammond & Hunter, 1984). Interestingly, the results indicated that the religious worldviews appears to be stronger to some degree on the campuses with a less Evangelical presence (Hammond & Hunter, 1984). The indirect tie of this research to the current study is the exploration of the Evangelical worldview of the college students, which may be somewhat correlated to the current investigation of biblical Christian worldview of the college students. The three factors investigated in the study are "...1) variation in Evangelical beliefs, 2) the relationship of Evangelical beliefs to other dimensions of the Evangelical worldview, and 3) the impact of college context on that worldview" (Hammond & Hunter, 1984). Elements of varied contextual settings renders this research applicable but not as focused as the current study, again providing evidence for the gaps in literature and research inside the context of Christian higher education.

Lastly, other credible sources of information may be in the form of completed or current dissertation works. These studies can focus on varied aspects of the proposed work herein similarly to the work of Fyock (2008), in which he examined the effects of a teacher's worldview on the worldview of high school seniors at a Christian school as measured by Nehemiah Institute's *PEERS* (2003) worldview survey. The results of the Fyock (2008) study give valid reasons to expect the thesis statements of the current study will prove true as well. Furthermore, Fyock (2008) found that an intentional weaving of biblical truth into the instructional methodology and curriculum had a positive effect on the worldview of the students which lends itself to the research described herein. The teacher was found to be an important factor in the influence of the student's worldview, particularly a biblical Christian worldview, in the high school setting thus setting the stage for further research in the higher education realm via the servant leadership model. The differences in the two studies allows for potential gains in research with the addition of the servant leadership model and the higher education context.

These as well as other credible research articles exist in abundance but seem to lack the focus on the key elements of faculty servant leadership and biblical Christian worldview. A composite study is needed to fill in the research gaps that exist in linking these worldview factors and their effects on student worldview formation. In particular, the investigation of these factors upon a biblical Christian worldview formation need to be examined further considering the reexamination of Christian education underway.

Additionally, the influences to the community and society are multifaceted in this particular application of servant leadership in the higher educational arena. The impact on the learning experience of both the faculty and student components is important in equipping the student with crucial career and life skills (Hays, 2008). The proposed inversion of traditional hierarchical systems by the servant leadership model will empower followers to become more autonomous, with an emphasis on roles of service, support, stewardship, and further facilitation of leadership (Hays, 2008).

Furthermore, Fyock (2008) instigates that the shareholders of a Christian educational system should be encouraged on several fronts regarding the formation of student biblical Christian worldview as it pertains to the educator. Similar to Fyock's (2008) work on the subject, the proposed study should shed some light on the impacts of instructional methodology and curriculum to ensure deliberate biblical Christian worldview and the role of faculty in the formation of this desired worldview. Christian higher education, as a community unto itself, should gain insight as to the management, identification, and school's effectiveness as they pertain to undergraduate spiritual needs and the servant leadership model. Perhaps the overall benefit to the higher education community is best summarized by Woodrow (2006) who

states, "Over time, an organization develops a unique personality, or culture, which shapes the values, attitudes, aspirations, and behavior of its members". The value is in the shaping of this biblical Christian worldview community with a specific personality so eloquently outlined by Woodrow (2006).

6. Concluding Comments

Significance for the proposed work is found in the fact that gaps in the literature will be filled in both leadership studies and undergraduate worldview studies, in particular servant leadership models and Christian worldview. The importance of the research to varied interest groups has been outlined confirming the need for further investigation. As well as this significance factor, examination of preliminary works has been instigated herein lending theoretical significance. Servant leadership is moving in directions which have not been seen by the educational community and as such require particular respectful inquiry in the immediate future of the leadership model to provide sustainability to the systems of higher education going forward. Leadership is the key to the immediate future of higher education and changes will indeed need to occur moving forward. This dilemma is one in which higher education cannot take the typical sit-and-wait approach but must actively move to instigate the changes that the shareholders would desire to see implemented going forward.

References

- Fyock, J. *The effect of the teacher's worldviews on the worldviews of high school seniors*. (Doctoral dissertation). Retrieved November 19, 2011, from Dissertations & Theses: The Humanities and Social Sciences Collection. (Publication No. AAT 3310854).
- Glanzer, P. L., & Talbert, T. (2005). The impact and implications of faith or worldview in the classroom. *Journal of Research in Character Education*, 3(1), 25-42.
- Hammond, P. E., & Hunter, J. (1984). On maintaining plausibility: The worldview of evangelical college students. *Journal for the Scientific Study of Religion*, 23(3), 221-238.
- Hays, J. (2008). Teacher as servant applications of Greenleaf's servant leadership in higher education. *Journal of Global Business Issues*, 2(1), 113-134.
- Kanitz, L. (2005). Improving Christian worldview pedagogy: Going beyond mere Christianity. *Christian Higher Education*, 4(2), 99-108. doi:10.1080/15363750590923101
- Spears, L. C., & Lawrence, M. (Eds.). (2002). *Focus on leadership: Servant-leadership for the twenty-first century*. New York: John Wiley & Sons.
- Taylor, T., Martin, B. N., Hutchinson, S., & Jinks, M. (2007). Examination of leadership practices of principals identified as servant leaders. *International Journal of Leadership in Education*, 10(4), 401-419.
- Woodrow, J. (2006). Institutional mission: The soul of Christian higher education. *Christian Higher Education*, 5(4), 313-327. doi:10.1080/15363750600860778

FEASIBILITY STUDY ON LEARNING REHABILITATION BY SMELL AND SOUND

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Abstract

The mechanism has not been clarified enough though it is known that perceptual stimulus of the sight, the hearing, and sense of smell, etc. influence the learning effect. We quantified the influence by the sensory impulse by monitoring an autonomic activity with an electrocardiograph. Moreover, the reliability of data has been improved by using a gas chromatograph mass spectrometer and a high-speed Fourier analysis. The influence that the smell exerted on the activation level of the communications network in the study class was quantitatively investigated. Perceptual stimuli are commonly known to influence man's behavior. Senses of smell and sound in the perceptual stimuli were researched in the study. The olfactory stimulus is transmitted directly to the brain, it is thought that the major impact is given to man's behavior. The influence on the learning efficiency by giving the sound stimulus with the 1/f fluctuation was examined about the acoustical environment. The limonene, the α -pinene, and lavender (extraction oil) were used as a smell substance. We know that the limonene improves person's level of alertness. The α -pinene has the effect of decreasing a psychological stress. Lavender makes feelings quiet down and there are sterilizing properties, too. The influence on the learning achievement by the presence of the smell was examined by using the testee. The measuring object was a university student. Communications strength in the class was analyzed by the sociometry method developed by Jacob L. Moreno. As for a certain kind of smell, it has been found that there is working that improves strength of internal communications of the class as a result of examining the difference of the group cohesiveness index by the presence of the smell. Moreover, it was shown that strength in the effect was different depending on the kind of the smell. We were able to clarify that the smell was able to be used to improve communications in the class from the above-mentioned result. On the other hand, it was clarified to us that the sound with the 1/f fluctuation might become a trouble in the study process. Moreover, the rhythmical music showed that there was an effect of improving the memory. The effect of the learning rehabilitation achieved by giving an appropriate smell and sound to the student who had learning disorder by our research was able to be quantified.

Keywords: *Smell of plants, Sound with 1/f fluctuation, Learning rehabilitation, Communications strength*

1. Introduction

We studied the influence that the smell exerted on communications in the class and its learning effect. People are using the perceptions of the sight, the hearing, sense of smell, and the sense of touch, etc. to recognize my environment. Oppositely, these sensory impulses influence our behavior.

Sense of smell in the sensory impulse was studied in this research. Because the olfactory stimulus is transmitted directly to the brain, it is thought that the major impact is given to our behavior. For instance, the research has already been done as for the influence that a comfortable smell gives the learning efficiency. As for us, the smell examined student's learning effect and the influence on communications. (Arial,

11pt., justified, indented paragraphs without line spaces between them – like in this example).

2. Methods

2.1. Working ability test

In this report, it explains the experimental result when the limonene is used as a smell substance. It is reported that the limonene improves the level of alertness of the people according to the research of the past. The difference between them was measured when the smell substance of a constant density was made to exist in the classroom and when it did not exist. Testes were eight university students. It seemed that the experimental result was influenced by the order of the given environment. The result when it started from the limonene and when it started the limonene none was averaged.

Y. Uchida in Japan developed from the 1920's to the 1930's based on the work curve that the emir Kraepelin who was the psychiatrist in Germany had discovered.. The test paper is showed in Fig.1. The addition of one digit (Consisted of the combination of 3, 4, 5, 6, 7, 8, and 9) was done in order of the rest of five minutes and the calculation of ten minutes and the rest of five minutes. The work efficiency was measured in this law though it was usually used from the answer pattern for the character judgment.

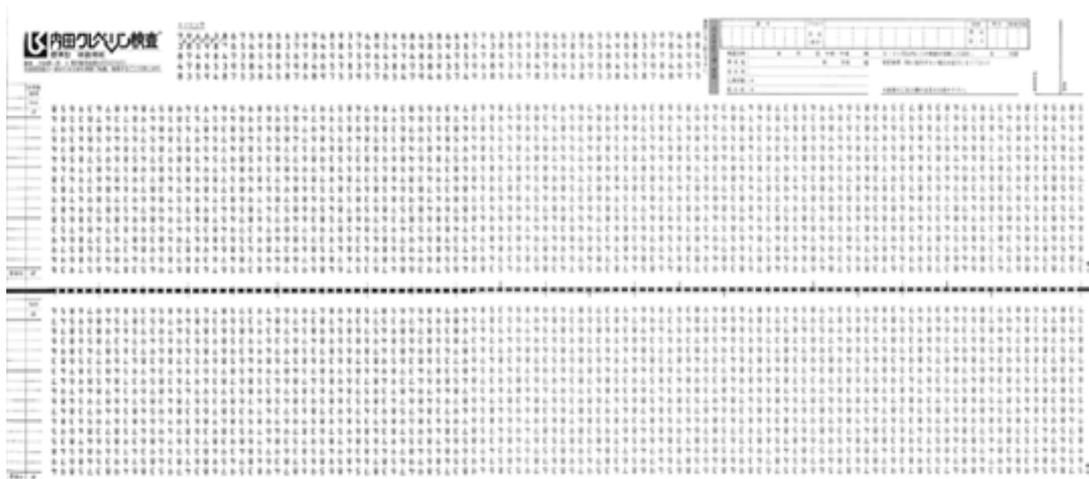


Figure 1. The test paper of Uchida-Kraepelin

2.2. Memory test

After random numbers of 15 digits had been presented on the screen of the computer for five seconds, the display was erased. Afterwards, the progression of random numbers that had been memorized in ten seconds was written on paper. A short-term memory was quantified by measuring the length of the number of random number sequences that the teste was able to answer and the random number sequence answered correctly. The pattern of memory test is showed in Fig.2.

example: 459770514935

Figure 2. A pattern example of memory test

2.3. Electrocardiograph measurement

The influence that the limonene exerted on student's physiology was measured with an electrocardiograph. An autonomic activity was calculated from the measured

electrocardiogram. The example of measurement result of electrocardiograph and electrocardiographic monitor were showed in figure 3. Autonomic is composed of the sympathetic nerve and parasympathetic. It is psychologically in the state of tension when the sympathetic nerve is dominant. Moreover, when parasympathetic becomes dominant, the people are relaxed.

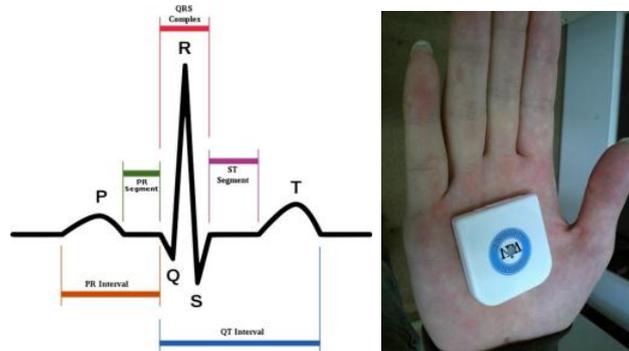


Figure 3. A measurement result of electrocardiograph and electrocardiographic monitor

3. Results and Discussion

It depends on emotion of the people and the sympathetic nerve and parasympathetic change respectively. Figure 4 showed that the difference when the limonene exists and when this doesn't exist is displayed.

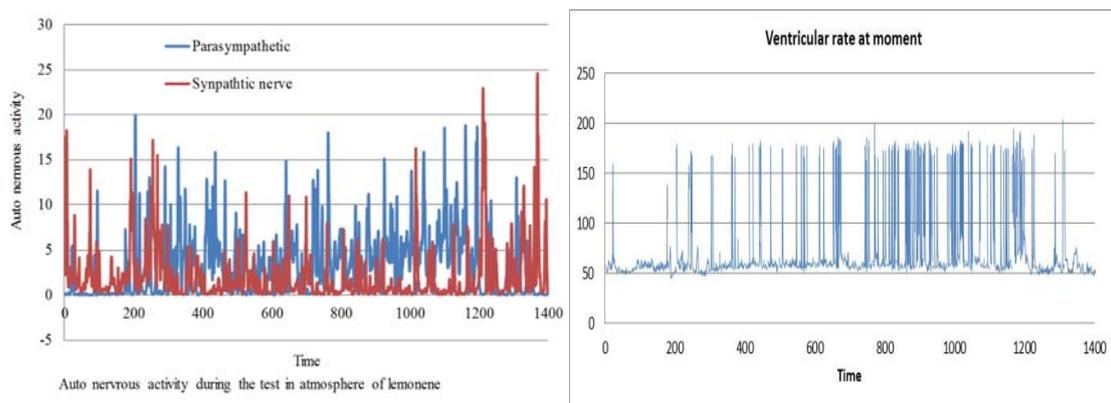


Figure 4. Auto nervous activity and ventricular rate in test condition

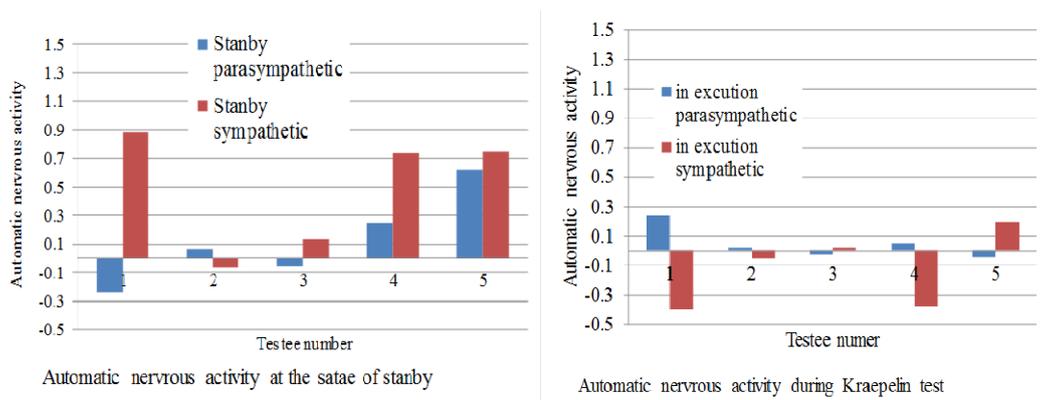


Figure 5. Automatic nervous activity of stand-by and Kraepelin test

Figure 5 showed an autonomic activity in the atmospheric state before the Kraepelin test is executed. It is understood that the activity of the sympathetic nerve was more dominant than that of parasympathetic each other from the existence of the

limonene. This showed the nervous activity after the test had ended. Because the limonene existed, the sympathetic nerve became dominant. The effect of the limonene was the most remarkable of three phases.

The left-hand side of Figure 6 showed that the influence on the number of answers by the presence of the limonene. It has been understood that there is little effect of the limonene for the number of answers. The right-hand side of the figure showed the influence that the limonene exerted on the correct answer rate. It is understood that the smell of the limonene raised the correct answer rate though they are several samples. Especially, the effect appeared when the response rate was low. The nervous activity after the test had ended. Because the limonene existed, the sympathetic nerve became dominant. The effect of the limonene was the most remarkable of three phases.

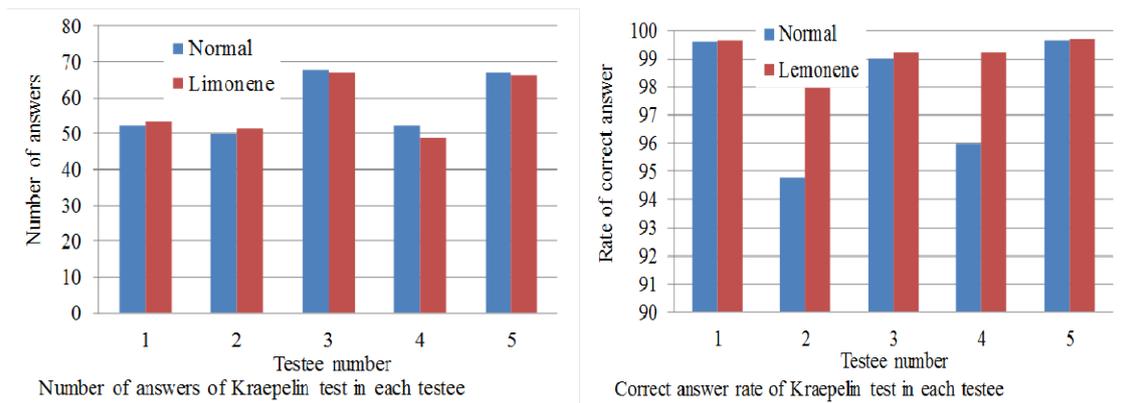


Figure 6. The influence of limonene on the number of answers and correct answer rate

The left-hand side of Figure 7 showed the effect of the limonene of the memory test at the standby time. It is shown that the environment where the limonene exists is dominant when the numerical value is a plus. The limonene had the effect of making the sympathetic nerve dominant. The right-hand side of the figure7, in the state to memorize the progression, working of autonomic is inactivated from usually according to the existence of the limonene. It is thought that the student was mentally steady. After the memory test had ended, an autonomic activity was various according to the people. The effect of the limonene was not admitted in this state.

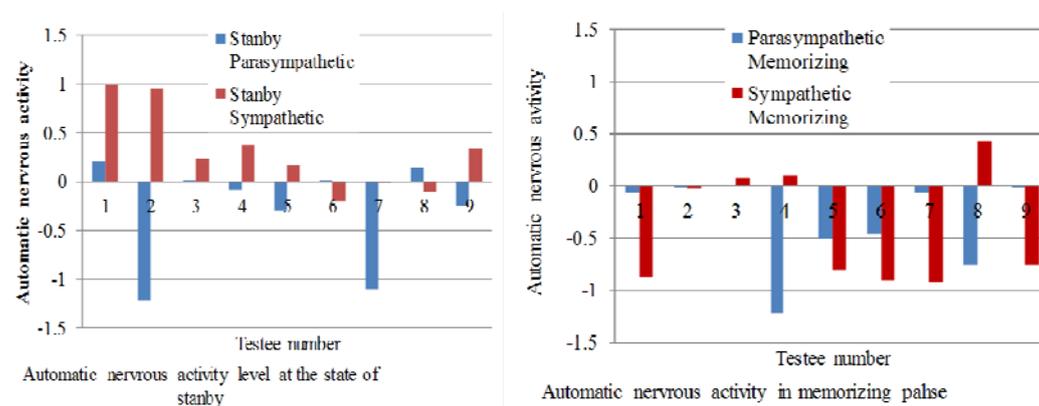


Figure 7. the effect of the limonene of the memory test at the standby and memorizing

Figure 8 showed the relation between the result and the limonene of the memory test. The smell of the limonene hardly influenced the number of answers. On the other hand, some numbers of correct answers have improved by the existence of the limonene. Figure 9 showed the group cohesion power of the student of the class by

the presence of the limonene. It has been understood that the group cohesion power rises by the limonene when cleaning it to the discussion.

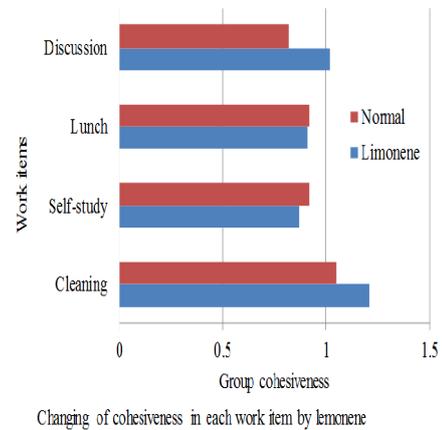
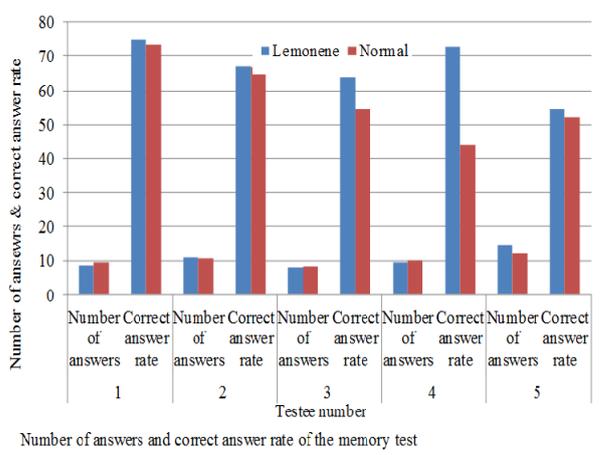


Figure 8. Limonene effect on the memory test Figure 9. The group cohesion power

The influence that the sound stimulus exerted on the intellectual ability was measured by containing the α wave and the Θ wave element and using music. Because the influence that the sound exerted on the efficiency of the intellectual endeavor was large with the rose of acquired data, the interpretation of the result was difficult. As for music including the α wave element, the effect of improving the memory by 5% was admitted from the experiment that memorized random numbers of 15 digits.

4. Conclusions

Text The influence that the smell environment of the classroom exerted on study was examined from an autonomic state of the activity. The limonene was used as a smell element. The autonomic nervous activity was measured with an electrocardiograph. As a result, the following effects were achieved by the existence of the smell of the limonene. Autonomic at the Kraepelin test (simple addition) is stabilized.

Student's level of alertness after the memory test had ended was improved. As for music including the α wave element, the effect of improving the memory by 5% was admitted from the experiment that memorized random numbers of 15 digits. The correct answer rate has been improved. The group cohesion power in the subject like the cleaning and the discussion, etc. has been improved. We are planning to do a more detailed research in the future, and to improve the accuracy.

References

Nara M., Influence of smell on **communications** strength in a class: Educational physiology (2012), Hawaii International Conference on Education
 Nara M, and Shimizu K. Research on influence that environment of forest exerts on intellectual ability (2012), Proceeding of Annual meeting of the informatics association between Japanese

SPORT AND SOCIAL INCLUSION: RESEARCH PROJECT “TI PROPONGO UN CAMBIO”

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Abstract

A survey led by ISTAT about the aspects of the daily life of disabled in Italy, shows up how the inclusion of them, in the social relationships, is one of the most relevant issues. It results that, the more high the limitation degree is, the more the personal autonomy is affected and then the ability to relate with the other. A possible solution could be found in the associations as a potential inclusion mean and an opposition to the isolation.

In this context, took form the project “Ti propongo un cambio”. This is about the change of perspective which tried to make an able-bodied society go towards disabled subjects to understand their situation in trying the disability on themselves.

This project wants to encourage the meeting and the dialogue between these two realities and to promote a better inclusion by able-bodied, along one of the few possible ways: the sport.

17 able-bodied young, from 13 to 17, volunteers of a local Oratory, participated to many sports and psychomotor recovery activities, with other disabled young of a sports association. The activities were held every week, three days a week, in January 2013. The able-bodied simulated the disability to realize the real conditions of the disabled of the Association. During the simulations, there were obvious difficulties in the execution of the motor task required by the trainer; these inconveniences were reported in observation cards properly compiled by the able-bodied subjects. Apart from the simulation test, the most important for this project, two other tests were held.

At the beginning and at the end of January, it was compiled the “TGMD” Test for the valuation of the gross motor development. In the first test, not all the subjects were able to execute the exercise in a proper way, but there was a huge improvement in the second test, thanks to the good conduct of the sports activities in the project’s program.

Before the project activities the subjects answered some questions about the disability and about their behavior in approaching the disabled subjects; also this test was repeated at the end of the activities. It showed up a change of perspective, thanks to the overcoming of the stereotypes and of their fears. From the results detected by the simulation cards and the answers about the disability, it is clear how the two observed realities were able to find and maintain a strong contact point, which led to the incrementation of the awareness that we’re all part of a unique world.

Keywords: *Inclusion, change of perspective, able-bodies, disabled, associations.*

1. Introduction

The term inclusion, in this work, will be used as to be included in a social reality made by subjects conventionally defined able-body and subjects conventionally defined disabled whom disabilities don't represent a disadvantage but a *different*-ability. The inclusion wants to represent a total equality of services and opportunities. In this sense, the role of motor and sport activities portray a fundamental intervention in

education addressed to people with disabilities; in fact, in this field more than elsewhere they can improve their self-esteem. Motor activity represents an important phase in the integration process.

Studies and researches made in the USA (Wesson and Mandell, 1989) evidence how a specific intervention could correct negative behaviors and put down stereotypes and prejudices against people with disabilities. It has been demonstrated that to learn from simulation experiences improve able-bodied behaviors.

In order to improve communication and relationships between able-bodied and disabled, it could be useful to increase the comprehension of adaptation techniques utilized by disabled.

The authors propose simulation experiences which have some of the following features:

- they must be the most possible realistic and suitable to different environments;
- they must be repeated at least four times to comprehend the connection between ability-disability and environments.

Some studies realized in Italy by ISTAT (Istituto Nazionale di Statistica - 2006) about disability evidence that part of adolescents with disabilities aged from 6 to 24 don't meet their friends.

Starting from this data, the Institute finds “a possible solution in the associationism as a potential mean for including and opposing to the isolation”. (“La disabilità in Italia; il quadro della statistica ufficiale” - ISTAT 2010).

In the whole world there are lots of associations which, using sport, operate in the social field. This work, will be about the Association Special Olympics Campania, included in the Special Olympics International founded in 1968 in USA by Eunice Kennedy Shriver, and the Salesian Oratory of Salerno inspired to San Giovanni Bosco.

2. Design

With the purpose of promoting a better inclusion of disabled and educating to disabilities as a part of ourselves, as a richness and no more as a limit, the following research design as been developed:

1. subministration of the test TGMD (Test of Gross-Motor Development – Dale A. Ulrich, 1985) at the start and Focus Group about perception of disability phenomenon;

2. sport activities promoted without any specific methodology assigned to simulation. The goal of this activity is to create socialization among youth and to outline a specific setting of emotional sensibilization for identification process;

3. sport activities, structured utilizing specific tools to make possible the simulation of disabilities. The aim of this phase is making possible to a young able-bodied to experiment the disability on himself and to find effective adaptation techniques. After these activities the evaluation form of simulation proposed by Wesson and Mandell has been subministrated (1989).

4. subministration of TGMD at the end and Focus Group same as the one at point one about the perception of disability phenomenon to analyzed eventual change of perspectives.

Once concluded the four phases the equipe has gathered all data and started the detailed analysis of each one.

3. Objectives

The objective of this research was to verify if sport activity with ludic and psycho-motorial character could show in able-bodied youth a demolition of stereotype barriers and a review of their “normality”.

4. Methods

The group considered is composed by: seventeen able-bodied volunteers from Salesian Oratory aged from 13 to 17, attending different schools, who took part to sport and psycho-motorial activities with disabled from Association Special Olympics aged from 10 to 45, with different disabilities. To the able-bodied's parents it was delivered the explication of the whole projectual's action and the authorization for the handling of the personal data pursuant to the Personal Data Protection Code.

The tools used to accomplish the objective of the project was:

- Evaluation forms of the simulation's reaction (Wesson e Mandell, 1989);
- TGMD (Tests of Gross – Motor Development - Dale A. Ulrich, 1985);
- Focus Group

The adopted methodology includes simulation methods, active participation and change of perspective. The project is referred to specific evaluation forms, developed by Wesson and Mandell in 1989. These forms monitor the reactions of people involved to the simulations, by using indicators which solicit the self-evaluation during activities, as for example:

- "This activity made me feel incapable"	- "This activity made me reflect deeply about disability"
- "For a person with this disability could be difficult to like himself"	- "A person with this disability has few friends"

The answers could be:

- no;	
- yes, absolutely;	- yes;

The TGMD test concerns the evaluation of gross-motor development through standardized subtest, as:

- horizontal jump;	
- striking a stationary ball;	- underhand roll;

For the Focus Group the following questions have been provided:

- "What does it mean for you disability?";
- "It is difficult for you to relate with young boys with disabilities?";
- "In which context or environment have you meet a disabled person?".

The participant answered freely according to their life and their sensibility.

The methodology was made by the following phases:

1. December 2012: the able-bodied youth started the pre-test phase: they compiled the form for evaluation of gross-motor ability (TGMD) and the Focus Group.

2. January 2013: sport and simulation activities have been performed three times a week during three weeks. The activities proposed were football and volleyball matches. As a simulation we intended the activity in which a first group of boys completed an obstacle ground with bandages e special glasses to simulate a ipovision. At the same time, youth disabled guided them with vocal indications. At the end of these activities, the group completed the simulation forms followed by circle time with all participants. In a different time, the second group received the work to observe one of disabled boys, Salvatore, 17 years old, born blind, who regularly performs athletics. The group observed his adaptation techniques with curiosity and amazement. At the end of training they completed their simulation forms too, with their reactions. Tools used for creating the obstacle ground were: hurdles, rounds, cones, plastic balls, basket balls, rugby balls, tennis balls, rackets, bandages and special glasses.

3. January 2013, end: able-bodied performed again the evaluation test for gross-motor abilities and Focus Group.

5. Results

The analysis of data was carried through descriptive tables which show the percentile data separated for each indicator.

In table 1. the obtained results are reported by simulation forms:

Table 1. Percentual results of evaluation forms

No, absolutely	No	Yes	Yes, absolutely	
This activity made me feel incapable	30%	/	60%	10%
This activity was easier than i thought	50%	40%	10%	/
This activity made me feel stupid	60%	20%	20%	/
This activity was funny	/	10%	50%	40%
This activity made me think a lot about disability	/	/	50%	50%
This activity made me feel a big need for help	10%	10%	30%	50%
For a person with this disability would be hard having a partner	50%	10%	30%	10%
A person with this disability could never have a job	20%	80%	/	/
For a person with this disability would be hard to be a parent	50%	10%	40%	/
For a person with this disability would be hard to like himself	10%	30%	50%	10%
A person with this disability really need help for house works	/	10%	90%	/
A person with this disability has few friends	40%	10%	50%	/
A person with this disability maybe could never vote	50%	30%	20%	/
A person with this disability can't manage his economic situation	30%	60%	10%	/
A person with this disability has few chances to have fun in free time	50%	30%	20%	/
A person with this disability would like to come and meet me in my home	/	/	30%	70%

To calculate the final score in TGMD the following steps are required:

- addition of raw score obtained (that is the number of motor components mastered) . The top raw score in the subtest of locomotor skills is 26, while in object control skills is 19. In the specific case, the first subtest score goes from a minimum of 17 to a maximum of 24; in the second subtest from a minimum of 13 to a maximum of 16.

- raw score conversion in standard score to allow the comparison between the subtests through specific table contained in TGMD manual.

- Further conversion of raw scores in percentile rank as a reference in the normative group.

The final result is the following:

Table 2. TGMD Scores recording

Raw Score	% percentiles	Standard Scores	
Locomotor skills	(min) 22 – 24 (max)	(min) 16 – 37 (max)	(min) 7 – 9 (max)
Object control skills	(min) 16 – 18 (max)	(min) 9 – 50 (max)	(min) 6 – 10 (max)
Total standard score	/	/	(min) 13 – 19 (max)
Gross-motor Quotient	/	/	(min) 79 (max) 97

Table 2. shows the results obtained by able-bodied sample in the 2nd subtest. Referring to tables in TGMD manual, these results are in the high category: the 6,87% of subject got this result. Comparing to the first test there was an increase of 30%.

In the able-bodied youth there is no evidence of motor deficit or mental retard.

The result is not fully consistent due to poor sport practice.

The data generated by Focus Group, the common think was oriented towards the conception of the disability not as a limit but as a different ability even though, in that moment, there was a big difficulty in relating to the disabled naturally.

During the Focus Group, at the end, the able-bodied showed how relating with simplicity and feel the disabled in a normal way are the trump cards for a sincere friendship based on the sharing. The major part states he stepped into the shoes of the disabled with opening attitudes for a real consciousness of the other.

6. Discussion/Conclusions

Analyzing the evaluation forms of the simulation's reaction, it's showed how the young could step into the shoes of the disabled. The areas that touch the most their life (safety of being able-bodied, the perspective of a job, the free time) are the ones in which they notice bigger problems for a disabled person. Instead, for what concerns partners and friends, their opinions diverge. They all agree about the last indicator and about the joy of hosting their new friends at their home.

In the annual survey realized by ISTAT about youth aged from 15 to 19 who practice sport continuously results that in 2011 only the 42,1% practices it continuously, less than the 43,4% in 2010.

This check is present also in this work in which it has been demonstrated, thanks to the test TGMD, how sport practice helps to sensibly improve gross-motor skills of everyone.

Despite the small number of the sample, the equip has decide to test the projectal actions on this short group, so to have the bases for an extensive research.

At last, from the analysis of their behavior relating the disable person, the young expressed the following thought: "It was said to us: Thou shalt love thy neighbour as thyself; and so it was". This was an expression filth of sincere feelings, great syntesis of our work.

Considering the tenability of the project for the future, we hypothesized the same research on a wider sample in different type of schools (primary and secondary school) where there are often episodes of bullism. In fact it is useful the change of perspective to help to sensitize young students.

At the end of the research project even if the activities are finished, the youth able-body continued to attend the Association with their new friends.

This regular attendance demonstrate the real change of perspective.

Finally it can be said that an evident change of self-perception took place in disabled and able-bodied.

The two observed reality have been capable to find and maintain a strong contact point, which took to an increase of consciousness that, even if unique, we are all part of the same world.

References

- Buonocore M., Mastromattei D., Tosarello M., (2011). "Disabilità e sport". Edizioni Nuova Cultura.
- Carraro A. Lanza M., (2004) "Insegnare/apprendere in educazione fisica: problemi e prospettive", Armando Editore
- Dale A. Ulrich, (2007), "*TGM – Test di valutazione delle abilitàgrosso-motorie*", Edizioni Erickson.
- De Negri M., (1999), "*Neuropsicopatologia dello sviluppo*", Edizioni Piccin
- Gomez Paloma, F., Sgambelluri, R. (2012), "*La disabilità tra didattica e sport*", Edizioni Simone.
- Sibilio M., (2005), "*Lo sport come percorso educativo – Attività sportive e forme intellettive*", Edizioni Guida.
- Sistema Statistico Nazionale – Istituto Nazionale di statistica, "*La disabilità in Italia – il quadro della statistica ufficiale*", (2004-2005)
- Tavella S., (2012), "*Psicologia dell'handicap e della riabilitazione nello sport*", Armando Editore.
- www.istat.it
- www.specialolympics.it

INTEGRATING UNIVERSITY-BASED RESEARCH, TECHNOLOGY AND CULTURE IN FLY-IN CANADIAN INDIGENOUS COMMUNITY SCHOOLS

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Abstract

One of the challenges facing schooling in Indigenous communities around the world is how to enhance students' achievement through culturally responsive pedagogies. The issue involved is not merely that of moving away from Eurocentric pedagogies to emphasize all that is related to Indigenous culture, but of recognizing Indigenous epistemology as a necessary tool for educational innovation. This paper describes a three-year project funded by Canada's Social Sciences and Humanities Research Council (SSHRC) to investigate the development, evolution and educational role of an innovative digital high school that provides an alternative delivery model for high school students in remote and isolated fly-in Aboriginal communities in Northern Ontario. The project was a collaborative study between university-based researchers and Aboriginal communities to investigate key aspects of Aboriginal knowledge and culture that communities see as reflecting the curriculum needs of Aboriginal students, as well as the effective digital tools that would enhance and extend the delivery of the curriculum. Working collaboratively with members of the communities that have the Internet high school classrooms, the research team used a participatory research framework to negotiate the research process and its implementation. The study focused on the relationship between and among university-based researchers and Aboriginal communities for the purpose of providing research-based educational programs that are significant and sustainable for Indigenous children. To develop and sustain the university-community partnership, the research focused on valuing and engaging multiple perspectives for a mutually beneficial collaborative partnership. The study has documented what Aboriginal people perceive as top community priorities for their children's high school education, and proposed strategies that would help close the achievement-gap between Aboriginal and Canadian mainstream students. Information technology scholars argue that technology and the social are inseparable and mutually constituted and that responsive, well-designed technologies empower users. When digital systems are used in Indigenous societies for educational purposes, models need to be negotiated, and their implementation tested against the needs of the local inhabitants. Conventional Eurocentric models that fail to measure themselves against the development needs of the people for whom they are intended may be inadequate. This paper looks more closely at the alternative research strategies; the understanding of power relationships; the prospects for collective learning; and the production of knowledge that is linked to new innovations in learning. The paper concludes that genuine and authentic research projects should be collaborative and decisions need to be negotiated and their implementation carried on with the wishes of community members.

Keywords: *Traditional culture, technology, university-based research, fly-in Aboriginal communities, collaboration*

1. Introduction

The four concepts—university-based research, technology, culture and Indigenous community schools that bear the title of this paper are not easy bedfellows. Implicated in these concepts are not only paradox but also linkage between different processes. The

processes of university-based research and technology are inevitably interrelated. However, they are distinct from culture and Indigenous communities. Culture and Indigenous communities have not been explicit at the centre of university-based research agenda (Agbo, 2010). The university-based researcher conducts research in Indigenous societies with the cultivated indifference that apparently underlies tradition and sees cultures other than that of the academic culture as a ground of social contest, largely unequal in which the university-based researcher gains or retains control over the research process. Thus with some exceptions, university-based research does not simply benefit traditional societies. What is needed is research that will distinguish the conditions under which traditional societies are more and better able to change themselves from those that put them at the mercy of forces beyond their control. In the present study, university-based research and technological innovation are important components in the selection of criteria in formulating learning content and the corresponding learning goals for fly-in Aboriginal communities in Northern Ontario, Canada. The study established some form of alternative that university-based research, traditional culture, and technology are distinct and also inevitably interrelated and can be dependent on one another through collaboration to enhance learning in Indigenous communities. The main purpose of this paper is to clarify the place of Indigenous culture and epistemology within academic research and how universities and communities can work together to enhance student learning. Concentration upon the general theme of this conference—“Education and New Developments” enables the place to examine the changes that are possible in enhancing relationships between universities and Indigenous communities. Most of this paper is devoted to the process of integrating research, traditional culture, and technology to enhance teaching and learning in Indigenous communities.

2. Objectification of Indigenous Cultures

The conceptual priorities of university-based research can be found in positivism and objectivism, and therefore the capacity for open dialogue or collaboration with Indigenous cultures becomes estranged (Palmer, 2000). The current orientation towards technological knowledge has posed a search for concepts that will genuinely apply to all societal types in the contemporary world. Research in Indigenous communities around the world has been on the attack as representing academic thought that alienates culture and Indigenous societies (Agbo, 2010). In one respect, then, university-based research in Indigenous communities merely enjoys the status of satisfying the research needs of the researcher. The linkage between the university researcher and Indigenous communities has been succinctly stated by hooks (1990) as a set of conditions under which forms of theory, data, and analysis fail to measure themselves against the needs of Indigenous peoples and Indigenous voices eliminated from research findings:

No need to hear your voice when I talk about you better than you can speak about yourself...only tell me about your pain. I want to know your story. And then I will tell it back to you in a new way. Tell it back to you in a way that it has become mine, my own. Re-writing you, I write myself anew. I am still the author, authority. I am still the colonizer, the speak subject, and you are now the centre of my talk (p. 153).

Set against this backdrop of university-based research culture that attempts to replace a qualitative unit by a quantitative variable as the unit of analysis, it is clear that Indigenous societies are accorded a marginal status, that is, the status of the “Other”.

The temporal restrictions, placed upon culture and collaborative research by universities constitute a conservative step in social science research. In what follows, I provide the conceptualization of the vital relationship between university-based research and technology on one hand and Indigenous culture on the other.

3. Integrating University-based Research, Tradition, and Technology

In contemporary times, collaborative research in Indigenous communities finds its strongest justification in recent discussions of consumers of change and technology (Kling, 1999, 2000; Bishop et. al, 2003). To provide a base for mutual reciprocal research relationships and to develop intercultural relations that advantage neither party and protect the interests of both the university researcher and the community, the present study negotiated the research relationships with the wishes of the local inhabitants. In participatory research terms, this amounts to the researcher preparing the grounds for invitation from the community that is, exploring the potential for developing new forms of working relationships that are based on mutuality and the development needs of the community. In contrast to traditional social science research paradigms that allow little or no space for the culture and protocols of the host community, the present study acknowledges community cultures and protocols in equal terms with the research agenda. Accordingly, for real community service to occur, researchers cannot enter into communities simply as objects to be studied, controlled, and manipulated (Hall, 2010; Agbo, 2010). The recent emphasis on qualitative methods of research will make considerable advance of knowledge if particular attention is paid to the concrete as opposed to purely analytical relations between university researchers and other cultures. Among the most important criteria of the capacity to integrate university-based research and traditional culture are: 1) the origins of the issues, 2) the functions which those concerned with the issues play in the process, 3) the concentration of the strategy in the context of the moment, 4) the understanding of power relationships, 5) the prospect for organizing for collective learning, and 6) the production of knowledge that is linked to action (Agbo, 2012).

4. Origin of the Issues

Existential changes connected with the information and communication technologies in Aboriginal communities have brought critical attention to integrating Aboriginal cultures and Eurocentric education (Agbo, 2010). The current orientation towards a more all-embracing and less close-minded form of education for Aboriginal people has thrown up the latent challenges to utilize modern technologies in remote, fly-in Aboriginal communities in Northern Ontario in Canada. One of the most important of such challenges is the question of how Aboriginal student achievement measures up with the mainstream Canadian counterpart, a problem that the Canadian government expected to be solved by means of assimilating Aboriginal students into the mainstream, but which has been intractably resisted.

In Ontario's far north, many of the students from isolated fly-in Aboriginal communities are sent out to high schools at the tender age of about 13 in the cities and urban centers that are usually between 700 to 1000 kilometers away from their communities. Most of these students drop out to return to their communities. Those who return home carry with them a variety of social problems including drug and alcohol use. The communities lack the resources to deal with the problems of the drop out students. In response to the growing numbers of dropouts back in their communities, Northern Chiefs Council, a tribal council in Ontario's far north established an Internet High School in 1999. The chiefs mandated the creation of a pilot project to determine whether the Internet could be an effective tool to deliver education. The purpose of the project was to find a way for ninth and tenth grade students to remain at home in their community while learning accredited high school courses via the Internet.

5. The Research Process

The research strategy employed in the present study attempts to move research from that of a specialized elite tradition to one that integrates different ways of knowing and varying worldviews (Hall, 2010). This strategy reveals the importance of valuing and engaging multiple perspectives to develop and sustain mutually beneficial collaborative partnerships that highlight research-focused community-based education projects (Agbo, 2012). The participatory research utilized in the present study supports the inclusion of university faculty, community leaders, and students becoming actively engaged in researching teaching and learning. The present study focuses on the relationship between and among the stakeholders involved in collaborative community-university partnerships for the purpose of providing research-based educational outreach programs that are significant and sustainable for Aboriginal students.

Hall (2010) draws the distinction between traditional models of research where communities are viewed as recipients of knowledge and community-university research partnerships where “[t]here is a new relationships between institutions of higher education and their communities being negotiated through practice” (p. 282-283). Brown, et al. (2006) identify mutual trust and respect, open communication among all partners, shared goals and values, and the understanding of power relationships as the most important components in university-community collaboration.

The notion of collaboration in the present study hinges on dialogue. Gadamer’s (1986) concept of fusion of horizons favours open dialogue in which each party accepts that the understanding of each other as well as understanding oneself. Gadamer renounces the notion of objectivity and absolute answers based almost exclusively on an elite experience. Similarly, in searching for an acceptable as well as legitimate way of dealing with otherness, Freire’s (1970) concept of dialogue fused with problem posing is significant for collaboration between the university-based researcher and Indigenous communities. As Freire writes:

Since dialogue is the encounter in which the united reflection and action of the dialoguers are addressed to the world which is to be transformed and humanized, this dialogue cannot be reduced to the act of one person’s ‘depositing’ ideas in another, nor can it become a simple exchange of ideas to be ‘consumed’ by the discussants (p. 77).

Freire (1970) further argues that “Without dialogue, there is no communication and without communication, there can be no true education” (p. 81). Thus to encourage critical thinking and action, the present study adopted Freire’s concept of dialogue.

6. Conclusion

In recent times, the terms participatory research or collaborative research have come to be frequently used with the suggestion, sometimes explicit, sometimes implicit that participatory research pertains to practice and therefore unqualified to be academic. This paper is a call that represents a reaction against university-based positivistic or scientific methods of research in Indigenous communities. The premise for this call is that scientific modes of research in Indigenous communities fail to come to grips with the cultural reality of the people who figure in the research (Agbo, 2010). The implication of meaningful and relevant research relationship between Indigenous communities and university-based researchers are that decisions, data collection, data analysis and action projects should be based on genuine attempts at developing mutual understanding rather than the university-based researcher playing the cult of the “expert” with an objectified analysis of the Indigenous cultures. Genuine and authentic research projects should be collaborative and decisions need to be negotiated and their implementation carried on with

the wishes of community members. Arguably, part of the orientation that participatory research has brought about in the social sciences is the emphasis on the origin of the issues, process, and criteria of understanding rather than the traditional stress on objective knowledge that depends on object-like relations between the researcher and that which is to be researched. An important premise of participatory research is that for real understanding to occur, other cultures cannot be simply seen as objects to be experimented and studied. Clearly, the notion of university-based research in Indigenous communities must remain closely linked with collaboration and dialogue. The processes and outcomes of research such as data collection, data analysis and knowledge creation remain unaltered by such conceptualization. It should be noted that while research may well imply, as well as require increasing rationality, this could be found more in the procedures used to collect or analyze the data and should not constitute a judgment as to who contributed to the knowledge creation process. It is here particularly that the conceptions adopted in the present study differ from those most commonly used. In close proximity to this tendency is the suggestion that academic research represents a single, final state of research type, the type of research to be found in laboratories which everyone should try to emulate and which only scientists could reach.

References

- Agbo, S.A. (2012). Conformity and rationality in Indigenous schooling: The education situation on First Nations reserves. *Interchange, A Quarterly Review of Education*, 42(4), pp. 333-362
- Agbo, S.A. (2010). The University-based researcher in Indigenous communities: Participatory research as a dialogue for redefining the “Other” in university-community relations. In Inman, P. & Schuetze, H. (eds.), *Community engagement and service mission of universities* pp. 181-196. Leicester, U.K.: NIACE Publications
- Bishop, A. P., Bazzell, I., Mehra, B., & Smith, C. (2003). Participatory action research and digital libraries: Reframing evaluation. In A. P. Bishop, N. A. Van House, & B. P. Battenfield (Eds.), *Digital Library Use: Social practice in design and evaluation* (pp. 161-189). Cambridge, MA: MIT Press.
- Brown, R. E. et al., (2006). The transformative engagement process: Foundations and supports for university-community partnerships. *Journal of Higher Education Outreach and Engagement*, 11(1), 9-23..
- Freire, P. (1970). *Pedagogy of the oppressed*. New York: Seabury Press.
- Gadamer, H. (1986). *Truth and Method*. New York: Crossroads Publishing.
- Hall, B.L. (2010). Towards a new architecture of knowledge: The Office of Community-based Research at the University of Victoria. In Inman, P. & Schuetze, H. (eds.), *Community engagement and service mission of universities* pp. 277-292. Leicester, U.K.: NIACE Publications
- hooks, B. (1990). *Yearning: Race, gender and cultural politics*. Boston: South End Press.
- Kling, R. (2000). Learning about information technologies and social change: The social informatics. *Information Society*, 16(3), 217-232.
- Palmer, P.J. (2000). Learning communities: Reweaving the culture of disconnection. *Washington Center News* (Spring) pp. 34.

SIMULATION-BASED LEARNING FOR CONVEYING SOFT-SKILLS TO XL-CLASSES

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Abstract

Soft skills have become more important in higher education in order to prepare students for employability in later career. In XL-Classes, the theoretical conveyance of soft skills to students presents a special challenge. One approach for the application of theoretically imparted knowledge in practice is the concept of simulation-based learning. Simulations have been used for a long time in a variety of disciplines, particularly in high-risk areas such as medicine, aviation and space industries, using virtual environments to prepare professionals for real life situations.

The term 'simulation-based learning' is particularly used in medical education. Approaches of simulation-based learning are increasingly used by other disciplines in the context of higher education and the education of students. Based on a definition of the term 'simulation-based learning' a concept to convey soft skills in higher education courses is developed. A practical implementation of the concept is demonstrated in the paper by using it in the XL-Class "Communication and Organizational Development" for students in the bachelor programme Mechanical Engineering at RWTH Aachen University. Here, the foundation of an enterprise in the automotive industry is simulated within 1.5 days. Key skills such as team building, time management and project management are applied, experienced and trained in the simulation. Overall, 600 students pass an organizational development process in which they establish a fictional automotive company with various departments, develop target systems as well as business strategies and construct an innovative car prototype. The basic knowledge for the realization of this task is mediated via microteaching units. Therefore the developed concept transfers soft skills knowledge to students by experiencing and training them in a simulated environment.

Keywords: *Simulation-based learning, XL-Class, higher education, soft skills*

1. Introduction

In order to promote students' employability in later career, soft skills have become more important in higher education. The transfer of soft skills especially within engineering degree programs is indispensable (VDI-Ingenieurstudie, 2008). Professional and certified knowledge is not the only required output of higher education, soft skills like method-, self-, organizational- and social competences are also expected from graduating students nowadays (Pankow, 2008). As a consequence, the higher education system has to face this challenge. The already emerging change in the design of teaching focuses on 'learning outcomes', the students' learning results and the way of achieving these results. The more student-centered and involvement-oriented design of teaching, the so called 'shift from teaching to learning' (Wildt, 2003), is preferred over 'content-oriented' approaches. This is a major challenge for large-audience classes, the so-called 'XL-Classes', especially when soft skills have to be

learned and applied in practice. In this case, classical teaching no longer fulfills the learning outcomes, as the application of theoretically imparted knowledge falls short to convey any practical relevance for future professional life. One approach for the application of theoretically imparted knowledge in practice is the concept of simulation-based learning (SBL). Simulations in general have been used for a long time in a variety of disciplines, particularly in high-risk areas such as aviation, space industries and medicine, using virtual environments to prepare professionals for real life situations (Abdulmohsen, 2010). Their application in medical education is described below resulting in a particular definition of the term ‘simulation-based learning’ and in the development of a concept for university education, using the example of a laboratory training, called ‘KOE-Labor’, at the Center for Learning and Knowledge Management (ZLW) at RWTH Aachen University.

2. A definition of simulation-based learning

The term ‘simulation-based learning’ is particularly used in the context of medical education and can be outlined in its use in this area. The transfer of practical skills, as the most common learning objective (McGaghie et al., 2009), has become an important part of medical education. SBL emerges as an appropriate teaching approach for practical and soft skills training in medical education, since research in medical education shows that the development of communication skills should not be separated from the curriculum, as it is only effective in combination with clinical knowledge (Barlow et al., 1999; Benbassat & Baumal 2002 quoted from: Jünger & Köllner, 2003). SBL offers a practical and helpful tool for deepening medical students’ knowledge, skills and attitudes, while protecting patients from incorrect diagnosis or treatment (Ziv et al., 2003). It also addresses the communication competency in doctor-patient-interaction, which is a crucial soft skill for a clear imparting of diagnosis to patients and relatives.

Abdulmohsen (2010) defines simulation as a generic term that refers to an artificial representation of a real world process to achieve educational goals through experimental learning: “Experiential learning ... is an active learning process during which the learner constructs knowledge by linking new information and new experiences with previous knowledge and understanding” (Abdulmohsen, 2010, p. 36). Simulations in general are considered as situations, in which a certain set of conditions is artificially generated in order to create real-life experiences (Abdulmohsen, 2010). Concluding “simulation based medical education can be defined as any educational activity that utilizes simulation aides to replicate clinical scenarios” (Abdulmohsen, 2010, p. 36). Regarding the implementation of SBL in university didactic, the following definition is derived: SBL is a didactic approach for the active training of practical skills in a constructed situation. The active learning process creates experience-based learning outcomes, which prepare the learners specifically for their future performance in real situations in a professional context.

3. A concept of simulation-based learning in higher education

The outlined approaches of SBL in medical education can be transferred to other disciplines in higher education. Based on the definition of SBL stated above, a didactical concept for the transfer of soft skills in higher education is derived.

The didactical concept is developed for its use in an environment close to reality with face to face-situations. Initial point of the simulation is a complex problem or an overall task, which is structured in separate stages and embedded in a realistic background story of a professional context. A class of students, which is divided in subgroups, experiences a realistic situation in time lapse. The students act as agents in the simulation and are challenged to solve problems in their subgroup in order to prevail against the competition. To solve tasks, students must activate and apply

theoretical knowledge from the lecture. The separate stages should be consecutively structured, so that students have to repetitively apply skills and competences acquired in the simulation to solve the problem successfully. Therefore a continuous learning process is initiated that leads to an even higher learning success.

The different simulation stages and problem elements stimulate communication and team processes, which promote soft skills like communication-, teamwork- and problem-solving-skills. The features professional context, team training, skill acquisition, deliberate practice and feedback, identified by McGaghie et al. (2009) are the key features of simulation based learning. As an element of simulation, the team development process makes an important contribution towards the 'learning outcomes'. The initial divided subgroups meet each other during different stages of the simulation. Through the extension of the groups at different stages, the whole class of students is united again at the end of the simulation. One key element of the team development process is the definition of each role within the team, which should be made transparent to all participants. In order to create turbulences within teams, agents are purposely substituted because by mixing up students to new and different teams, new situations evolve and the ability to work in a team is fostered. Like in the real world, the subgroups receive predefined and standardized instructions with a limited number of information and a limited time frame to carry out their task. Strategies for problem solving should be independently developed by the subgroups. Each task stage should be followed by a period of reflecting, modeled after Kolb's Learning Cycle (Kolb & Kolb, 2005). Therefore debriefing after a task as well as feedback, where the groups reflect upon their group performance in the last stage, plays a crucial role in the simulation (McGaghie, 2009).

Overall, coaches play a central role in SBL. They assess the progress, diagnose problems, provide feedback and evaluate overall results. For a successful implementation of simulations, coaches need to undergo intensive training. To experience the learning process at firsthand, coaches receive a detailed speeded up training on learning contents and objectives in a separate training for them.

Simulation-based education provides opportunities to train soft skills in a risk-free environment by giving and receiving direct feedback and learning from mistakes (McGaghie et al., 2009). Traditional teaching, such as frontal lectures, should not be replaced, but rather complemented by SBL in order to integrate soft skills and their practical application in teaching.

4. The practical example 'KOE Labor'

The concept of SBL as stated above has been transferred to other disciplines in higher education by the ZLW. This best practice example of SBL in higher education takes place in the education of mechanical engineers at RWTH Aachen University. Within their first semester, students attend the compulsory lecture 'communication and organizational development' (KOE) for engineers. This lecture is mainly designed as a traditional classroom lecture with almost 1200 students. As mentioned above, the practical application of soft skills is a challenge for XL-Classes. Therefore, in addition to the lecture, a simulation-based laboratory tutorial of 1.5 days for small groups of about 35 students is implemented, where they practice the application of the lecture content 'communication and organizational processes'. This laboratory format is based on a simulated company start-up in the automotive industry in face-to-face situations with other students. In the scenario of this competition organized by the chamber of commerce and industry (CCI), 600 students per date go through a process of organizational development by founding a fictitious company with various departments, developing target systems as



well as business strategies and constructing a prototype of an innovative automobile. The learning environment is characterized by a fictitious but nonetheless realistic situation and certain challenging tasks, like real-world problems for example communicational challenges, new and unexpected information and demands, limited information. The basic knowledge for the realization of tasks is mediated via microteaching units (Brall & Hees, 2007).

On the first day of the laboratory, lecture content is repeated and deepened by the practical application. The students have the task to develop an innovative concept for a one-day introductory tour for first semester students, which they have to present at the end of the day. Collaboration in teams fosters their teamwork ability, the ability to co-ordinate tasks, to delegate assignments, to set goals and develop their presentation skills through the presentation of the concept in front of the other students.

On the second day, the students found their own company in three stages: company development; internal set up of departments and coordination with other departments; planning and implementation of an automobile prototype which serves as a discipline specific content. In the first phase, the students develop a general and organizational concept for their company. This includes a model, an organizational structure and identity as well as the process of communication.



The departments design, construction, body construction and marketing departments are established in the process. In the second phase, the previously founded departments define their tasks and objectives in order to be able to coordinate communication channels and the cooperation of the separate departments. The third and last stage of the company foundation is about planning and constructing the prototype. The planning phase is essential for the future construction of the prototype. In this stage, the plan for the construction is specified, as the students develop project-, time- and action-plans which determine who performs which task when and how the departments should communicate and cooperate with each other. The subsequent constructing phase shows how effective the previous phases were. During this phase, they develop a marketing concept that is presented together with the prototype afterwards in front of the competitors.

At the end of the simulation, all prototypes are presented at the market place and are judged according to the criteria of technical innovation - regarding engine, equipment, sustainability, quality of workmanship and design - as well as the presentation according to the criteria of professionalism and creativity and the communication and organizational processes. These processes are of an essential importance for the detailed phases of the business formation. Communication skills, team building, time and project management, decision making and organizational skills are promoted. During the simulation, the students are supported by specially trained coaches in an advisory role, who bring the students out of the simulation into a meta-level reflecting the process in terms of communicative, collaborative and organizational aspects. Supported by the respective coach, central learnings are recorded and visualized on posters for future stages. During the reflection process the coaches provide professional feedback concerning the performance of the group in the last stage. This feedback provides specific recommendations of actions for the next phases and reflects the self-perception of the group through the extrinsic perception of the coach. Apart from the direct effect of the feedback the coach indirectly influences the students as a role model by giving them professional feedback according to predefined rules. This also fosters a learning effect on students' feedback ability. Reflection and feedback of ongoing group processes foster a gradual competence gain from stage to stage. The simulation sensitizes the students' necessity of structured communicational and organizational processes. The relevance of these processes in the real working

environment and the relevance of the lecture content become apparent for the students. Even the processes become shapeable by the individual experience in small groups. The developed concept transfers soft skills knowledge and practical application to the students through experience and trains them in a simulated environment. Based on experience and the run through business simulation, awareness for relevance of soft skills in daily routine is fostered.

5. Outlook

The concept of SBL is especially suited for the integration of practical competencies and soft skills in lectures in the field of higher education. In the case of lectures with large-audience, SBL serves as a concept to impart and apply practical skills. The evaluations of the KOE-Labor since 2007 show that the integration of SBL in the first semester is to be regarded as critical. To be able to draw on basic knowledge and existing experiences, fundamental course contents as well as practical knowledge from traineeships and scientific activities must be existent. Therefore, while designing a lecture based on SBL, the integration in the curriculum should be considered to be imbedded later on in the curriculum, when students have completed the orientation period. Simulation-based education should be scheduled and executed throughout the curriculum in order to increase the practical relevance sustainably, and combined with other educational methods such as problem-based learning, practice modules, laboratory work and others (McGaghie et al., 2009). For the purpose of constructive alignments, more attention should be paid to the interconnection with the lecture as well as with the examinations at the end of the semester. Also an assessment concept, which examines the soft skills directly during the simulation, should be developed.

According to the subject, increasing the fidelity of the settings is reasonable. For example this can be done in virtual or remote labs. Virtual and remote experiments allow experiments that are not possible in reality due to increased risks and financial reasons. Furthermore, through the experimental approach to abstract topics experiments provide access to "hands-on" experience.

References

- Abdulmohsen, H. (2010). Simulation-based medical teaching and learning. *Journal of family and Community Medicine*, 17, 35-40.
- Brall, S., Hees, F. (2007). Effektives Lernen mit Kurzlerneinheiten. *Kompetenzentwicklung in realen und virtuellen Arbeitssystemen*.
- Jünger, J., & Köllner, V. (2003). Integration eines Kommunikationstrainings in die klinische Lehre. Beispiele aus den Reformstudiengängen der Universitäten Heidelberg und Dresden. *Psychother Psych Med*, 53 (2), 56-64.
- Kolb, A. Y., Kolb, D. A. (May 15, 2005). The Kolb Learning Style Inventory – Version 3.1 2005 Technical Specifications. Retrieved May 2, 2013, from <http://www.whitewater-rescue.com/support/pagepics/lsttechmanual.pdf>
- McGaghie, W., & Issenberg, S. B., Petrusa, E. R., Scalese, R. J. (2010). A critical review of simulation-based medical education research: 2003-2009. *Medical Education*, 44, 50-63.
- Pankow, F. (2008). *Die Studienreform zum Erfolg machen! Erwartungen der Wirtschaft an Hochschulabsolventen*. Berlin: DIHK – Deutscher Industrie- und Handelskammertag e.V.
- Wildt, J. (2003). The Shift from Teaching to Learning – Thesen zum Wandel der Lernkultur in modularisierten Studienstrukturen. In Fraktion Bündnis 90/ Die Grünen im Landtag NRW (Eds.), *Unterwegs zu einem europäischen Bildungssystem*, (14-18). Düsseldorf.
- Ziv, A., & Wolpe, P. R., Small, S. D., Glick, S. (2003). Simulation-based Medical Education: An Ethical Imperative. *Academic Medicine*, 78 (8), 783-788.

THE REALIZATION OF A SPORTS EVENT AS A TOOL FOR THE DEVELOPMENT OF MOTOR ACTIVITIES FOR THE DISABLED

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Abstract

The difficulties involving the insertion of the disabled in sports and activities keeps growing. Disabilities, minor and major, concern one in six people in the European Union (EU); that is, about 80 million people are not able to fully participate in everyday social and economic life. (Communication from the European Commission-European Disability Strategy 2010-2020: A renewed commitment to a barrier-Brussels 2010).

The organization of events therefore becomes a movement of significant importance to which innovation and new identity is necessary.

Our research was based on the validity and the return of a sports event called "Una giornata abilmente...diversa" ("An ably diverse day"), dedicated to the disabled.

Three associations for the disabled participated in the event, as well as secondary schools of the commune Santa Maria Capua Vetere.

The event took place at the public pool of Santa Maria Capua Vetere on May 15, 2012 and saw:

- Recreational activities
- Activities linked to water autonomy
- Activities regarding lifesaving

Subjects without disabilities also took part in the events.

The analysis and the elaboration of the data, as well as a survey given to the disabled subjects, the operators, family members and managers of the associations involved in the event, found that such an initiative results in moments of true inclusion, and the possibility to take advantage of certain structures and therefore carry out physical activities.

The organization of the event demonstrated that the synergy between the players, the local organizations, the universities and schools, sports associations and social associations, can bring about moments of confrontation and development to allow the realization of a consolidated program for the physical activities for the disabled.

Keywords: *Event, synergy, disabled, motor activities*

1. Introduction

In the last thirty years, those who have found themselves or are part of the world of the disabled has taken part in a change in vocabulary. Each of these has symbolized the way in which the person was defined (handicapped, disabled, person with a disability) or the theoretic and operative thought that moved politics and the actions in favor of these people. So, in the 70's, the word was inclusion, in the 80's it became integration. In the last few years, thanks to the UN convention on the rights of the disabled of 2007, we have witnessed a new change: the new word is inclusion.

Sports is the gym of life, fundamental element in social and relational instruction, a time to meet and confront different realities. Sports bring together and aids the comprehension, characterizing the values of reciprocal respect and loyalty.

Sports become an instrument of insertion for the disabled, for those young people who, although having different capabilities compared to their peers, practice sports, and through this overcome the limits that destiny has given them.

The difficulties regarding insertion of the disabled in sports activities and environments is increasing.

The project "Una giornata...abilmente diversa" takes into consideration the needs of young people and of those in deficient conditions who are in an even greater need of participation, integration and socialization through recreational activities-sports that respond to their needs. Furthermore it aims to offer innovative instruments for both the cognitive learning and to strengthen the met cognitive sphere, as well as the recovering from the vast area of the handicap and unease.

One problem that affects society is without a doubt is that of protecting the disabled population. Intense sport, as a moment of pure fun, pleasure, or simply the will to play, represents a gratifying activity that transmits a feeling of wellness to the disabled and helps them in the acceptance and understanding of their limits, sometimes able to be overcome. Sports can contribute to developing social integration offering relationships with friends, adults, sports instructors, disabled and not, and constitutes an further evolving dimension in which the subject can experiment.

The dimension of Free Time represents an indicator of quality and today the quality of life is at the core of social health politics and, in the declaration of Madrid (2003), the European Union affirmed that "sports and free time are equal to school and work."

It is on this principle that sports activities should be thought of as a true form of integration; integration that has already been seen in other fields.

Disabilities, minor to major, affect one in six people of the European Union (EU), that is about 80 million people that often don't have the possibility to fully participate in social and economic life (Communication of the European Commission- European Strategy for the disabled 2010-2020: a renewed task for a Europe without barriers-Brussels 2010).

2. Design

The organization of events becomes a moment of significant importance. It is necessary to recognize new characteristics and a new identity.

In 2004, ISTAT conducted a study on people with disabilities that live in families to gather, on one hand, the social integration of the disabled in their social context (relationships, school, work, free time, etc.), on the other hand, the factors that create barriers for these integrations (Mobility limitations, lack of necessary support, etc.)

The world of the disabled, has experienced many transformations in the last 30 years, beginning in the 70's with a call for the renovation of the services and the interventions, and coincides with the first phase of devolution of the competence of the state to the region.

3. Objective

To make the community aware of the problems regarding the world of the disabled and the help that sports could give them, because sports is the only reality that does not create distinctions among its participants.

Understanding the psycho-physical and social disadvantage deriving from the condition occurring with "being handicapped" and that this situation can be overcome through the acquisition of a "different" culture.

We can highlight specific and instructional objectives.

-Instructional objectives are those to educate through aquatic activities; contribute to a balanced development of the personality (cognitive, emotional and relational areas)

-Specific objectives are those to educate to the water, through the acquisition of abilities in the following specific areas:

Autonomy in the water

- Learning swimming techniques
- Elements of water polo and synchronized swimming
- Fundamentals of life saving and under water swimming through understanding the aquatic environment
- Fundamental elements of assistance and first aid

4. Method

Twenty associations for the disabled and some secondary schools from the commune of Santa Maria Capua Vetere participated in the event.

The event was held at the public pool of Santa Maria Capua Vetere on 15 May 2012 and saw:

- Recreational activities
- Activities linked to aquatic autonomy
- Life saving activities
- Subjects without disabilities also participated in the events.

The participants were gathered and divided into equal groups, considering age and disability.

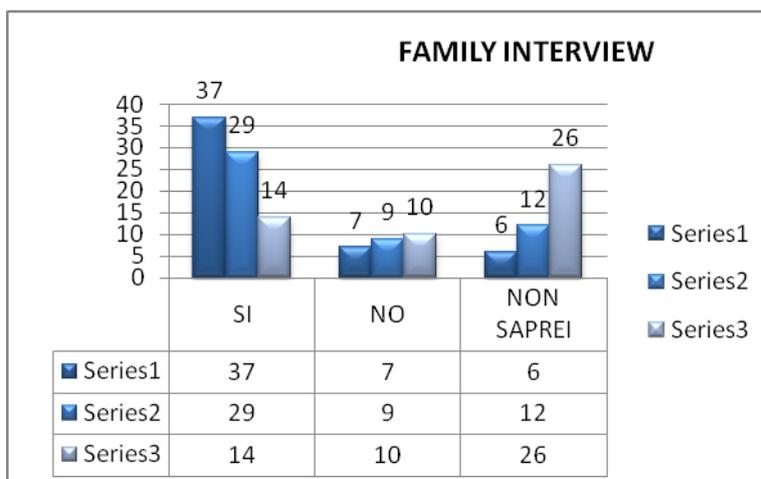
Each group was guided by 5 operators and the activity coordinator.

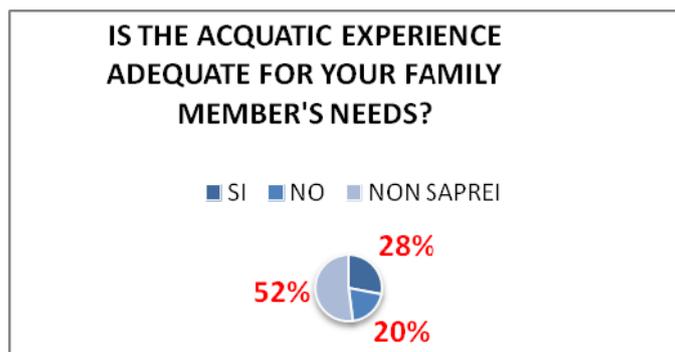
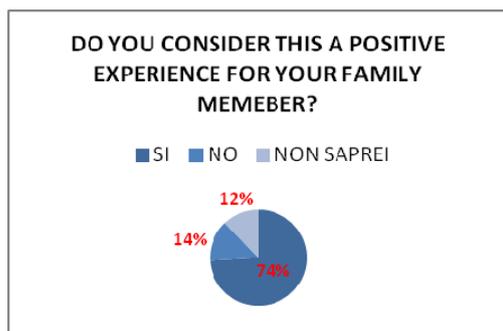
All groups carried out the following activities:

- Swim competitions (long pool)
- Aquatic games (12 x 8 mt pool)
- Games aimed in the acquisition of motary patterns (10 x 6 mt pool)
- Therapeutic treatments (pool for motary rehabilitation)
- Activities aimed in the autonomy in deep water and understanding of the principle motions for assistance and life saving techniques.
- Discussion

Two interviews were handed out, one for the families and one for the disabled subjects, structured on three questions

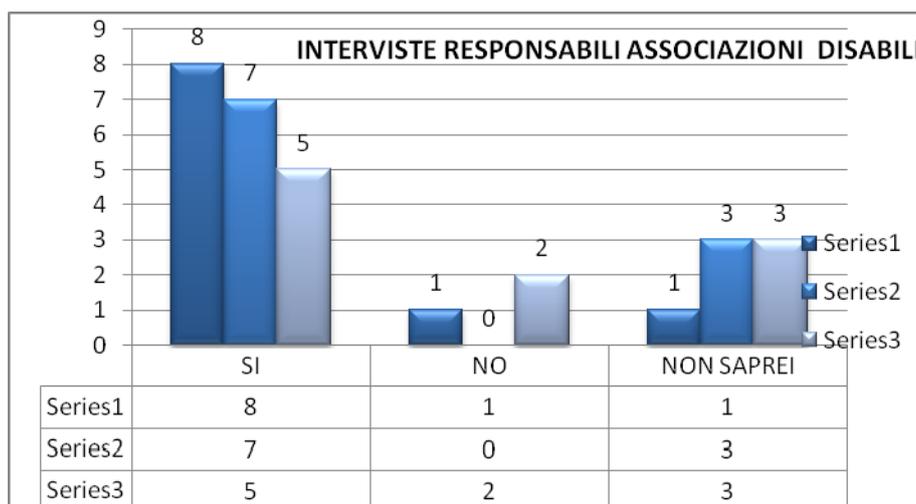
Family Interview			
Question	Yes	NO	Doesn't know
Do you think this was a positive experience for your family member?	37	7	6
Can such events favor the social autonomy of the disabled?	29	9	12
Do you consider the aquatic experience adequate for your family member's needs?	14	10	26

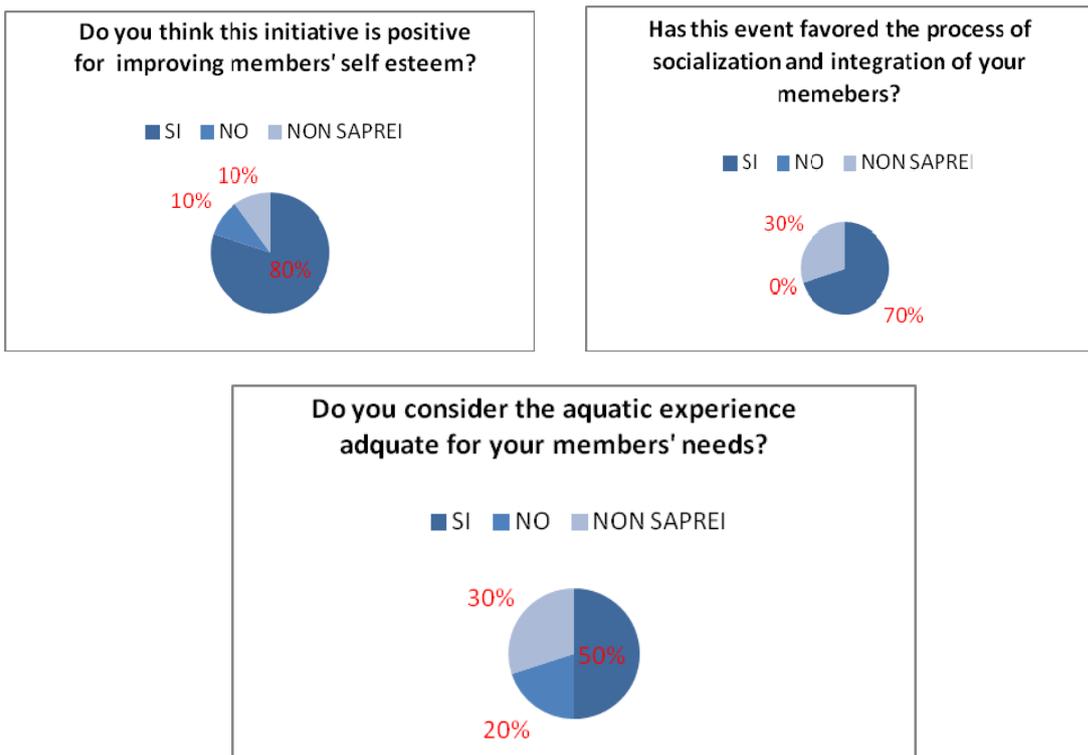




And one interview was handed out to the directors of the associations of the disabled participants, always based on three questions.

Interview directors disabled associations			
Question	Yes	No	Doesn't know
Do you consider this initiative positive towards the improvement of your members' self esteem?	8	1	1
Has this event favored the process of socialization and integration of your members?	7	0	3
Do you consider the aquatic experience adequate for your members' needs?	5	2	3





The data collected shows a great interest and high percentages in activities of this kind, by both the families and the representatives of the associations of the disabled involved.

5. Conclusions

The data collected allows us to affirm that our hypothesis has been verified. In fact, the numerous participants, disabled and none, were active and positive. Both the family members and the representatives of the Associations were pleased with the event, but above all they saw a new way of easing integration and inclusion. It appears to be evident that the regular reoccurrence of these events are the weak link of our project, but at least we were able to prove the validity of such an event. We can highlight as a strong point:

The Association ACFFADIR (association for parents of the autistic), which, following this event, asked for biweekly meetings for their members to carry out and practice aquatic activities. It has almost been one year that 11 autistic subjects routinely attend the swimming facility of Santa Maria Capua Vetere.

References

- L'integrazione sociale delle persone con disabilità – 2005 ISTAT - 2004
 Napolitano S.,(Ed. Liguori) (1999) *Teoria, tecnica e didattica delle discipline natatorie*.
 Naples
 AA VV.(EGA Edizioni Gruppo Abele) (2006) *Handicap? Anche noi giochiamo! Giochi e attività per disabili*. Rome

SPORT COLLABORATION AS A TOOL IN CULTURAL DIVERSITY: THE EXPERIENCE OF A NEAPOLITAN PRIMARY SCHOOL

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Abstract

Text our society is presented with propaganda of aesthetic standards nearing perfection, exalting models of efficiency based on the excellence of the results of their competitive capacity, on the maniacal and narcissistic exhibition of winning models, especially in the world of sports where clearly the disabled are excluded.

From this collective knowledge comes the idea to create activities within the school system that foresee the reality of disabilities.

The experiment was carried out in an institute in Naples and involved two fourth grade classes, twenty students per class. Controlled recreational activities were introduced, where body movement and motor skills were limited.

The goal of the project was to create a spontaneous relationship between children with normal abilities and those with handicaps.

Adequate athletic activities were carried out, under form of recreation, guided by a teacher, necessary to carry out the tasks: children without disabilities were put in a position where they were able to live the disability of another child.

The results of the data collected through the systematic observation and that of a survey show the predisposition of the child without physical impairments with regards to the disability, eliminating through a natural process the concepts of "acceptance" and "tolerance" and the internal existence of two worlds.

This experience can surely be a starting point to create and elaborate the culture of diversity already at a young age.

Keywords: *Collaboration, primary school, motor limited activities.*

1. Introduction

Our society is presented with propaganda of aesthetic standards nearing perfection, exalting models of efficiency based on the excellence of the results of their competitive capacity, on the maniacal and narcissistic exhibition of winning models, especially in the world of sports where clearly the disabled are excluded. (Smith B. J., Tang K. C., Nutbeam D. – 2006)

From this collective knowledge comes the idea to create activities within the school system that foresee the reality of disabilities.

The experiment was carried out in an institute in Naples and involved two fourth grade classes, twenty students per class. Controlled recreational activities were introduced, where body movement and motor skills were limited.

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This experience can surely be a starting point to create and elaborate the culture of diversity already at a young age.

The role of the mediator of the group is fundamental for the equilibrium of the sense of competition that might occur.

“Instructive mediation becomes active instructive thought among peers when generated from the need to produce new knowledge even in children with minor physical and cognitive resources.” (Vigotskij 1999)

When it is necessary to create a collaboration among peers adding the difficulty of including a disabled subject, the instructor’s ability to create alternate recreational situations is fundamental. These allow the normal subject to develop and offer the best results capable.

2.Design

Taking this into consideration, it was decided to suggest our work be carried out in a elementary/middle school in Naples, attended by students coming from the same social economic and cultural environment, and having as participants two fourth grade classes (8-9 years), twenty students in each class.

This school holds standard, full hour classes, forty hours per week, that children attend from 8:45-16:15, Saturdays excluded.

Following the systematic observation, the team of teachers had seen and inadequate atmosphere among students and those with deficiencies.

Students with deficiencies present in the two sections are effected by motary deficiencies, one with Perthes disease, restricted to the use of a tutor for his legs, and the other is hemiplegic.

In both sections this program began as motary instruction from October to May during the two hours of physical activity as in the instructional ministry plan.

The program was proposed in different ways in the two sections. In fact, one saw adapted sports activities as its protagonists, while the other implemented the physical education program proposed by the ministry for primary schools.

3. Methods

Section A saw traditional programs involving individual and group sports and games was .

Section B saw recreational activities conditioned throughout weekly programs that involved activities carried out in a slow manner, where movements were closely monitored through systematic observation.

This allowed the students to inhibit the full expression of movement, having them become the actors of motary study, working towards the creation of new knowledge and the couple’s and group’s abilities limiting the use of one or more limbs, and moving solely and exclusively by crawling on the floor.

Exercises suggested were:

-Orienteering: create a course that will be realized with the use of gym equipment.

Such a course could be carried out in couples, but one of the subjects in the couple must be blindfolded. The time it takes to carry out the activity is not important, but its completion.

-Throwing the ball in couples and catching with one hand.

-Throwing the ball and catching w it with the help of an upside down cone.

-Throwing the ball in couples, limiting children’s movements to a circle.

-Throwing the ball in a group of 5-6 remaining seated inside a circle.

-Circuit training: a circuit composed of 4 work positions in which the students will rotate and perform the activities. Subjects must crawl from position to position.

The rules of the game indicate the correct execution of the exercises in the different positions, penalty points for errors, and the subject with the least errors is the winner.

There was no need to have the child with the disability rotate because all the students were forced to move with limited movements.

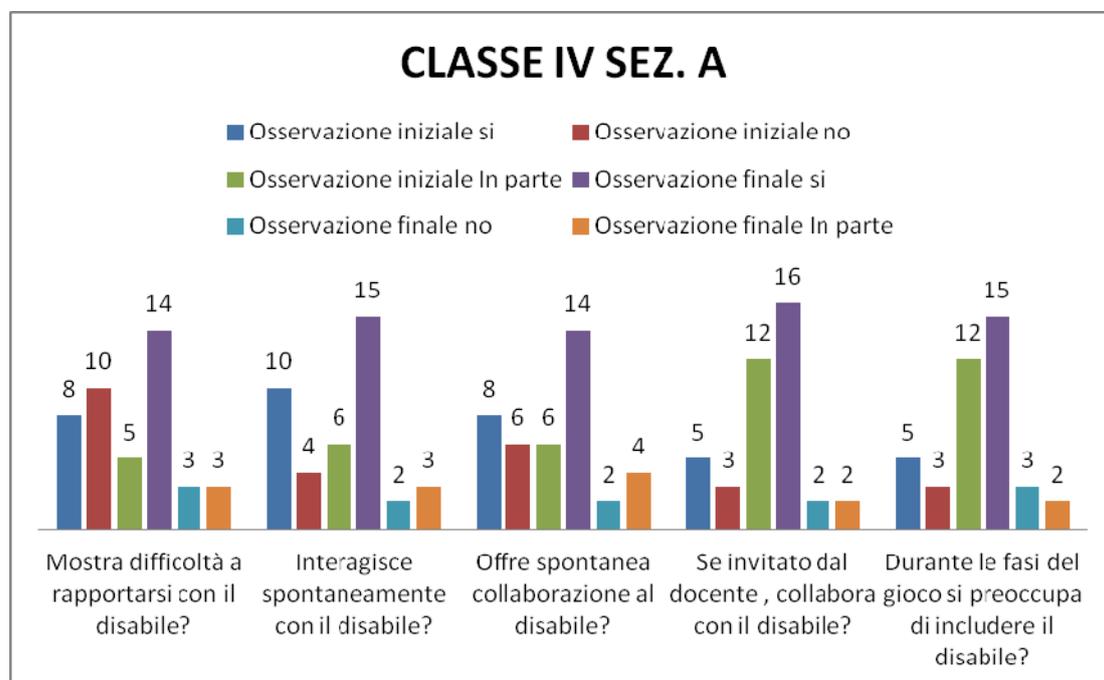
The purpose was to create problems and disabilities where there were none, limiting students' movements, aiming towards a better collaboration with disabled students and new initiatives regarding physical and sports activities. The possibility to impose limitations in each phase of the game in section B allowed the participants to respond at their best, and meeting all requests.

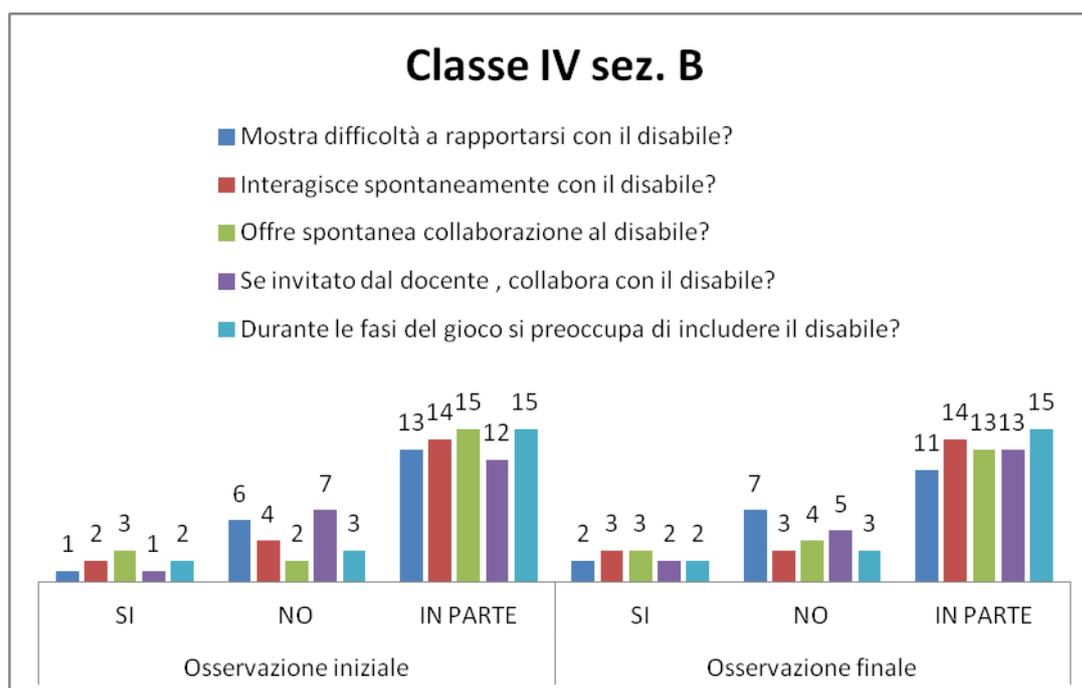
The motivation towards the study in finding new motary answers has given these students the possibility to create new motary stimulus, even in their disabled team mate, allowing him to participate not only in the idealization of the game, but also in its execution.

Contrarily, in section A, the disabled student did not find vast creative space due to classmates who were not trained in adapted sports activities and thus showing closure towards the disabled student, and preferring an individual game.

4. Discussion

During the implementation of the two work programs systematic observation was carried out, as well as circle-time and guided discussions that offered new ideas for teachers. Descriptors with evaluation tables were handed out upon entry and upon conclusion of the trial to compare the work in both classes.





5. Conclusions

A clearly positive result has emerged from the data collected.

We can see from the descriptors seen above how section B saw an increase in final positive results regarding all questions, almost twice the initial levels.

In section A it is clear that the level of negativity exists at the beginning of the study and persists until the end. In section A there were no changes in composure and attitude towards disabled students, who in some cases was also excluded from games for his inabilities.

Section B saw greater openness and acceptance of the students towards the disabled, creating a new kind of empathetic communication that enriched the class into one single group, without exclusions.

The concepts of "acceptance" and "tolerance" were abolished in a natural way, being open to different worlds.

Such an experience can surely be a starting point for the birth and growth of culture in diversity at a young age.

References

- Vygotskij L. (Ed. Laterza) (1999) *Pensiero e Linguaggio* – Bari
 Coakley J. J. (1994) *Sport in Society* - Colorado

SWIMMING ACTIVITIES FOR AUTISTIC SUBJECTS: THE EXPERIENCE OF A SPORTS ASSOCIATION IN CASERTA

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Abstract

Autism, originally called Kaner Syndrome, is considered by the international scientific community as an ailment concerning cerebral function. A person affected by autism displays a significant decrease in social integration and communication.

Aquatic motor activities involve a natural element (water) in a structured environment (public pool), according to a theoretic reference model and an organized methodology through phases, and uses cognitive, behavioral, and relational techniques and motor senses (Caputo G., Ippolito G., Maietta P., 2008). Our research was carried out at the public pool of the commune of Santa Maria Capua Vetere where a group of ten subjects affected by autism from the ACFFADIR Association, have been practicing aquatic activities for two years, with biweekly meetings. During these activities, the pool is also attended by subjects who are not affected by any ailments and by athletes in training.

The analysis of the research carried out through the systematic observation by the operators, the surveys of the teachers in the educational field, and the findings of family and social environment and the results of the surveys show given improvements on the social affective and relational level, and improvements regarding personal autonomy and self esteem.

Such an activity can, therefore, be considered a valid tool to favor the insertion and the inclusion of subjects affected by autism into the social environment.

Keywords: *Autism, aquatic activities, inclusion*

1. Introduction

Autism, originally called Kaner Syndrome, is considered an ailment affecting cerebral functions, appearing in infant years, which causes deficiencies in many areas regarding development, such as learning to speak and interact with people, social interaction, difficulties regarding verbal and non verbal communication, bizarre and repetitive speech, inappropriate facial expressions and gestures, comprehensive difficulties, repetitive and "stereotyped" behavior and limited interests.

Such symptoms, now mentioned in an international list of illnesses, DSM IV (American manual of mental deficiencies, translated into Italian by Masson editors) and ICD 10 (international classification of illnesses) by the World Health Organization, are seen even before the age of three and persist throughout the subject's life, together with the natural changes that occur with the coming of age.

At the root of the syndrome we find different organic deficiencies that modern biochemical research has progressively individualized, but many experts agree on the involvement of genetic and environmental factors.

The prevalence of the syndrome regards one case in 500 born (Filipek PA et AA. Neurology 22 August 2000, pp. 468-79).

Autism is presents with the same frequency in all races, ethnicities and social classes, though males develop the disorder with a higher frequency of about 3-4 time more frequent than in females One of the most recognized theories (Folstein S., Rutter

M: Infantile autism: a genetic of 21 twin pairs - Journal of Child Psychology and Psychiatry 18, 297-321, 1977), is that which states that many children are born with a genetic predisposition to the disorder that can later be stimulated by environmental factors. Research indicates that some genes, in particular hereditary and spontaneous mutant genes of DNA play an important role in the development of autism. But there isn't only one gene to accuse, as others also contribute and greater the risk.

Considering the variables regarding each individual case study, studies and research related to this field have characterized a common ailment represented by problematic knowledge, use and knowledge of the body. Based on this evidence we can already attribute an important role to the motary instruction in the process of an autistic child, especially in the first evolutionary phase regarding an instructional program aimed especially to the development on the levels of: autonomy, relationships and the ability to communicate.

2.Design

The aquatic environment is surely highly indicated in the carrying out of motary activities in various types of disabilities, when the activities are done as generic support or maintenance of motary functions, like in the cases of recuperation and conditioning of the locomotive and cardiovascular functions, and when it is used as therapeutic.

In recent years, swimming has become very popular in children with autism. Water facilitates keeping their attention, divided and undivided, offering intense sensory stimulation, easing emotional aspects thanks to contained emotion, eases behavioral ailments (aggressiveness, stereotypes), greatens eye contact, favors social integration, stimulates desire and exploration, promotes the growth of self esteem when movement autonomy in the water is gained and stimulates coordination abilities.

Swimming techniques are used to reach therapeutic objectives and to successfully activate a fundamental process of socialization and integration with the group of peers.

If the autistic subject already has a good relationship with water, and good water abilities, follows instructions and is autonomous in his movements, he/she can be followed pool side: if the autistic subject is afraid of the water, the instructor will preside in the water and accompany him in his exploration of a small pool, so as to favor his abilities and create empathy and trust (Belloni L., *Psicomitricità in acqua*, Erickson, 2007).

Motary water activities use a natural element (water) inside a structured environment (public pool), according to a theoretic model of referral and organized methodology through phases which uses technical, behavioral, relational cognitive, and motary senses (Caputo G., Ippolito G., Maietta P., 2008).

Objectives:

The main objective is that to bring the subject closer to and "meet" the water through recreational motary experiences and situations carried out at his own pace: we have worked on the familiarization with the environment and water abilities where the subject created a natural relationship with the water element, that allowed him to experiment new and different motary situations.

Another objective was that to favor the attendance in a social context, like that of a sports facility furnished as needed, and favoring social integration.

3. Methods

Our study was carried out at the public pool of Santa Maria Capua Vetere, with a group of 10 subjects, between 12 and 17, affected with autism belonging to "ACFFADIR" Association. They've been practicing for two years, with biweekly meetings during the months of September to July, with motary water activities carried out with an instructor 1:1 for 40 minutes each meeting. During such activities the

swimming facility was also attended by normal subjects and athletes in training. The intervention is focused on the role of the instructor, a tutor enabling the necessary abilities, not only of motary ability, but also educational and relational, and the person who will accompany the subject at a steady pace in the project, individualized and in agreement with the families.

The activities were planned based on gradual progression, individualized towards the goal of the objectives mentions, and adaptable lesson by lesson according to the subject's needs, keeping in mind the occasional and monetary moments of discomfort.

At the beginning, an individualized relationship was created, in order to create an empathetic relationship sharing simple and clear rules. In this, the instructor was able to build a trusting relationship with the student, becoming a reference point, a teacher with whom his water training would be pleasant and stimulating. The best environmental aquatic settings were researched in order to stimulate motary expression through emotions, looking for limited manifestations of negative behavior associated with the disorder. The methodology saw the use of small floating boards, air mats and floating games, instruments which represent stimulating support for the autistic subject. The sessions were divided into two phases; the first relating to the discovery and introduction of the aquatic facility (pool, water depth, pool side, locker rooms), introduction to the water element and guided exploration, first approaches to floating and phase regarding respiration and apnea.

The second phase occurs when the subject has reached a good level of security in the water and autonomy, has been passed into the deep pool, guided by the instructor who taught him supine and prone slides, propulsive forms, the different ways to move in the water and the different style techniques.

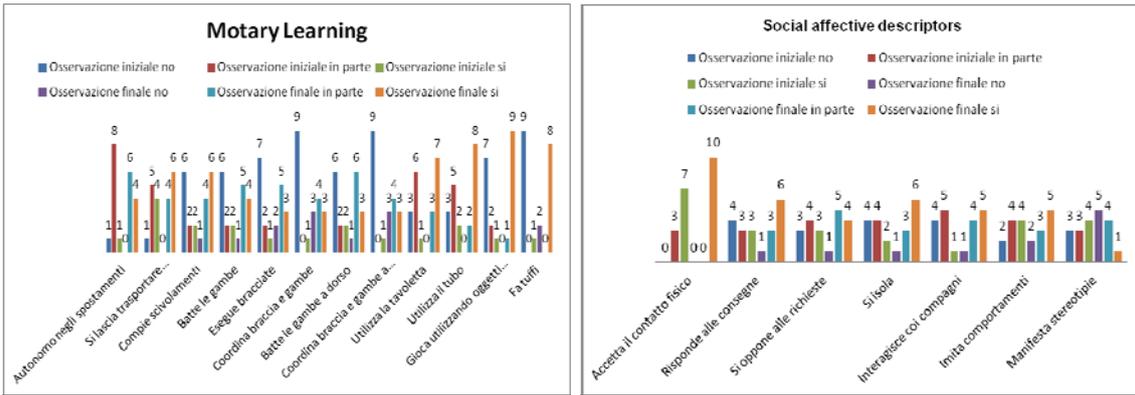
The instructor has also been careful to create an environment rich with trust and ease through reassuring tones of voice, expressions and movements.

To verify and evaluate the course of each single subject questionnaires with predefined descriptors relative to the motary and social effectiveness were given: these questionnaires were filled out at the beginning and at the end of the course by each instructor and by three teachers from the school attended by the subjects.

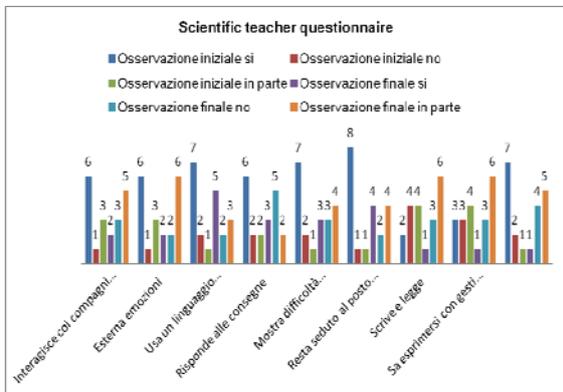
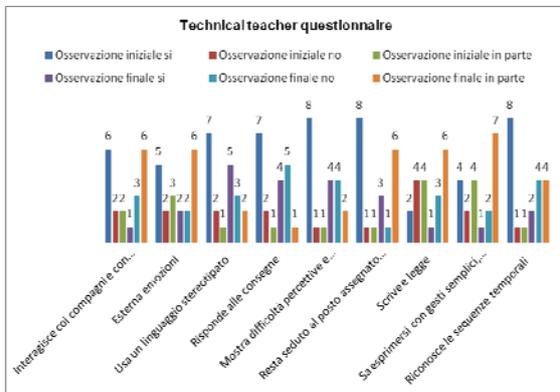
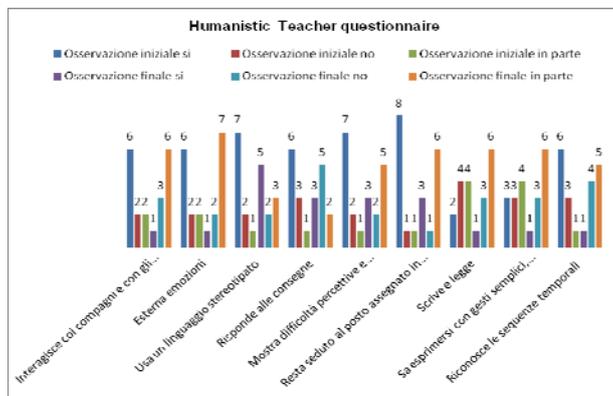
Each area is made up of an item to describe the different types of behavior and the eventual differences from the beginning to the end of the activity. Specifically, the instructors were faced with two tests for each subject regarding motary learning and social affective; the teachers (three from different learning areas for each subject) a questionnaire regarding the socialization and curricular learning; families were given a questionnaire regarding autonomy, emotions and family interaction.

4. Discussion

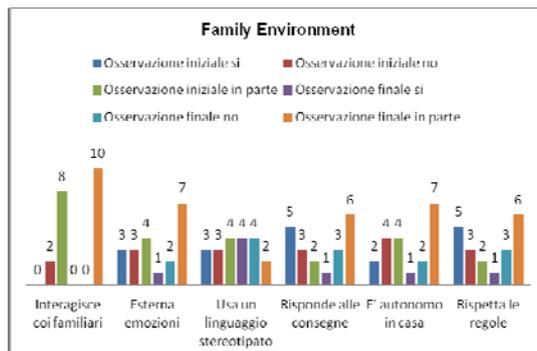
The data collected through the systematic observation and with the questionnaires give to the instructors, the teachers and the families, shows that subjects appear more independent, use the floating board more naturally, dive and have gained great interest for shiny floating objects; in the area regarding social effectiveness, the most relevant figure is that all have accepted physical contact, interacting with their peers.



The same results emerge from the teachers' questionnaires, confirming those resulting from the others, stating that the subjects are more able to express their emotions and feelings; perceptive and cognitive difficulties have also diminished.



Regarding the family, the most evident data regards heightened independence, improved interaction with family members with which emotions are expressed.



5. Conclusions

Swimming activities, thus, consider an improvement in the subjects involved, especially from the social and emotional stand point, personal independence (domestic activities-social, free time), in the organization of time in everyday life, in the classroom and outside the classroom, more interaction in group classes, notable improvement in scholastic and communication ability, learning principle fundamentals (reading/writing/calculations) and learning scholastic subjects (highly functional subjects), can be considered a valid instrument to favor the insertion and the inclusion of subjects with autism in all social environments. Comparing the data collected, and considering the three different aspects of the subjects' lives, with adults and with peers (this appears with a final figure plainly higher than the initial figure) an independence: this confirms that interaction and the ability to live interacting with others in different environments represents a fundamental factor in learning.

References

- Folstein S., Rutter M., (Journal of Child Psychology and Psychiatry 18, 297-321)
 (1977) *Infantile autism: a genetic of 21 twin pairs.*
 D. Ianes., M. Zappella (Erickson,) .(2009) *L'Autismo*
 Caputo G., Ippolito G., Maietta P., (2008).
 Belloni L., (Erickson,) (2007) *Psicomitricità in acqua*

THE VIRTUE OF AQUATIC MOTOR ACTIVITIES FOR THE DISABLED IN THE SCHOOL SYSTEM: THE EXPERIENCE OF A NEAPOLITAN SCHOOL

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Abstract

Educational activities that satisfy the needs of particular subjects, i.e. the disabled and reentry dropouts, play a significant role in the field of initiatives regarding the prevention and the recuperation of scholastic dispersion (G. Duclos- D. Laporte – J.Ross -2006). Our research regarded eighteen students and was carried out in a secondary school in Naples, situated in a peripheral part of the city where only private sports facilities are available.

The difficulty in finding easily accessible sports facilities increases the need among the disabled to practice sports activities.

The students carried out two hours of physical water activities from January to May in the public pool of Monterusciello (NA). They were followed by a special needs teacher, expert in the sport of swimming, and by the qualified personnel granted us by the facility. The activities were primarily recreational. During the activities the pool was attended by other subjects who did not have any disabilities and by athletes in training.

The analysis of the data collected, and the surveys given to the students, teachers, and family members, showed that the activities had a positive influence on the personal autonomy of the subjects, on a social level and showed improvements in scholastics as well. Furthermore, an increase in attendance was seen, from an average of 63% for the months of September-December, to about 85% in the months of January-May.

Such an activity can therefore be considered a valid educative tool, on hand for teachers of schools found in areas of social decay, favoring the inclusion of disabled and/ or destitute subjects.

Keywords: *Aquatic motor activities, disabled in the school, inclusion*

1. Introduction

Interventions for the prevention and recovery of scholastic dispersion and for the re entry of drop outs, for the development and integration of young people can be found in the field of instructional activities that fulfill their needs.

In fact the instructional project of a school must take into consideration the needs of the young and those students in disadvantaged situations that have an even greater need of participation, integration and socialization through recreational and sports activities that meet their expectations.

The social economic environment and the cultures which affect an instructional institution is varied and diverse: side by side students who are motivated towards studying and supported by their families throughout their instructional process, there are students belonging to economically and culturally deprived families coming from poor neighborhoods. The neighborhood seems to be an ever more agglomerate of non European citizens from a number of countries, above all from Africa; taken advantage of by their foremen to carry out agricultural work in nearby fields. A number of them are illegal immigrants, so they have never gone through a natural process of integration with the local people and therefore a proper education for minors.

The major issues are faced by students dealing with social relational challenges, a refusal and rebellion towards the instructional institution, and scarce attendance, a considerable issue. According to data collected from Istat, the scholastic dispersion in the neighborhoods is a complex phenomenon given by various factors linked to the cultural, social and economic status of each single adolescent. The latest Eurispes dated 2001 denounces an increase in scholastic dispersion, especially in high schools, while fortunately the phenomenon is less present in middle schools. One cause of this problem is the negative influence of family culture regarding the minor's choices: in the lower classes of a metropolitan city education is not fundamental for the growth of the adolescent and for a future in the work world.

Until the 80's, Pianura had been occupied by a small community of farmers that developed its economy around working the land: following the earthquake that hit the region of Campania in 1989, the population grew rapidly with a subsequent building development with no general local strategic plan: this is how the phenomenon of illegal building came about; a phenomenon that made Pianura the Italian quarter with the most irregular buildings and constructions. From that moment the social conditions of the city changed, characterized by families coming from other cities with unemployment problems, and thus causing a progressive degradation of the city in which a class of young people with no particular work interest and linked to the culture of temporary or illegal work, fertile ground for organized crime that began to influence the lives of the people of Pianura. The total lack of sports facilities does not allow the young people of the neighborhood, and especially the disabled, to participate in regular activities, increasing the need for integration and inclusion of such subjects.

2. Design

The idea to carry out swimming activities for some disabled subjects in a Neapolitan school comes from the fact that we want to offer the opportunity, in a neighborhood like Pianura (Naples periphery), lacking public sports facilities, to be able to practice sports to those who normally wouldn't be able to for social, economic and cultural reasons.

My interest takes life from the factor that besides being a teacher in a secondary school of the neighborhood in question, I have also found a bond with my work group who all shared the same progress in the discipline. From here comes the participation and interest of all those involved.

Such an activity, besides offering the possibility to control the damage caused by social disadvantages and the economic and family situations, it gives the opportunity, through sports, to benefit from the psychological and physical advantages otherwise impossible to them.

Swimming, as seen, aims toward the objective of inclusion for the disabled and defines crucial points for individual growth, through the peculiarities of the "old" but "different" element of water and new physical learning techniques.

Aquatic physical activity offered to disabled and disadvantaged students of a secondary school is significant as long as it offers innovative instruments for both cognitive learning and recovery in the vast areas of disability and disadvantage.

3. Objectives

We can individualize general training objectives and specific training objects: The general objectives are those to educate through water; contribute to the balanced development of the personality with aquatic activity (cognitive, affective and relational areas).

The specific objectives are those to educate through water, and through the learning of abilities on the following areas:

A) Autonomy in water

- B) Learning swimming techniques
- C) Elements of water polo and synchronized swimming
- D) Fundamental of life saving and under water swimming and through related knowledge of the aquatic environment:
 - A) Fundamental elements of assistance and first aid
 - B) Educate the practice of swimming in different environments (pool, sea, rivers, lakes)

4. Methods

The approach was that of research action.

The activities were held once a week for two hours, from January- May with 18 students, at the public pool of Monterusciello (Naples).

The students were guided by a special needs teacher (expert in swimming) and by the qualified personnel of the facility.

The activities were primarily recreational.

During the activities the pool was attended by others, without disabilities and by athletes in training. A normal and welcoming environment was thus created where the students would be able to relate and create relationship with others.

Discussion

Pianura is a neighborhood in the periphery of western Naples, south of the hills of Camaldoli, and extending towards the "Montagna Spaccata." It borders with the neighborhoods of Soccavo, Chiaiano, Agnano and Fuorigrotta and with the communes of Quarto and Marano di Napoli. Its name derives from its plains and fields surrounded by high ground. In 1926, it becomes part of a recovery plan, put into action during the fascist period, and becoming a district of the District of Naples. After having been IV Section, in 2005, together with Soccavo, it became part of the IX Municipality of the district of Naples.



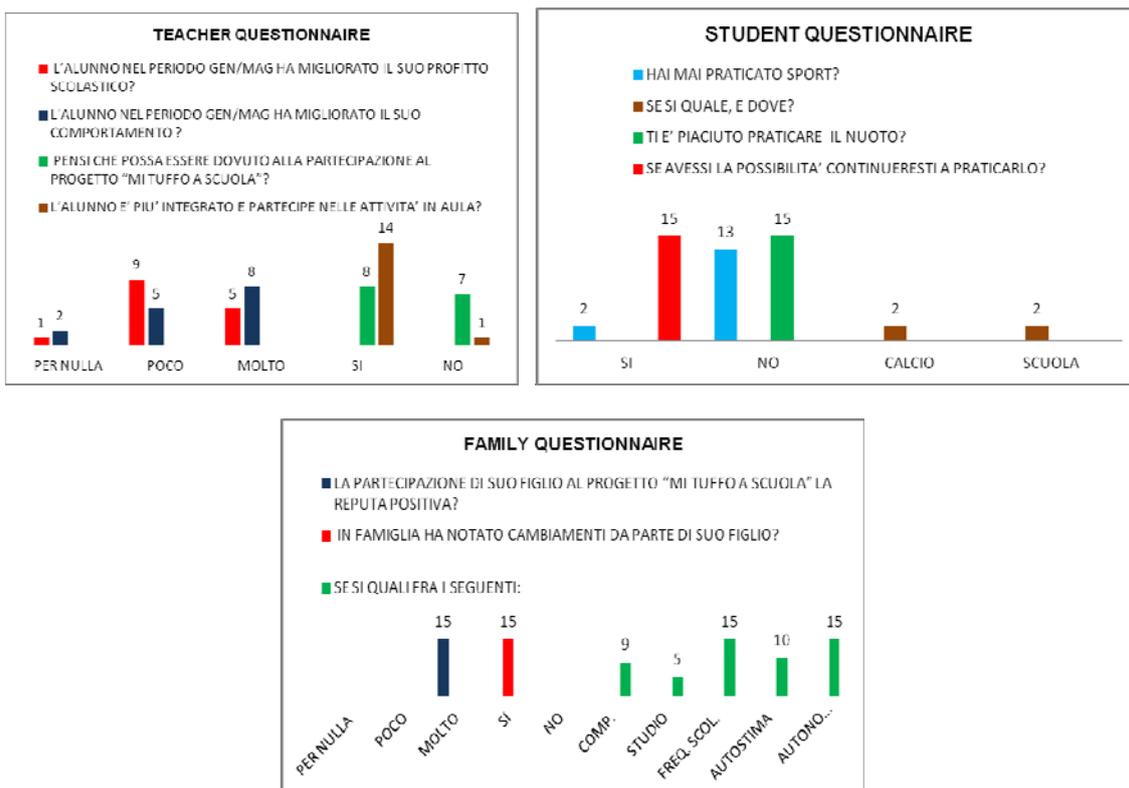
Pianura lies on a surface of 11.45 km² (the largest neighborhood of Naples), and holds about 58,362 inhabitants (the second, after Fuorigrotta, for the number of inhabitants), of which 29,030 male and 29,332 female, with a density of 5097.12 inhabitants per km².

The school in question, the Istituto comprensivo Giovanni Falcone holds two structures, both in the neighborhood of Pianura: the main structure is at 100 Via Pallucci, its branch at 52 Via Torricelli.

In the main structure 30 classes are present, totaling 731 students, of which 35 disabled and 6 immigrant.

In the branch structure there are 7 classes, totaling 148 students of which 8 disabled and 3 immigrant.

Three questionnaires were given, one for the teachers of the classes involved, one for the students and a third for the families.

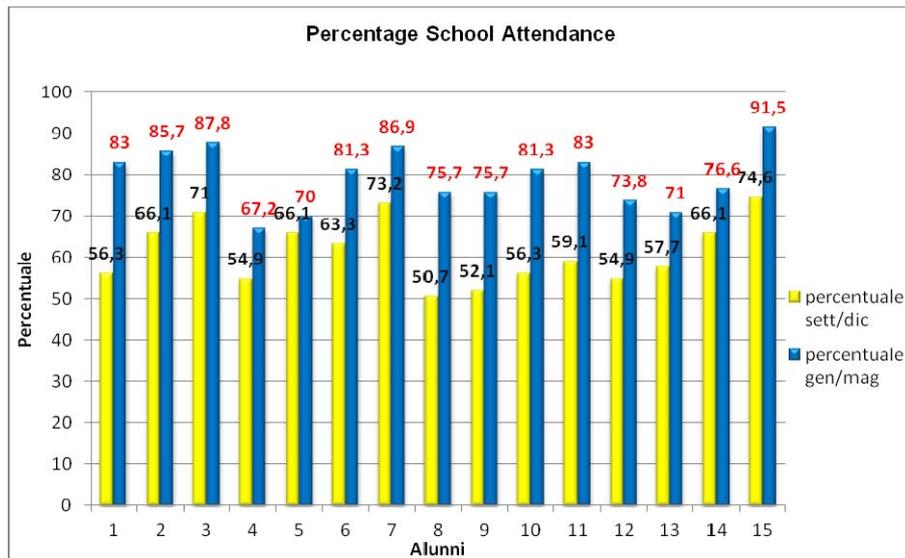


Finally, data was collected regarding attendance of the subjects involved:

student	September-December			January-May		
	Total days	present	percentage	Total days	present	percentage
1	71	40	56.3%	107	89	83%
2	71	47	66.1%	107	92	85.9%
3	71	51	71%	107	94	87.8%
4	71	39	54.9%	107	72	67.2%
5	71	45	66.1%	107	75	70%
6	71	45	63.3%	107	87	81.3%
7	71	52	73.2%	107	93	86.9%
8	71	36	50.7%	107	81	75.7%
9	71	37	52.1%	107	81	75.7%
10	71	40	56.3%	107	87	81.3%
11	71	42	59.1%	107	89	83%
12	71	39	54.9%	107	79	73.8%
13	71	41	57.7%	107	76	71%
14	71	47	66.1%	107	82	76.6%
15	71	53	74.6%	107	98	91.5%

*Total Average 61.5%

*Total average 84.9%



5. Conclusions

Following the analysis of the results, the data which prevails is that of an increase in school attendance during the months the study was carried out; an increase in school attendance from 61,5% to 84, 9%.

More positive results are seen with regards to cognitive learning, and also in levels of autonomy and self esteem. These results are confirmed by the class representatives and the families as gathered in the questionnaires given at the end of the study.

In conclusion we can affirm that our hypothesis was verified. We can therefore be satisfied and consider such a project, even with minor necessary adjustments, a starting point for future initiatives related to these issues

References

- L'integrazione sociale delle persone con disabilità – 2005 ISTAT - 2004
 Napolitano S.,(Ed. Liguori) (1999)*Teoria, tecnica e didattica delle discipline natatorie.*
 Naples
 AA VV.(EGA Edizioni Gruppo Abele) (2006) *Handicap? Anche noi giochiamo! Giochi e attività per disabili.* Rome

FRAMING DEMOCRATIC GOVERNANCE OF HIGHER EDUCATION IN TURKEY FOR THE FUTURE

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Abstract

The current structure and functioning of the higher education system in Turkey contains administrative and educational practices under the influence of Fordism, Weberism, and Taylorism, which are intermingled and intensely interactive. These three concepts complement one another as do French, German, and Anglo-Saxon traditions. The post-Fordism wind of the developing world seeks an adaptive answer to how this structure could be changed through new approaches. From this perspective, this paper consists of three main parts. The first part describes the concept and development of democratic university as an alternative for the existing structure. The second part focuses on the basic characteristics of a democratic university by examining the prominent and apparent stages of decision-making processes. The third part attempts to explain the obstacles and difficulties that hinder the formation of democratic university governance. Specifically, traditionalism and the internalization of hierarchical and bureaucratic structure are regarded as the most important obstacles. Finally, recommendations and different approaches are provided. The democratic governance of higher education may infuse a brand-new understanding and a mentality change. This leads to the changes at higher education institutions in Turkey, which are required in such a modern age. In this study, an attempt was made to form a conceptual framework to clarify concepts and terms based on the literature. The review contains different comments, views, approaches, features, and theories. This paper may contribute to the creation of a new higher education system in Turkey, concerning new organizations and practices as well as administrators with a new mentality. This paper is also expected to encourage and guide the future studies.

Keywords: *Higher education, Democratic Governance, Turkey*

1. Introduction

In Turkey, organization of universities is based on developments occurring under the leadership of three different country traditions dominated by the influence of the Western civilization (Dölen, 2010). The first one is the French education system. It left its mark on organization of the universities in the 18th century. Getting under the influence of the German system with “university reform” in 1933, organization of the universities experienced an intensive effect of Humboldt model. Power balances arising after the World War II brought along effects of Anglo-Saxon / American university system as of the 1950s. Weberian-Fordist-Taylorist approach, an intermingled approach which regarded universities as a place and factory of education and training as well as a place for the transfer of information serving, was a need of the industrial period during which mass production understanding was dominant (Odabaşı, 2012). Taylor’s distinction between those working by use of their bodies and arms and white-collar managers responsible for management and planning deepened the distinction between faculty members and academic administration (Greenwood & Levin, 2003) constituting bureaucratic oligarchy and academic aristocracy besides implementing orders, processes and regulations at universities.

The Fordist model associated with the principles of Taylorism and Weberian bureaucracy influenced and dominated the industrial world and the 20th century universities from 1920s to the 1970s. Weberian, Taylorist and Fordist approach that see the universities as a workshop, knowledge and student factory, was a requirement of the industrial society in the last century. According to this understanding, students and the faculty are part of a mass, a standard and a bureaucratic education. In an industrial society, people were forced to specialize, to memorize details, to obtain information and to be similar with others. Changes in recent economic conditions and production styles reflect themselves in higher education as well. The purpose (not the content), the practice (not the knowledge), the differences (not similarities), individualism (not the mass) are important aspects of the education philosophy and production

2. What is Democratic University?

In Turkey, there has been an on-going argument on this complex, centralized, bureaucratic and unproductive higher education system since The Council of Higher Education (YOK) was established in 1982. YOK restructured the system as more centralized and made the universities compromise from their autonomies (Tansel & Güngör, 2003). Critics concentrate on the change that “central-bureaucratic” system was formed by the legislation. In the 21st century, both economy and innovation are needed to succeed in a very competitive and challenging global world. Factors like international developments and competitive environment force the higher education system to seek for change. Innovation implied here requires different thinking and acting. Democratic university can form a management and an understanding that will fulfill these requirements.

The duty of democratic university is to disseminate all capacity of the university to a wider audience. As an alternative to the 20th traditional bureaucratic university, democratic university management acts on the basis of merit not only in implementation and training areas, but also in establishment of research projects that will allow teams to carry out certain tasks and to create units in projects; instead of rigid hierarchical structures’ (departments and institutes) administration with the same managers for a long time. The democratization of the universities is the reorganization, which ensures that the universities have more internal representatives such as students in their internal decision making based on more democratic principles (Luescher-Mamashela, 2010). Since the Turkish Government joined the Bologna Process in 2001, the Turkish Higher Education System has undergone significant changes (Esen, Gürleyen & Oğuş Binatlı, 2012). Bologna process prescribes student representation and participation, but it is not easy to say that these rights are satisfactorily exercised in real sense.

There is a growing tendency to accept university administrators as professional managers with their leadership styles and management approaches developed for businesses. Flexible organizational structure (with the managers leading the team work) increases the mobility of those in colleges and alliances with other universities, and the effectiveness of the activities realized. Election of representatives to defend the interests of multiple stakeholders who have merit, their power of making decisions and disseminating that decision-making power, and the promotion of higher education in the university are expected from a democratic university.

Democratic university tries to ensure a balance with public control by giving priority to the university's institutional autonomy and academic freedom of individual works. Academic autonomy in democratic university includes responsiveness and responsibility. Committees formed in the universities are able to move on by democratic values while dealing with participating, representing and policy-making issues. Whereas democratic university representation system is perceived as more internal representation of the students, academic and administrative staff, external

representation can be considered as a representative of the civil society including industries. While taking a decision, divergence from centralization enlarges the size of non-institutional participation with softening the boundaries of organizational structures.

Democratic university provides opportunity for personal development and internalization of organizational values. In addition, supporting on policies and communicating clearly as an organization have a positive effect on decision making and practicing. As a result of all these positive effects, performances will improve with innovations and better implementation of these innovations (Boer & Stensaker, 2007).

3. Features of Democratic University

There are theoretically examined definitions, properties and distinctive features of democratic university. Although these features differentiate for each organization, they can be generalized as properties defined in the following items (Odabaşı, 2011):

a. Democratic university is close to "managerial" structure known as "business management" type.

b. Advices, views and consultancies of other committees of the university, particularly formed by the faculty, are evaluated.

c. Mobility is high for various situations in democratic universities. This mobility also involves (but not limited to) student, scholar and service exchange; dissemination of intellectual benefactions to a larger audience and providing the society with flexible learning opportunities.

d. Democratic university tends to cooperate with social and economic environment more than traditional university does. Thus, it can actualize the function of change while contributing to the environment (Pawlowski, 2009). One of the most important aspects of this contribution is to develop democratic citizens.

e. Democratic university education, based on differentiation, variation and competition, is more effective than the education which aims to be similar with others. This requires employing processes of teaching and learning that non-authoritative, reflexive, participative, critically examined and unbiased dialogue.

f. Effectiveness, efficiency and accountability measurements have become to the fore and have gained importance in democratic universities.

g. Distance education is a necessity of democratic university since it aims not only to generate creative education but also to educate the public and expand the education to all people.

Main characteristics of democratic university from the managerial perspective can be seen on the figure below.

<i>Model</i>	<i>Organizational Structure</i>	<i>Power of Management</i>	<i>Organizational Culture/ Communication</i>	<i>Decision-Making</i>
<i>Democratic University</i>	-Decentralized, horizontal -Non-hierarchical -Flexible -Student-oriented -Self-Control and Accountability -Integrated Network	-Peer-Board of Trustees -Widespread, shared -Stakeholder engagement -Academic Competitiveness and Innovation -Merit Based	-Net of title -Informal -Network -Teleological and pluralistic -Reduced paperwork -Learning to learn -Differentiation	-Participative -Proactive -Progressive -Quick decision making process -Committees, partners -Risk-bearer

Figure 1. Main Characteristics of Democratic University (Adapted from Odabaşı 2011)

4. What are the challenges?

There will be challenges, resistances and obstacles in the process of transformation and change to a democratic university. In order to manage the problems occurred at organizational, managerial and personal levels; participation of multiple stakeholders as students, faculty, employees, families, government, business people and all other stakeholders or their representatives is required in all communication and decision-making processes, which can be regarded as a first step to perform organizational learning. Management and management style formed according to this structure is a multi-dimensional system having a board of trustees supported by collegial management system and includes the democratic and participatory decision-making processes.

Two major factors (tradition and bureaucratic structure) shaping the problems occurred for democratic universities; that is, how to deal with the growing gap between managerial expectations and academic world and how to cope with lack of trust between the administrators and the faculty. These will be realized by heading for horizontal organizational structure and new forms of governance, and by turning into government contracts, companions and indicators according to legislations (Larsen, Maassen & Stensaker, 2009). In the democratic university, administrative and financial responsibilities should belong to the committees formed by professionals; and, university staff, which retains institutional autonomy of the university, should be engaged with faculty members. New fund-raising processes, accreditation, performance indicators, measurability and accountability, quality, innovation, creativity and government-industry cooperation can be taken into account as elements of the newly formed democratic university culture. Output-oriented university is a must for a reasonable democratic era. For a successful transformation and reform, the bottom-up participatory approach should be followed in accordance with modifications in legal regulations.

5. Conclusion

Hierarchical and centralized, bureaucratic structure of industrial society prevents the creativity and diversity. Industry-border society is now radically transforming into information, knowledge society. This requires an analytical public search in every areas of life. Universities eliminating central, bureaucratic excesses, one-typed government, over regulation and vertical hierarchies will be able to create more effective cooperation with the state and the industry than others. Sine qua non conditions of democratic university are the protection of all stakeholders' participation, involvement, and the acceptance of it as a democratic value; and then, a high level of motivation which can provide a more effective way of structuring.

The purpose of this paper is to elaborate and to provide conceptual perspectives on the role of democratic university in higher education in the 21st century. In this regard, the author proposes the following recommendations to achieve changes and reforms:

➤ Universities should gain the self-steering and the democratization towards central management. The political changes observed in Turkey in the last decade are also reflected in rector appointments. For this reason, the development of authorized boards instead of authorized rectors and the administration of state universities by such boards may be planned (Ereş, 2011).

➤ In a broader sense, without institutional autonomy of the university academic freedom is not possible. There should be self-governance of both the faculty and the university. The Turkish Council of Higher Education is initiating self-regulative steering and decentralization management system, which will result more accountable and greater autonomy. It is expected that with the decentralization, units can be more accountable for their actions. Performance evaluation systems are established to

provide feedback in understanding how responsibility center meet their targets (Ünal & Çoşkun, 2011).

> In addition to the academic freedom and autonomy, financial autonomy and self-steering of institutions are the common answers for the Turkish higher education systems.

References

- Boer, H. & Stensaker, B. (2007). An internal representative system: the democratic vision. In Maasen, P. A. M. &
- Dölen, E. (2010). *Türkiye Üniversite Tarihi 4-İstanbul Üniversitesi (1933-1946)*, İstanbul: Bilgi Üniversitesi Yayınları.
- Esen, O. & Gürleyen , I., Oğuş Binatlı , A. (2012). Impact of the Bologna Process on Turkish higher education: the case of Izmir University of Economics. *European Journal of Higher Education*, 2 (2-3), 187-197.
- Ereş, F. (2011). Service quality of state universities in Turkey: the case of Ankara,.*European Journal of Higher Education*, 1 (2-3), 249-260.
- Greenwood, D. & Levin, J.M. (2003). Üniversite –Toplum İlişkilerinin Yeniden Yaratılması: Eylem-Araştırma/ Akademik Taylorizm. Oğuz N. Babüroğlu (Ed.) *Eğitimin Geleceği: Üniversitelerin ve Eğitimin Değişen Paradigması* (77). İstanbul: Sabancı Üniversitesi.
- Larsen, I. M. & Maassen, P., Stensaker, B. (2009). Four basic dilemmas in university governance reform. *Higher Education Management and Policy*, 21(3).
- Luescher-Mamashela, T. M. (2010). From university democratisation to managerialism: The changing legitimation of university governance and the place of students. *Tertiary Education And Management*, 16 (4), 259-283.
- Pawlowski, K. (2009). The ‘fourth generation university’ as a creator of the local and regional development. *Higher Education in Europe*, 34 (1), 58.
- Tansel, A. & Güngör N.D. (2003). Brain drain “From Turkey: Survey evidence of student non-return”. *Career Development International*, 8 (2), 54.
- Odabaşı, Y. (2011). Türk yüksek öğretiminde geleneksel ve demokratik üniversite yönetimleri karşılaştırması. *International Conference on New Horizons in Education*. Portugal: The Polytechnic Institute of Guarda.
- Odabaşı, Y. (2012). Türk Yükseköğretim sisteminin değişen çehresi: Fordizmden post-fordizme dönüşüm. 1. *Eğitim Sosyolojisi Sempozyumu*. Ankara: Ankara Üniversitesi.
- Ünal, G. & Coşkun, A. (2011). Higher education in Turkey: Trends towards self steering public universities. *International Higher Education Congress: New Trends and Issues*. İstanbul: Turkish Council of Higher Education.

EARLY CHILDHOOD EDUCATIONAL NEUROSCIENCE: ARE WE READY?

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Abstract

Educational neuroscience is an emerging field of research suggesting that the mind does not exist separately in a vacuum, but is rather viewed as being embodied in the brain; a brain that is in constant interaction with the multiple agents engaged in the theater of social life. The multidimensional aspects of social cognition have been studied extensively and have been related to young children school adaptation. In particular, agonistic mode of social information processing has been shown to be related to externalized and internalized problems. Educational neuroscience stress that the brain has become the new frontier for studying young children sociocognitive abilities. Indeed, empathy, altruism, information and emotion processing, perspective taking, moral judgement, beliefs, theory of mind, cooperation, joint problem solving, can now all be investigated with analytic techniques such as magnetic resonance imaging (MRI) and electroencephalography (EEG). In this way, researchers are beginning to understand the neurobiological processes associated with basic social competencies. This type of knowledge can be used to put new light on the results of socio-cognitive studies. For this matter, results of multiple aspects of social problem solving with peers empirically derived from interviews with 404 preschoolers (67 months) are presented. Multivariate hierarchical cluster analyses revealed five modes of social problem solving at he beginning of the preschool year. An Anova showed an association between modes of social problem solving and dimensions of preschool adaptation, as perceived by teachers (i.e., sociability, socio-cognitive adaptation, externalized and internalized problems) at the end of the preschool year. Results are discussed in terms of new knowledge in socio-cognitive neuroscience and of potential preschool educational intervention. To answer the title question of this presentation, on the cautious side, a critical perspective is stressed especially in light of neuromyths that have made their way into the classroom. On the optimistic side, we argue for a theoretical framework that takes into account the preoccupations and models used in educational science. A radical embodiment view that emerged from neuro-phenomenological perspective is notably proposed as a guide for research in early childhood educational neuroscience.

Keywords: *Early childhood education, Educational neuroscience, Social cognition*

1. Introduction

While sociogenetic (Baldwin, 1884) and socioecological (Bronfrenbrenner, 2005) perspectives stress the canalizing influence of early socialization experiences on child sociocognitive development (Pagé, Strayer, & Reid, 2001), educational Neuroscience is an emerging field of research suggesting that the mind does not exist separately in a vacuüm, but is rather viewed as being embodied in the brain (Campbell & Pagé, 2012); a brain that is in constant interaction with the multiple agents composing the theater of social life. Indeed, as brain developmental research and understanding increased in the past two decades, the importance of early experiences and learning for a child's early neural development have been stress extensively, especially on the development of socio-affective and cognitive skills and on brain architecture and neurochemistry. One of the arguments supporting the links between early childhood education and neuroscience is the ability of the brain to change, and how these changes might relate to developmental and learning processes.

2. Objectives

This paper explores more specifically the potential links between sociocognitive developmental neuroscience and early childhood education. The multidimensional aspects of social cognition have been studied extensively (Pagé & Srajer & Reid, 2001) and have notably been related to young children's school adaptation (Crick & Dodge, 1994). In particular, agonistic mode of social information processing have been shown to be related to externalized and internalized problems. Educational neuroscience (Cambell & Pagé, 2012) stresses that the brain has become the new frontier for studying young child's sociocognitive abilities (Blakemore & Choudhury, 2006; Yeates, et al., 2007). Indeed, empathy, altruism, information and emotion processing, perspective taking, moral judgement, beliefs, theory of mind, cooperation, joint problem solving, can now all be investigated with analytic techniques (Harmon-Jones & Peterson, 2009), such as magnetic resonance imaging (MRI) and electroencephalography (EEG). In this way, researchers are beginning to understand the neurobiological processes associated with basic social competencies. We proposed that this type of knowledge can be used to put new light on the results of a sociocognitive study showing links between children interpersonal problem solving patterns at the beginning of the preschool year and their preschool adaptation, as indexed by their teachers at the end of the preschool year.

3. Methods and results

For this matter, the results of multiple aspects of social problem solving with peers, empirically derived from interviews with 404 preschoolers (189 girls and 215 boys; mean age = 67 months) are presented. An adaptation of the PIPS (Shure & Spivack, 1974; 1982) was used to assess children's social cognition at the beginning of the preschool year. The PIPS is coded with a system (Inter-coder agreement >.80) characterising children's strategies in terms of their diversity (number of different strategies and enumerations of the same), their type ((% of strategies that are statements (I asked her) or actions (I give her my toy)) and their nature ((% of strategies that are affiliative (I asked her to lend me the toy) or agonistic (I take the toy)). Multivariate hierarchical cluster analyses using Ward method revealed five different modes of social problem solving. Four Anova ($F= 4,54$ to $2,63$, $p < .001$ to $.034$) showed an association between modes of social problem solving and dimensions of preschool adaptation as perceived by teachers at the end of the preschool year (i.e., sociability, sociocognitive adaptation, externalized and internalized problems). In particular, the results showed that children with a mode characterized both by diversity and balanced strategies were perceived positively by their teachers while children associated with a more agonistic mode of social problem solving, or a mode characterized by a lack of diversity in strategies, were both evaluated more negatively.

4. Discussion

Can these results be highlighted by new knowledge in sociocognitive neuroscience? Indeed, some affective and social neuroscience studies can be related to interpersonal problem solving. For example, understanding, naming and learning to manage emotions are important for children to be able to face the multiple challenges of social life and to be able to resolve interpersonal problems. The neural basis of emotion recognition has been investigated by neuroscience (Phillips, et al., 2004) using neuro-imaging methods which show that different levels of emotional awareness are correlated with differential activity in the amygdala (a structure on the lower inner surface of the temporal lobe thought to be important for emotional processing, especially for anger and fear), anterior insular cortex (part of the cerebral cortex folded deep within the lateral sulcus between the temporal lobe and the frontal lobe that have

been associated with emotion perception, motor-control, self-awareness, cognitive functioning and interpersonal experience) and the medial prefrontal cortex (anterior part of the frontal lobes of the brain lying in front of the motor and premotor areas implicated in planning complex cognitive behaviors, personality expression, decision-making and moderating correct social behaviors). Research on brain development in childhood shows large-scale structural change in these areas. Hence the degree to which young children are aware of their emotions may vary, which may have an impact on how children behave. In our study children with the agonistic mode of social information processing might be a good candidate for intervention focusing on emotion awareness, recognition and control. Moreover, results of Jones, Laurens, Herba, Baker, and Viding (2009) suggest that children with callous-unemotional traits, (e.g., lack of empathy, manipulateness, lack of guilt, emotional constrictedness) which are particularly difficult problem for educators to deal with, have less brain activity in the right amygdala in response to fearful faces, suggesting that the neural basis of that type of emotional problem is present early in development and could affect some of the children of our sample.

Another line of research focus on the dimensions of attention and executive control. Attention is a vital process through which the child can actively select particular aspects of their sociocultural environment in order to learn. Executive functions, which are essential in interpersonal problem solving, included the abilities to inhibit unwanted information, feeling or response, to plan ahead for a mental step of actions to be taken and to retain relevant social cues and changing information for brief periods. Like attention, executive function skills act as basic platforms for the ongoing social activities found in preschool settings. Some aspects of attention and executive control have been shown to be atypical in children demonstrating anti-social behaviour, conduct disorders and autism. Even if neuroscience have begun to identify the brain structures and neuronal circuits in adults involved in attention and executive function, including the prefrontal cortex, much research remains to be done to better understand the development of this circuitry and the neural basis of individual differences in attention and executive function (Blakemore & Choudhury, 2006). Nevertheless, recent neuroscientific results suggest that attention skills may be one of the human brain functions that responds best to early intervention and training (Holmboe, Fearon, Csibra, Tucker, & Johnson, 2008). Moreover, recent studies suggest that preschool training of executive skills may prevent early school failure (Blair & Diamond, 2008). Children showing less diversity in their strategies to solve interpersonal problems with peers could benefit from the educational intervention aiming at the development of their attentional and executive functioning skills.

5. Conclusion

Neuroscience research offers interesting possibilities for childhood early education: these include, the early diagnosis of special educational needs; the study of the effects of different educational interventions on learning; and a better understanding of individual differences in development and learning and the best way to educationally suit these differences. Yet, in the debate over the usefulness of connecting neuroscience and early childhood education, in line with Byrne (2001), we argue for a cautious acceptance of neuroscience findings and for proactive collaboration between the two domains. So, to answer the title provocative question, we propose a critical and cautious yes, especially in light of neuromyths that have made their way into the classroom (Geake, 2005). Furthermore, naturalizing social realities could be a reductionist enterprise that downplays the social construction of the human mind and brain. Ehrenberg (2008) in addressing phenomena such as empathy or aggressivity criticize certain neuroscientific schools that put too much emphasis on the individual, his brain or his self and reduce social relations to their individual aspects. These criticisms bring questions that will need to be address. Precisely, what

are the nature and the context of the social interactions that play a role in brain development? How early childhood educational neuroscience can take into account individual differences as well as historical and cultural differences, compared to the similarities found in human brains? Precisely how educational researchers and neuroscientists can collaborate to translate these questions in a practical way of doing research?

We argue for a theoretical framework that takes into account the preoccupations and models used in educational science (Campbell & Pagé, 2012; Goswami, 2006; Hall, 2005). Educational neuroscience with its transdisciplinary approach that intertwined simultaneously rigorous research methods with humanistic views might be one way to make bridges between different epistemologies, theories and research methods in order to bring together multiple levels of analysis (neuronal, behavioural, cognitive, affective, sociocultural, phenomenological, etc.). A radical embodiment view that emerged from neuro-phenomenological perspective (Varela, Thompson, & Rosch, 1999; Thompson & Varela, 2001; Campbell & Pagé, 2012) is proposed as a guide for research in early childhood educational neuroscience, since it offers a perspective of non-dualism of cognition and learning that recognizes the physical incorporation of human subjectivity under a unified construct of mind-brain-body, situated in a larger sociogenetic and socioecological framework in order to give it its full meaning. This means to look at the opportunities and constraints present in the socioecological "milieux" of the children of this study to better understand their particular sociocognitive modes.

We are at the dawn of being able to use the rich theoretical intuitions in education to guided neuroscientific studies toward new avenues. In this matter, it is important for researchers in early childhood educational neuroscience to not only learn about theories and methods coming from the neuroscience but to have direct access to the tools and equipment used by the neuroscience, in order to become empowered with new ways to discuss their own research questions regarding young children social, affective and cognitive development in educative settings. Early childhood educational neuroscience can be a lot more than just an education field to apply the neuroscientific findings. It means in particular to be in command, in order to revisit, with new techniques and methods, the different models of development, learning and teaching found in the sciences of education. Rather than findings from neuroscience research simply being applied to early childhood education, they could be used to constrain educational theorizing by examining the concordance of diverse theories with neuroscience empirical results. Finally, we proposed to develop neuro-early childhood educators (Rushton, 2011), a specially trained class of professionals guiding the introduction of neuroscience into educational practice in a cautious, sensible and ethical manner.

References

- Baldwin, J. M. (1884). *Mental Development of the child and the race: Methods and processes*. New-York: The Macmillan.
- Blair, C., & Diamond, A. (2008). Biological processes in prevention and intervention: The promotion of self-regulation as a means of preventing school failure. *Development and Psychopathology*, 20(03), 899-911.
- Blakemore, S. J., & Choudhury, S. (2006). Development of the adolescent brain: Implications for executive function and social cognition. *Journal of Child Psychology and Psychiatry*, 47, 296–297.
- Bronfenbrenner, U. (2005). *The future of childhood, in making human beings human: Bioecological perspectives on human development*. Thousand Oaks, CA: Sage Publications Ltd.

- Byrnes, J. P. (2001). *Minds, brains, and learning. Understanding the psychological and educational relevance of neuroscientific research*. New York, NY: The Guilford Press.
- Campbell, S. R., & Pagé, P. (2012). La neuroscience éducationnelle : enrichir la recherche en éducation par l'ajout de méthodes psychophysiologiques pour mieux comprendre l'apprentissage. *Neuroéducation*, 1(1), 115-144.
- Crick, N.R., & Dodge, K.A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment, *Psychological Bulletin*, 115(1), 74-101.
- Ehrenberg, A. (2008). Le cerveau social. Chimère épistémologique et vérité sociologique. *Esprit*, 79-33.
- Geake, J. G. (2005). The neurological basis of intelligence: A contrast with "brain-based" education. Paper presented at the *British Educational Research Association Annual Conference* (Glamorgan, UK, September). <http://www.leeds.ac.uk/educol/documents/156074.htm>
- Goswami, U. (2006). Neuroscience and education: from research to practice? *Nature Reviews Neuroscience*, 7, 406-411. doi: 10.1038/nrn1907
- Hall, J. (2005). *Neuroscience and education: A review of the contribution of brain science to teaching and learning*. SCORE Research Report 121. The Scottish Council for Research in Education. ISBN 1 86003 090 4
- Harmon-Jones, E., & Peterson, C. K. (2009). Electroencephalographic methods in social and personality psychology. In E. Harmon-Jones et J. S. Beer (Eds.), *Methods in Social Neuroscience* (pp. 170-197). New-York: The Guilford Press.
- Holmboe, K., Fearon, P. R. M., Csibra, G., Tucker, L. A., & Johnson, M. H. (2008). Freeze-Frame: A new infant inhibition task and its relation to frontal cortex tasks during infancy and early childhood. *Journal of Experimental Child Psychology*, 100, 89–114.
- Jones, K., Laurens, K. R., Herba, C. M., Baker, G. J., & Viding, E. (2009). Amygdala hypoactivity to fearful faces in boys with conduct problems and callous-unemotional traits. *American Journal of Psychiatry*, 166, 95-102. 10.1176/appi.ajp.2008.07071050
- Pagé, P., Strayer, F. F., & Reid, L. (2001). Où en est la cognition sociale? Sociogenèse et sélection ontogénétique des pensées sociales. *Psychologie Canadienne*, 42(3), 185-199. doi: 10.1037/h0086891
- Rushton, S. (2011). Neuroscience, early childhood education and play: We are doing it right! *Early Childhood Education Journal*, 39, 89-94. doi:10.1007/s10643-011-0447-z
- Shure, M. B., & Spivack, G. (1974). *Preschool Interpersonal Problem Solving Test*. Unpublished manuscript, Department of Mental Health Sciences, Hahnemann Medical College and Hospital, Philadelphia.
- Thompson, E., & Varela, F. J. (2001). Radical embodiment: neural dynamics and consciousness. *Trends in Cognitive Sciences*, 5(10), 418-425. doi: 10.1016/S1364-6613(00)01750-2
- Varela, F. J., Thompson, E., & Rosch, E. (1991). *The embodied mind: Cognitive science and human experience*. Cambridge, MA: MIT Press.
- Yeates, K. O., Bigler, E. D., Dennis, M., Gerhardt, C. A., Rubin, K. H., Stancin, T., Taylor, H. G., & Vannatta, K. (2007). Social outcomes in childhood brain disorder: A heuristic integration of social neuroscience and developmental psychology. *Psychological Bulletin*, 133(3), 535-556. doi :10.1037/0033-2909.133.3.535

PEARLS IN THE PACIFIC: LESSONS IN IMPROVING TEACHER QUALITY

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Abstract

This paper will describe how the Content Area Specialized Training (CAST) initiative increased teacher quality by developing sustainable teacher leadership by carefully studying the context in which the teachers lived and worked. The two main CAST goals were to help participants: (a) strengthen their content knowledge and enhance their pedagogical content skills to become K-12 teacher leaders, and (b) improve their skills in implementing PD. For the first goal, the data indicated that attending the CAST provided professional growth related benefits like: (a) learning new effective teaching strategies, (b) increasing content area knowledge, (c) discovering and sharing new ideas about how to present specific concepts, and (d) learning new hands-on activities. For the second goal, the data indicated that over 95% of all CAST participants in both Guam and American Samoa found CAST to be highly useful in their future PD as teachers.

CAST has been successful in both Guam and American Samoa. While it is impossible to generalize results, the CAST model for PD may be successful in producing a self-sustaining collection of local teachers in other school systems. Therefore, this model may be useful to anyone looking for new ways to extend their PD services.

Keywords: *Teacher Leadership, Teacher Quality*

1. Introduction

Over the course of the past two decades, nearly all countries in the Asia Pacific region have been engaged in some type of educational reform movement in an effort to restructure schools to provide students with the tools necessary to be successful in the knowledge-based global economy (Cheng, 2001). One of the main foci of these reforms has been the push towards teacher quality, which is a dynamic construct that changes based on the contextual shifts in the educational environment (OECD, 2013).

Capturing the essence of what characteristics make up a quality teacher is a difficult task because while teacher quality is recognized as the most important school-level factor affecting student achievement, there is currently no single, widely accepted definition for it (Looney, 2011). Certain aspects are undeniable, like the fact that quality teachers have high levels of content knowledge and a broad repertoire of pedagogical tools including a variety of teaching methods and strategies to meet the needs of their students (Tucker, 2012; WCER Research Highlights, 2008). Other factors, like value-added components can be more difficult to agree upon. Individual components notwithstanding, the need for quality teachers is irrefutable. The question then becomes, how do we create more of them?

Simply put, in order to produce more "quality teachers" one must increase each individual teacher's expertise by having them model effective instructional practices, share their best practices, mentor new teachers and collaborate with colleagues (York-Barr & Duke, 2004). These teachers can then participate in more geographically diverse communities of practice and make personal contributions to the teaching profession by sharing with their peers through presentations, teaching and publishing (Riel & Becker, 2008).

1.1. Content Area Specialized Teacher Training

CAST focused on the idea that any reform movement will fail without teacher buy-in, training and support. Training was geared to developing quality teachers who actively believed in and practiced reform. Quality teachers are the most significant influence on student achievement (Darling-Hammond, 2000; Educational Testing Services, 2004; Rice, 2003). In fact,

An effective teacher is the single most important factor affecting student learning. It's more important than standards, more important than class size, more important than how much money is spent. Each of these is significant, but the quality of teaching dwarfs them all (Education Commission of the States, 2000, p. 1).

CAST developers focused on creating a professional development (PD) model that would develop a local population of teachers into teacher leaders. There were two main goals in supporting and developing these quality teachers. The first goal was to design, initiate, implement, and manage an effective PD program for grades K-12 teacher leaders that would (a) strengthen content knowledge in Language Arts, Mathematics, Science and Social Studies, and (b) enhance pedagogical content knowledge and skills for instructional support.

The CAST project's second goal was to design, initiate, implement, and manage an effective PD program for teacher leaders that will improve leadership practices, all aimed at sustaining positive change. Practicing K-12 teacher leaders would develop the skills and dispositions needed to deliver PD opportunities to their colleagues across the K-12 spectrum including Language Arts, Mathematics, Science and Social Studies. The CAST project respectfully returned curriculum and instruction decisions to local education professionals who had content expertise and pedagogical knowledge and skills for teaching in their unique cultural milieu.

2. Methods

2.1 Demographics

There were 29 CAST-Guam (CAST-G) participants who ranged in age from 20-70 years old, with the majority (83%) falling in the 31-60 year-old range. The years of experience ranged from 0-35 years of experience, with no less than two and no more than five teachers being part of any five-year grouping. With respect to content areas, 43% of CAST-G teachers were teaching science, 32% were teaching math, 17% were teaching social studies, and 9% were teaching language arts.

There were 71 CAST-American Samoa (CAST-AS) participants who ranged in age from 20-60 years old, with the majority (85%) falling in the 31-60 year-old range. The years of experience ranged from 0-35 years of experience, with the most teachers having between 6-10 years of experience. With respect to content areas, 32% of CAST-AS teachers were teaching math, 25% were teaching Language Arts, 25% were teaching science, and 18% were teaching social studies.

2.2 Procedure

The CAST-G and CAST-AS PD sessions involved a face-to-face eight day session in July with three days of planning with the CAST instructors and five days with two 90 minute Content and Pedagogy sessions and one 90 minute leadership session each day. CAST participants were surveyed throughout the project to determine their impressions of the PD.

Each CAST consultant employed three methods of data collection during their sessions: (a) Unstructured group interviews, (b) Participant observation, and (c) Semi-structured group interviews with open-ended questions, and two methods, (d) Focus groups and (e) Questionnaires, at the end of the PD session.

2.3 Analysis of the Data

A descriptive method was used to analyze the data. Written responses to the surveys, verbal responses in interviews, and responses recorded via field notes were recorded verbatim. CAST instructors used a grounded theory approach to code the open-ended data (Strauss & Corbin, 1990). All CAST-G and CAST-AS participant responses were read and re-read by two CAST instructors who independently discovered the properties associated with the data. The CAST instructors then shared their notes with each other, discussed their findings, and negotiated the mutually agreed upon findings.

CAST instructors used open coding to identify and categorize the relationships described by the data by focusing on the question “What are the perspectives of the CAST members on their perceived PD needs and their satisfaction with the CAST workshops?” as the lens through which they examined the open-ended survey responses and textual material. As relationships in the data emerged, CAST instructors used axial coding to determine how these relationships related to a general framework. The final step in the coding process involved selective coding, where the CAST instructors examined all of the themes that emerged from the data and determined the core theme that best represented all of the data.

The data was triangulated in two ways: (1) Investigator triangulation, where multiple CAST instructors observed and analyzed the data at every phase of the process, sharing their findings and negotiating the final outcomes; and (2) Methodological triangulation, where multiple methods: (a) Unstructured group interviews, (b) Participant observation, (c) Semi-structured group interviews with open questions, (d) Focus Groups, and (e) Questionnaires, were used to collect the data.

3. Results

The survey contained five forced-choice items that required a Likert-type scale response. Responses to each question are summarized in Table 1.

Table 1. Percentage of CAST Respondents Perceptions on Training Received

Questions	Range of Responses				
How ready do you feel to begin offering professional development to your colleagues	Very Ready	Ready	Neutral	Somewhat Ready	Not At All
Guam	25	38	25	12	0
American Samoa	61	29	8	1	1
How closely was the content of CAST aligned to standards?	Very Closely	Closely	Neutral	Mostly Not At All	Not At All
Guam	58	21	21	0	0
American Samoa	94	4	1	0	0
Did participation in CAST meet your expectations?	Very Useful	Useful	Neutral	Mostly Not At All	Not At All
Guam	63	29	8	0	0
American Samoa	94	6	0	0	0
How likely are you to share ideas you gained through CAST participation with others	Very Likely	Likely	Neutral	Mostly Not At All	Not At All
Guam	88	8	4	0	0
American Samoa	87	8	3	1	0
How useful are the CAST ideas content and strategies in your future professional development of teachers?	Very Useful	Useful	Neutral	Mostly Not At All	Not At All
Guam	75	21	4	0	0
American Samoa	99	1	0	0	0

The survey also contained six open-ended questions. For Question 1, “Why did you choose to participate in CAST?” and Question 2, “What did you find most beneficial in CAST?” the overwhelming reason was for professional growth. For Question 1, 77% of CAST-G and 91% of CAST-AS respondents listed teaching strategies, content knowledge, new ideas, hands-on activities, and becoming agents of change as the reasons they attended. For Question 2, 94% of CAST-G and 98% of CAST-AS respondents listed the same reasons. For Question 3, “What suggestions do you have for improving future CAST workshops?” 72% of CAST-G respondents wanted even more content strategies. In CAST-AS 75% of respondents wanted more strategies to teach content or even longer workshop sessions.

For Question 4, “Has your participation in CAST helped you feel more confident about offering professional development to your colleagues? How has it helped?” 91% of CAST-G and CAST-AS 97% respondents indicated increased confidence when considering offering PD to colleagues. A 15-year CAST-G science teacher stated, “yes it has, because I feel that being with the CAST has made me realize that there is so much that needs to be done for our teachers and our kids...there just aren’t enough people who are committed to finally do something about improving our schools.” For Question 5, “What type of follow-up or support to the CAST workshop would be most useful to you?” responses varied considerably, with more workshops, instructional strategies, technology integration, and feedback from instructors being common to both CAST-G and CAST-AS. For Question 6, “Are you experiencing any frustrations in trying to implement positive changes within your work environment? Please explain.” most CAST-G and CAST-AS participants indicated that they were not frustrated. However, of the CAST-G or CAST-AS participants who indicated frustration, two common areas of difficulty emerged (a) colleagues resentful of PD or who don’t understand why they have to make changes, and (b) lack of administrator support.

4. Discussion

For the first CAST goal, the data indicates that the four professional growth benefits of attending the CAST PD were: to (a) gain more effective teaching strategies, (b) increase participants’ content area knowledge, (c) discover and share new ideas about how to present specific concepts, and (d) learn new hands-on activities were beneficial to 94% of CAST-G and 98% of CAST-AS participants. As one CAST-G science teacher with 15 years of teaching experience stated, “It was beneficial learning more strategies, ways of improving myself as a teacher, and gaining more confidence.” Opinions were similar for CAST-AS participants, as a 16-year Language Arts teacher indicated, “It has made me more comfortable using the strategies from these workshops to teach others.”

With respect to the second CAST goal, the data indicates that the CAST project is well on its way to achieving this goal. After the initial CAST-G workshop, 87.5% said they were likely to share the ideas they have learned. For the second CAST-G workshop, participants and instructors worked together to put on a PD workshop for GPSS teachers. CAST members also mentioned that they would like to see more workshops offered with this format. After the initial CAST-AS workshop, 97% of CAST-AS participants said that the workshop helped increase their confidence in delivering PD to their colleagues, while 95% said they would be very likely or likely to share the ideas they have learned.

4.1 Recommendations

CAST facilitators used feedback from the first CAST-G workshop to design the second workshop. The first three days were devoted to emphasizing additional instructional strategies for all content areas and content-specific planning time for planning a PD workshop that was to occur over the course of the following five days.

CAST-G participants developed and chose content-specific strategies and pedagogy to share with other K-12 educators working in Guam. The workshop was a resounding success with over a hundred attendees. A second workshop held the following summer, planned entirely by CAST-G participants, was even more successful. This result was exactly what CAST facilitators envisioned, to create a self-sustaining group of local teachers who are able to successfully provide PD for their peers.

The successful CAST-G model was used to develop the CAST-AS PD workshop. Unfortunately, although the first CAST-AS workshop was a success, the second workshop, although approved, was not conducted due to changes in the political climate. This serves to reemphasize the need to consider the culture, politics, and economics of place and to remind us that changes can occur due to unforeseen circumstances.

A final recommendation is that CAST facilitators work with the participants to find ways to build bridges between school administrators and the new ideas associated with this PD. Both CAST-G and CAST-AS participants suggested that time be set aside for CAST facilitators to meet with current school administrators and try to find ways to incorporate the goals of CAST into the upcoming school year.

References

- Cheng, Y.C. (2001). *Educational reforms in the Asia-Pacific regions: Trends, challenges and research*. ERIC ED 461938
- Darling-Hammond, L. (2000). *Studies of excellence in teacher education (3 volumes)*. Washington, DC: American Association of Colleges for Teacher Education.
- Education Commission of the States. (2000). *In pursuit of quality teaching*. Denver, CO: ECS.
- Educational Testing Service. (2004). Where we stand on teacher quality. An issue paper prepared for ETS.
- Looney, J. (2011). Developing high-quality teachers: Teacher evaluation for improvement. *European Journal of Education, 46*(4), 440-455.
- Organisation for Economic Co-operation and Development (OECD). Learning our lesson: review of quality teaching in higher education. Retrieved on January 17, 2013 from <http://www.oecd.org/edu/imhe/44058352.pdf>
- Rice, J.K. (2003). *Teacher quality: Understanding the effectiveness of teacher attributes*. Washington, D.C.: Economic Policy Institute.
- Riel, M. & Becker, H. (2008). Characteristics of teacher leaders for Information and Communication technology. In J. Voogt, & G.Knezek, (Eds.), *International handbook of information technology and secondary education*. New York: Springer, 397-417.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications.
- Tucker, M. (2012). Teacher quality: What's wrong with U.S. strategy? *Educational Leadership, 42*-46.
- WCER Research Highlights. (Nov 2008). Value-added and other measures of teacher quality: Policy uses and policy validity. *Educational Digest, 56*-58.
- York-Barr, J. & Duke, K. (Autumn 2004). What do we know about teacher leadership? Findings from two decades of scholarship. *Review of Educational Research, 74*(3), 255-316.

EDUCATION FOR NURSES IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

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Abstract

The main 21st-century trend in the development of education has been established by the *UN Decade of Education for Sustainable Development* (ESD) for 2005-2014. The aim of this research is to improve education for nurses in line with ESD by implementing an ecological approach in nursing studies. The objective of the research are these: 1) to define and assess the theoretical basis of the ecological approach; 2) to assess the possibility of implementing the ecological approach; 3) to work out and approbate the course *An Ecological Approach in Patient Care*.

Basic Principles of Deep Ecology by Arne Naess and George Sessions, *The Ecology of Human Development* by Urie Bronfenbrenner, and the five ESD pillars of *learning to know, learning to be, learning to live together, learning to do, and learning to transform oneself and society* constitute the theoretical basis of the ecological approach.

The ecological approach also draws on Florence Nightingale's observations about the significance of the care environment and theories of nursing related to the environment (e.g. Leininger, Neuman, Rogers, Roy). The environment of nursing education and practice should be regarded as a complex system of learning, socialization, and culture that consists of subsystems which affect sustainable development. In that context, the observations of theoreticians of nursing studies on the effect of the environment on human health, a person's autonomy in the care process, human experience regarding health and illness, as well as the union of art and craft in patient care, are significant.

In assessing the possibility of implementing the ecological approach in nursing studies, the need to incorporate its principles in all courses of the study program and to work out a special course, *An Ecological Approach in Patient Care*, was evident. It would also be useful to work out and implement a professional development course for faculty members of colleges.

The theoretical basis of the ecological approach, as well as the ecological competence model developed by the author and the study course *An Ecological Approach to Patient Care*, has been improved and approbated in the College of Medicine since 2009. The course is worth 3 credit points (according to the European Credit Transfer System – ECTS). Four groups of students and 180 students have taken this course. As a result, the ecological competence of nurses is being formed and developed. That, in turn, promotes the positive development of education for nurses and a healthy environment, as well as a holistic, patient-centered care and a subject-subject relationship in the care process.

Keywords: *Nursing, nurses education, Education for Sustainable Development*

1. Introduction

The United Nations (UN) 2005 World Summit Outcome Document refers to sustainable development as economic development, social development, and environmental protection (2005 World Summit Outcome, 2005).

The main trend of educational development in the 21st century is set by the UN Decade of Education for Sustainable Development (ESD), implemented for the years 2005 to 2014 (UNESCO, 1995-2012).

The World Health Organization's (WHO) Strategic Objective 8 connects the ecological approach with ensuring sustainability: "To promote a healthier environment, intensify primary prevention and influence public policies in all sectors so as to address the root causes of environmental threats to health" (World Health Organization, 2011).

The UN Decade of Education for Sustainable Development presents a vision of the world in which everyone has a chance to benefit from a quality education and to discover values, actions and life style that ensure a sustainable future and a positive transformation of society (UNESCO, 1995-2012).

Aim of the study – to improve education for nurses according to the ESD by means of implementing an ecological approach in nursing studies.

Objectives of the research: identification and assessment of the theoretical basis for the ecological approach; evaluation of implementation possibilities to implement the ecological approach; development and approbation of the study course *An Ecological Approach in Patient Care*.

The 21st century has revealed numerous challenges in nursing education and health care: 1) how to integrate ESD in nursing studies; 2) how to improve the nursing education process and health care by using the ecological approach in health care practice; 3) how to create and integrate theories/models of nursing education in health care practice, there by promoting the healing of oneself and others; 4) how to integrate new technologies in nursing education and health care practice. The result of this integration should be nursing education and health care practice that are a complete, well-founded and unified whole.

The basic principles of ecosophy, or deep ecology, developed by Næss and Sessions, Bronfenbrenner's ecology of human development, and EDS constitute the theoretical basis of the ecological approach.

2. Ecosophy or deep ecology

According to ecosophy, or deep ecology, spirituality is determined by our inner feelings in relation to something greater than ourselves, to something we regard as holy. Ecosophy is based on the eight-point platform of Arne Naess (1912-2009) and G. Sessions. In the context of this research, three points which are especially relevant to the education of nurses and professional ethics problems are highlighted. The first point declares that *the well-being and flourishing of human and non-human life on Earth have value in themselves (synonyms: intrinsic value, inherent worth)*. *These values are independent of the usefulness of the non-human world for human purposes*. The seventh and eighth point declares that *ideological change will be mainly that of appreciating life quality (dwelling in situations of inherent value) rather than adhering to an increasingly higher standard of living. There will be a profound awareness of the difference between bigness and greatness, and those who subscribe to the foregoing points have an obligation directly or indirectly to try to implement the necessary changes* (Sessions, 1995).

Although in the 21st century discussions about euthanasia, including the concept of hidden euthanasia, are occurring on a global scale, as are discussions about congenital pathologies or the usefulness of palliative care, the main tasks of nursing and health care are ensuring human life, safety, and health.

Ecological science, concerned with facts and logic alone, cannot answer ethical questions about how we should live. For this we need ecological wisdom. Deep ecology seeks to develop this by focusing on deep experience, deep questioning and deep commitment. These constitute an interconnected system. Each gives rise to and supports the other, whilst the entire system is what Naess would call an ecosophy: an evolving but consistent philosophy of being, thinking and acting in the world that embodies ecological wisdom and harmony (Naes, 1973).

3. Ecology of Human Development and education of nurses

This research draws on insights presented in Urie Bronfenbrenner's *Ecology of Human Development*, the pillars described in Education for Sustainable Development, ecology of education, as well as the European Qualifications Framework (EQF) (Recommendation of the European Parliament..., 2008).

Urie Bronfenbrenner (1917 – 2005) defines the ecology of human development as follows: *The ecology of human development involves the scientific study of the progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by the relations between these settings, and by the larger contexts in which the settings are embedded* (Bronfenbrenner, 1979).

The key concepts in Bronfenbrenner's ecosystem are microsystem, mesosystem, exosystem, and macrosystem. Initially, a nurse's or nursing student's working environment was emphasized – namely, the study environment, relations within the health care environment, and its interaction with broader contexts. Three levels directly indirectly affect the implementation of ecology in a nursing education program and in health care: 1) the local level; 2) the European level – European Qualifications Framework; 3) the global level – Education for Sustainable Development (ESD).

Bronfenbrenner and his followers have improved the ecological theory of human development. In addition to ecosystem also endosystem and chronosystem have been included, and the importance of a process in human development has been stressed. The bio-ecological theories of human development (Bronfenbrenner, Morris, 2006) and Process-Person-Context-Time System have been established (Tudge, Mokrova et.al. 2009).

In view of the fact that process plays a leading role in a nurse's development, studies were conducted on using the didactic principles of transformative education and constructivism.

Research studies in the ecology of education are not characterized by reference to linear variables, but analyses are conducted in terms of systems: meso-, exo- and macro-system. Beginning at the innermost level of the ecological schema, one of the basic units of analysis is a dyad, or two-person system; triads, tetrads, and larger interpersonal structures are used in articulating the process of human socialization, all of which are a key to understanding the ecology of education (Bronfenbrenner, 1976/1979/1998, 2005; Bronfenbrenner, Morris, 2006),

The European Qualifications Framework (EQF) defines learning outcomes in terms of knowledge, skills, and competencies (Recommendation of the European Parliament..., 2008). The outcomes of education are stressed. Thus, it is important to pay due attention to both process and outcome. The five pillars of ESD – *learning to know, learning to be, learning to live together, learning to do, and learning transform oneself and society* – are significant in the context of education for sustainable development. Our research revealed that nurses have an inadequate understanding of their importance. That is especially true with regard to the pillar *learning to transform oneself and society*. The opportunities to implement this pillar on a daily basis are greater in informal learning situations than in educational institutions that offer formal or non-formal education.

In future research studies, it would be useful to link the pillar of *learning to transform oneself and society* with Education for Global Responsibility (EGR) (Education for Global Responsibility – Finnish Perspectives, 2007). The objective of EGR is to open nurses' eyes and minds to the need for global understanding, especially within the framework of sustainable development.

Nursing education and health care are characterized by teamwork that is interdisciplinary and oriented toward resolving complicated problems of health and living. It deals with an individual's development both in the environment as a living

organism characterized by viability, quality of life, and development in a multi-dimensional environment amid changing circumstances and as a self-respecting, self-developing and participating being.

4. Nursing and health care

In the nursing and health care context, the ecological approach is based on Florence Nightingale's (1820 – 1910) insights regarding the importance of the nursing environment and nursing theories related to the concept of environment (Neuman, Newman, Rogers, et al.). The environment of nursing education and practice has to be viewed as a complex system of learning, socialization and culture that consists of subsystems affecting sustainable development. Nursing theorists have expressed important insights on the role of the environment in human health, an individual's autonomy in the care process, human experience with regard to health and disease, and the unity of art and craft in the care process (George, 2010).

5. Implementing the ecological approach in nursing studies

During evaluation of the possibility of implementing the ecological approach, it was established that its principles have to be observed in all courses of the study program, and a separate study course has to be created. It would be useful to develop and implement a professional development course for college teaching staff.

Based on the theoretical background, as well as the author's ecological competence model for nurses, a study course on *An ecological approach in patient care* was created, and since 2009 it is being approbated and improved at the Medical College. The study course is worth 3 credit points (ECTS). It is implemented in 4 groups and taken by 180 students.

As a result of the course studies, ecological competence is being created and developed in prospective nurses. That facilitates development of a positive environment for nursing education and practice, as well as holistic patient-centred care and a subject-subject relationship during the health care process.

6. Conclusion

As a result of the research study, a course on *An Ecological Approach in Patient Care* has been created and is being approbated. Its aim is to improve education for nurses according to recommendations in *Education for Sustainable Development* by implementing the ecological approach in nursing studies. As a result of this course, ecological competence is being created and developed in prospective nurses. The course also facilitates development of a positive environment for nursing education and practice, as well as holistic, patient-centered care and a subject-subject relationship during the health care process.

A task for future research studies is assessing the possibility of implementing in nursing education the principles outlined in *Education for Global Responsibility*.

References

2005. World Summit Outcome (2005). [online] [31.01.2013.]. Draft resolution referred to the High-level Plenary Meeting Of the General Assembly by the General Assembly at its fifty-ninth session. Retrieved March 19, 2013 from <http://www.who.int/hiv/universalaccess2010/worldsummit.pdf>.
- Bronfenbrenner,U.(1976).The experimental ecology of education. *Educational Researcher* October 5, pp. 5-15,[online] [31.01.2013.]. Retrieved March 19, 2013 from <http://edr.sagepub.com/content/5/9/5>

- Bronfenbrenner, U. (1979). *The Ecology of Human Development. Experiments by Nature and Design.* Cambridge, MA Harvard University Press, 330 p.
- Bronfenbrenner, U. (1998). *Ecological Systems Theory.* In: *Annals of child development*, 6. Vasta R. (Ed.). Greenwich, CT: JAI, pp. 187-251.
- Bronfenbrenner, U. (2005). (Ed.) *Making Human Beings Human: Bioecological Perspectives on Human Development* CA: Sage Publications: Thousand Oaks, pp. 3 – 15.
- Bronfenbrenner, U., & Morris, P. (2006). *The Bioecological Model of Human Development.* In R. M. Lerner and W. Damon (Eds.), *Theoretical Models of Human Development. Vol. 1: of the Handbook of Child Psychology (5th ed.)* New York: Wiley, pp.793 – 828.
- Education for Global Responsibility – Finnish Perspectives. Publications of the Ministry of Education, 2007. Retrieved March 19, 2013 from <http://www.minedu.fi/export/sites/default/OPM/Julkaisut/2007/liitteet/opm31.pdf>
- George, J.B. (2010). *Nursing Theories. The Base for Professional Nursing Practice – 6th ed.* Department of Nursing California State University, Fullerton CA p.685.
- Health Organization (2002). *Health and Ageing: A Discussion Paper.* Department of Health Promotion, Non – Communicable Disease Prevention and Surveillance. Retrieved March 19, 2013 from http://whqlibdoc.who.int/hq/2001/WHO_NMH_HPS_01.1.pdf
- Næss, A. (1973). *The Shallow and the Deep, Long-Range Ecology Movement.* *Inquiry* 16: pp. 95 - 100.
- Neuman, B.M. (1990). *The Neuman Systems model: A theory for practice.* In *Nursing Theories in Practice*, edited by Parker. New York: National League for Nursing, pp.241 – 261.
- Newman, M. A. (1992). *Nightingale's vision of nursing theory and health.* In F. Nightingale, *Notes on nursing: What it is and what it is not* (Com. ed.) Philadelphia: Lipincott, pp. 44-47. (Original work published 1859).
- Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning. Retrieved March 19, 2013 from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:111:0001:0007:EN:PDF>
- Rogers, M.E. (1990). *Nursing: A science of unitary, irreducible human beings.* In Barrett E.A.M. (Ed.), *Visions of Roger's science based nursing.* New York: National League for Nursing, pp.5 – 11.
- Sessions, G. (1995). *Ecocentrism and the anthropocentric detour.* In Sessions, G. (ed.). *Deep Ecology for the 21st Century. Readings on the Philosophy and Practice of the New Environmentalism.* Boston and London: Shambhala Publications, pp. 156-183.
- Tudge, J., & Mokrova I., Hatfield B., Karnik R. (Eds). *Uses and misuses of Bronfenbrenner's Bioecological theory of human development.* *Journal of Family Theory & Review*, December, 2009, pp. 198–210, Retrieved March 19, 2013 from <http://www.uncg.edu/hdf/facultystaff/Tudge/Tudge,%20Mokrova,%20Hatfield,%20%26%20Karnik,%202009.pdf>
- UNESCO (1995-2012). *Education for Sustainable Development (ESD)* Retrieved March 19, 2013 from <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/>
- World Health Organization (2011). *Medium-Term Strategic Plan 2008 – 2013 Interim Assessment.* Retrieved March 19, 2013 from http://www.who.int/about/resources_planning/MTSP_20082013_interim_assessment.pdf

EVALUATION OF THE PILOT PROGRAM THE MOTHER-CHILD EDUCATION PROGRAM (MOCEP)

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Abstract

The Mother Child Education Program (MOCEP) is a home-based education program developed for indigenous children between 5 and 6 years of age by AÇEV, a Turkish NGO that has developed programs for parents and children based on wide scale scientific research in Turkey and the Arab world.

The objective of the present study is to present part of the first cycle of pilot implementation of MOCEP in Lebanon, specifically in the Palestinian refugee camps, in collaboration with ARC, regional non-profit independent organization. The design of the evaluation comprised a quantitative and a qualitative part. The methods used for the former included descriptive mean statistics, analytical statistics, regression analysis, and ANOVA. The qualitative part focused on the trainers' feedback and evaluation of home visits.

The quantitative part showed that the 88 mothers had a positive impression and expectations of the program, and accordingly, were willing voluntarily to participate in the program, the performance of both mothers and children significantly improved upon completion; children had improved their cognitive and social skills, in addition to showing more interest in learning. Mothers were happier and had a healthier relationship with their children. Further, mothers' feedback revealed highly favorable views regarding the content of the program, the trainers' skills, and the overall life and parenting skills they acquired. Regression analysis showed a causal relationship between mothers' behaviors and the children skills of interest for the program, thereby proving the usefulness and validity of implementing this program.

The program met mothers' expectations, in terms of usefulness and practicality. It particularly helped mothers in identifying their children's problems, and benefited mostly from the "Discussion Topics" because encouraged open discussion and sharing of point of views.

Mothers also gave positive feedback about the program implementation in terms of classroom suitability, trainers' skills, and usefulness of information.

In the qualitative analysis, feedback from trainers confirmed the program's effectiveness in terms of mothers' motivation, fostering more positive relationships with children, improvement in children's cognitive, language and emotional development, problem-solving skills and creativity. It also highlighted a number of shortcomings, especially related to the length of the training sessions, lack of resources (babysitting activities), variability in mothers' level of education, home environments that are unsuitable to educational activities, and negative interference of fathers. Home visits focused on the need to encourage mothers to follow instructions more fully and precisely.

Key recommendations included keeping the same interactive format, emphasizing close monitoring of mothers, reducing extraneous environmental barriers, and choosing more homogeneous groups of mothers.

Keywords: *Palestinian children, ACEV, early intervention, home-based, Arab children*

1. Introduction

The Mother Child Education Program (MOCEP) is a home-based education program aims to enrich children cognitively and emotionally in order to boost school readiness and optimal psychosocial development. In addition, mothers' role in and knowledge of child development is augmented, thus enabling mothers to feel

emotionally secure, grow more self-confident, and learn about family planning and reproductive health.

MOCEP was developed by the Mother Child Education Foundation (AÇEV), a Turkish NGO that has developed programs for parents and children based on wide scale scientific research. It has also transferred knowledge to several Arab countries with successful results.

The present study is part of the first cycle of pilot implementation of MOCEP in Lebanon, specifically in the Palestinian refugee camps.

The pilot implementation of MOCEP was developed with ARC in cooperation with its partners. It recruited mothers of pre-school aged children from target communities to participate every week in a designated social / community center in discussion groups led by the trainer. Trainers also conducted home visits to mothers to support them in the home environment.

1. Design

The study consisted of two designs: quantitative and qualitative.

The quantitative design used descriptive means statistics to analyze pretest and posttest scores of mothers' attitudes, analytical statistics to measure dependency of results on mothers' participation. ANOVA and regression analysis and SPSS package were used to interpret quantitative data. The qualitative design involved feedback from trainers and evaluation of home visits.

2. Objectives

The study aimed to measure the effectiveness of the first phase of the training program which had the following objectives:

- Provide parent training to support their roles as their children's first educators
- Empower mothers with the skills needed to promote their children physical, emotional, cognitive and social development.
- Prepare children for school, and support their development
- Empower the mother with skills and attitudes which will impact both her and her children's wellbeing for years to come.

3. Discussion

In the quantitative part, the descriptive mean statistics collected from the pre tests mean scores showed that mothers have a positive impression and expectations regarding the program and accordingly are willing voluntarily to participate in the program.

The analytical statistics during pretest revealed that children' skills and behaviors would depend on mothers' behaviors with them; thereby proving the importance of mothers' participation in the program, and that it is being applied to the right population.

Data collected in the post analysis, first with respect to descriptive comparative mean statistics (when pre and post participation scores were compared) showed significant improvement in the performance level of both children and mothers. Children have improved their cognitive and social skills in addition to showing more interest in learning. Mothers are happier and have a healthier relationship with their children.

To prove the dependency of the improvement in scores on participation in the program, a linear regression was used (analytical statistics). Overall results demonstrated a highly significant dependency relationship; therefore the improvement measured in the first section is conclusively due to participation in the program.

To further support the results obtained in the previous section, descriptive mean frequencies yielded high positive feedback from the mothers regarding the content of the program, the trainers' skills, and the overall learned skills from the program perceived necessary by mothers for application in daily life with their children.

Overall conclusions:

- Pre-tests: Pre-test scores proved an obvious voluntary willingness from mothers to participate in the program, based on the belief that the program will be very helpful to them and their children and will improve their relationship.

Regression analysis conducted on the pre-scores showed a relationship of dependency between mothers' behaviors and the children skills of interest for the program, which therefore proves the usefulness and validity of implementing this program.

- Post-tests: Following the participation of mothers in the program and having their feedback recorded again, a simple mean comparison showed an obvious improvement in the scores, both regarding children skills and mothers' behaviors.

Furthermore, to ascertain that this improvement is solely due to the participation of mothers in the program and not due to chance factors, a regression analysis proved a strong and significant dependence relationship between participation of mothers in the program on the one hand, and the improvement on the other, thereby proving the usefulness of this program and its potential to achieving its objectives.

- Descriptive Statistics – Further insights: Further descriptive statistics were employed on the rest of scores recorded to gain more insights into mothers' perception of the program.

Indeed, the scores obtained proved how the program has met mothers' expectation, in terms of usefulness and practicality.

The program seems to have helped mothers mostly in identifying their children's problems, a skill used on a daily basis.

Scores in this section showed that the most beneficial part of the program was the "Discussion Topics" which apparently encouraged open discussion and sharing of point of views, hence better understanding of the topics at hand.

Mothers also gave positive feedback about the program implementation in terms of classroom suitability, trainers' skills, and usefulness of information.

- The qualitative analysis, feedback from trainers collected from semi-structured interviews confirmed the program's effectiveness in terms of mothers' motivation, fostering more positive relationships with children, improvement in children's cognitive, language and emotional development, problem-solving skills and creativity. It also highlighted a number of shortcomings, especially related to the length of the training sessions, lack of resources (babysitting activities), variability in mothers' level of education, home environments that are unsuitable to educational activities, and negative interference of fathers. Feedback from trainers during home visits focused on the need to encourage mothers to follow instructions more fully and precisely.

4. Synthesis

As a general summary of all scores combined, the program succeeded in more effectively preparing children for school, and improving their cognitive and social skills. From the mothers' side, better family relations were achieved, in addition to fostering more positive relationship with their children through better problem identification, improved communication skills and increased self confidence, resulting in more interest in the child's schooling and personality development.

The program provided parents with adequate training to support their roles as their children's first educators, thereby empowering them with the necessary skills needed to promote their children' physical, emotional, cognitive and social development, in addition to preparing them to school.

Application was overall successful and the implementation was aligned with the defined objectives.

5. Limitations

The program's limitations focused on trainers' variables (To what extent do trainers understand it, were able to deliver it to the mothers, and in turn to what extent mothers were able to apply it effectively and efficiently), the reliance on mothers' judgment which is highly influenced by their sophistication and level of education, that no control groups were used, and the mothers' diverse educational background.

6. Recommendations

The recommendations that emerged from these findings mostly focused on the importance of capitalizing on the successful format of the program, namely discussions, simulations, role playing, home visits, corrective feedback and so forth, providing closer monitoring to mothers' implementation of the program at home, finding practical solutions to factors that undermine the effectiveness of the program (such as distraction, noise, lack of space, etc), choosing mothers with similar background, providing babysitting services during training, allocating stipends to working mothers to compensate for lost income, revisiting the reportedly boring aspects of the program, considering consolidating certain components, and inviting fathers to the training sessions.

References

- ACEV: Mother Child Foundation. English version homepage. www.acev.org
Arab Resources (Mawared) homepage. www.mawared.org
Berkman, S. (1998). A fair chance: An evaluation of the mother-child education program. Mother-Child Foundation, Istanbul.

MAGIC MIRROR ON THE WALL, IS THE MEAN DYNAMIC CLASSROOM THE BETTER OF ALL?

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Abstract

Since the central tendency measures, namely the mean, are key concepts in the statistics curriculum here we present a possible approach to a dynamic (software) classroom about the arithmetic mean. In this work we begin with an introductory approach to emphasize the importance of stimulating visualization of statistical measures by using technology available nowadays, as a means of overcoming difficulties and errors related to interpretations and also students' class motivation. New pedagogic and didactic situations are then set out.

With the help of the dynamic geometry software, Cabri-Géomètre II Plus, some uses will be presented, firstly in a didactic view as a means to visually stimulate, motivate and facilitate the familiarization with statistical concepts of the mean. Next, we will present its use in order to explore some of its properties, in an attempt to foster and reinforce cooperative work, and at the same time include a playful component, another factor for young learners nowadays.

The uses presented here, may be implemented by any teacher with basic knowledge of Cabri-Géomètre or any other dynamic geometry software. We hope that they will also be elements that may promote further interactivities within the classroom.

Keywords: *Statistics, education, concepts, software, simulation.*

1. Introduction

Due to the nature of mathematics and, as stated by Guzmán (2001), visualization plays an important role in both introducing mathematical concepts and searching for relationships between them.

Additionally, in the last few "The belief that technology can positively impact student learning has led many governments to create programs for the integration of technology in their schools" Hew and Brush (2006). Certainly, based on the use of technological tools, new teaching possibilities arise which make it possible for students to have different learning experiences, more efficient and effective, as "it has been argued that supplementing the traditional material with tools based on a visual approach and a more active form of learning could improve the effectiveness of the teaching" (Darius, Michiels & Raeymaekers, 2002, p.1).

Mathematical ideas, concepts and methods are often introduced through a wealth of visual contents, which can be represented geometrically and whose usefulness, especially in a dynamic environment, is high, both in introducing and manipulating specific concepts and also in theoretical demonstrations and problem solving.

Clearly, visualization is another step in the right direction towards improving teaching which requires in-depth thought and research to make it suitable for the teaching of specific concepts.

On the other hand, as stated by Martins and Nascimento (2009), the statistical curriculum allows developing the (dynamic) visualization of many concepts.

Nowadays the scientific progress has created an increasing need for statistical data and this, in turn, has led to the dissemination of knowledge and therefore statistical methods. Thus, there has been a shift, from a need to giving people basic knowledge to fostering their statistical literacy in today's world. In the last 50 years, there has been an increasing number of students, degrees and courses on Statistics, at the same time statistical learning was introduced at non-university level, from high school till elementary education since "(...) statistics provides a good way of achieving communication skills, information processing, troubleshooting, computer usage, cooperative and group work needed in today's curricula." (Batanero, 2001, p.118).

On the other hand, there is a growing feeling of dissatisfaction towards mathematics and, as a result, towards statistics. This phenomenon is an indicator pointing to a need for change and also a source of controversy amongst statistics teachers. Therefore, the teaching method based only on theoretical expositions, manipulation and calculation becomes inadequate. This calls for a teaching method that incorporates a hands-on approach based on real life and that encourages real and integrated acquisition of basic concepts leading to critical statistical reasoning development. Thus, there is a need to question and evaluate such aspects as adequacy of curricular contents to both teaching objectives and target students population; statistical teachers training for the different grades; didactic and pedagogic methodologies needed to achieve more efficient and effective statistical teaching and learning.

In order to overcome the formal-theoretical approach and the obstacles posed by the implementation of the present paradigm in the teaching of statistics (Carvalho, 2006), the teacher plays a crucial role in shaping their students' conceptions on statistics and statistical knowledge.

Considering the huge potential of graphic and visual exploration of the current technological environment and the distinctive nature of statistics, visualization tends to be perceived as an important aspect both for building up and transmitting concepts, and also for discovering new relationships (Guzmán, 2001).

So the work presented here intends to: improve the quality of statistical teaching by using dynamic geometry software; disseminate the potential of the dynamic geometry software, as it supplies a dynamic and visual feedback to teaching statistics; facilitate the teachers' work by revealing ideas, paths and methods of using dynamic geometry software in statistics classes; and create dynamic visual forms to reinforce and enable students to assimilate concepts and explore extreme situations in order to consolidate knowledge acquired and increase the learners' critical thinking.

Dynamic geometry software applications Cabri-Géomètre II Plus permits the immediate visualization of changes stimulating the students' participation in the classroom discussions (smaller groups or the all class), therefore the mean properties will emerge – through the applications uses presented – in a playful way and may be perceived and learned easily.

2. Arithmetic mean

Central tendency measures, like the mean, have a special interest as they are frequently found in daily life and as the understanding of these measures is an important component of statistical literacy (Groth, 2006). Consequently, from the vast research work with students, pre service and in service teachers about this concept we can find, even in the present, some problems and issues to solve. For instance, even Grade 1 exemplary teachers do not have conceptual knowledge of some basic statistical concepts like as the mean (Jacobbe, 2008). A frequent mistake in computing the mean was found by Martins et al. (2009), when the mean was computed using absolute frequencies in coded qualitative variables. Also incorrect interpretations are

made based on the maximum value, the minimum value, a specific value, the median and the mode (Chatzivasileiou et al., 2010; Leavy & O’Loughlin, 2006). In order to enlighten the understanding of the mean, Leavy & O’Loughlin (2006) indicate that there are two types of understanding the mean – one is the conceptual and the other is the procedural. Besides, interpretations of the mean as the value that represents the data set as if all data were equal (fair share), or as the point where higher values compensate lower values (balance point) show conceptual understanding of this concept. About the mean properties to its teaching and learning and as pointed out by Strauss and Bichler (1988, apud Batanero et al., 1994) studied the evolutionary awareness of the concept of the mean in students aged between 8 and 12, and identified the following properties: The mean is a data point located between the extreme values of a distribution; The sum of the deviations of data points about the mean equals zero; The mean value is influenced by particular values in a data set; The average does not have to be one of the values in the set; When the mean is calculated, the result may be a fraction (this may not make sense for the variable under consideration); When the mean is calculated, any value of zero must be taken into account; The mean value is representative of the values that were averaged.

In order to help teachers to get young learners to “build” the concept of mean and deducing some of its properties, we devised: a GAME and a SCALE.

2.1. The game

The game (Figure 1) is based on the idea that the arithmetic mean represents a given value such that, if all the elements of a set have it, its total sum would equal the sum of all values of the original data. The arithmetic mean is computed by adding all the values of the data and dividing it by the number of data. Therefore, on the first stage of the game presents six equal “recipients” with a maximum capacity of 5 and an initial score of zero points. This simple game allows simulating a real-life experience with immediately monitoring system to deal with measurements and an accurate computation of the arithmetic mean. By means of cooperation (small groups or all the class) confrontation emerges when several strategies and experiments are discussed. The use of negative numbers may be a controversial issue, which calls for the maximum attention and help from the teachers in order to tackle it by other means (for instance, internet applets) and/or examples.

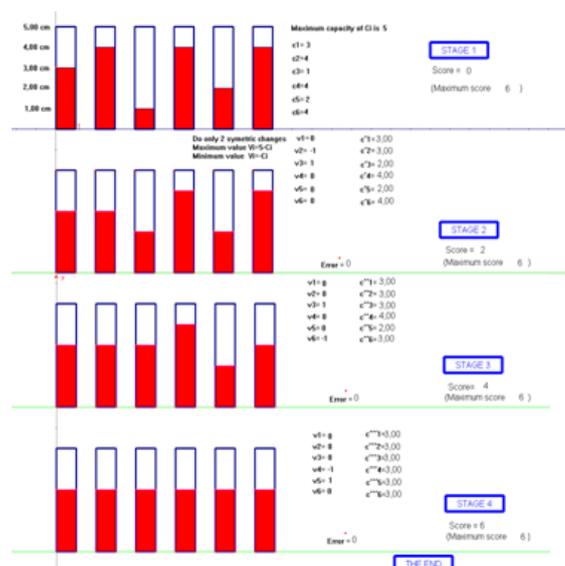


Figure 1. Stages of the game

2.2. The scale

The mean maybe viewed as the fulcrum of a data set. That is to say, that the sums of its distances to data lower than or equal to the mean equals the sum of its distances to data that are higher. In other words, total sum equals zero, or “the arithmetic average is the score around which deviations in one direction exactly equals deviations in another direction” (Leavy & O’Loughlin, 2006, p. 55). Then, the arithmetic mean can be interpreted as an x value (fulcrum) that it is the centre of gravity of a system made up of N points assuming unitary weights.

Taking the relationship between mean and geometry as the basic principle (fulcrum), the scale Cabri-based application was created. There are six points on a straight line, x_1, \dots, x_5 , including the M point, which can be moved along the straight line. When the M point is moved, the value V_{sum} appears on the screen, as it represents the measure of the sum vector of all the differences between the x points and M . Then, the mean can be obtained dynamically by moving the M point along the straight line in such a way that the value V_{sum} equals zero. As the M point is moved, one can view a “Scale” which is evenly balanced whenever M has the same value (i.e. the x coordinate value) as the mean.

In the other way it goes off balance whenever M moves away from the mean. This simple graphic visualization shows the relationship between “weight” (the gravity centre, fulcrum) and the mean (see Figure 2). Finally, this application allows to see the analytical validation for the arithmetic mean value.

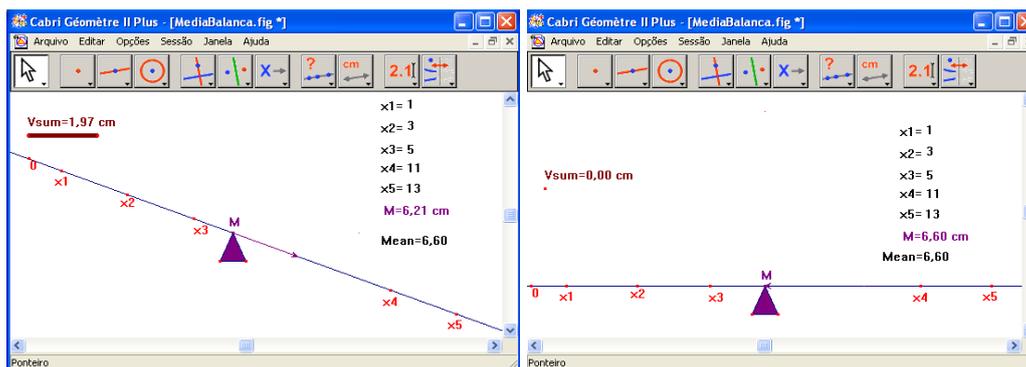


Figure 2. Mean on the scales

Other possibilities included the points on a fixed straight line, assuming unitary or non-unitary frequencies and create a scale that represents the equilibrium whenever an M point coincides with the mean, and goes proportionally out of balance (non equilibrium) as the M point moves away from the mean.

Moreover, another application was created for continuous data, as a simulator of a histogram and with the same approach used in the previous applications.

Those applications may be used by teachers (or their students) for different Grades. The concept of arithmetic mean and its proprieties (Batanero et al., 1994) are dynamically explored for different data types.

3. Final remarks

The applications presented here are easily implemented by any teacher with basic knowledge of Cabri-Géomètre or other dynamic geometry software. They will achieve their original objectives if, through the potentialities of dynamic geometry, they will be used in the classroom. Therefore they are versatile examples capable of stimulating interpretation and comprehension of the mean concept and some of its properties.

Other examples could be built by the teachers, as these applications offer a wide range of possibilities. The only requirement to fulfil this purpose is using one's curiosity, reflection and imagination.

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References

- Batanero, C. (2001). *Didáctica de la Estadística*. Granada, España: Dep. de Didáctica de la Matemática, Universidad de Granada.
- Batanero, C., Godino, J., Green, D., Holmes, P. & Vallecillos, A. (1994). Errores y dificultades en la comprensión de los conceptos estadísticos elementales, *International Journal of Mathematics Education in Science and Technology*, 25(4), pp. 527-547.
- Carvalho, C. (2006). Desafios à educação estatística. *Boletim da Sociedade Portuguesa de Estatística – Ensino e Aprendizagem da Estatística*, Outono de 2006, pp. 7-9.
- Chatzivasileiou, E., Michalis, J. & Tsaliki, C. (2010). Elementary school students' understanding of concept of arithmetic mean. In C. Reading (Ed.), *Proceedings of the 8th International Conference on Teaching Statistics*. Ljubljana, Slovenia.
- Darius, P., Michiels, S. y Raeymaekers, B. (2002). Applets for Experimenting with Statistical Concepts. *ICOTS 6*, South Africa.
- Groth, R. E. (2006). An exploration of students' statistical thinking. *Teaching Statistics*, 28(1), 17-21.
- Guzmán, M. (2001). *El rincón de la pizarra – ensayos de visualización en análisis matemático – elementos básicos del análisis*. Colección "Ciencia Hoy". Madrid, España: Ediciones Pirámide.
- Hew, K. & Brush, T. (2006). Integrating technology into K-12 teaching and learning: current knowledge gaps and recommendations for future research. *Education Tech Research*, 55, pp. 223-252.
- Jacobbe, T. (2008). Elementary school teachers' understanding of the mean and median. In C. Batanero, G. Burrill, C. Reading & A. Rossman (Eds.), *Proceedings of the ICMI Study 18 and 2008 IASE Round Table Conference*. Monterrey, Mexico.
- Leavy, A., & O'Loughlin, N. (2006). Preservice teacher understanding of the mean: Moving beyond the arithmetic average. *Journal of Mathematics Teacher Education*, 9(1), 53-90.
- Martins, C., Pires, M. V., & Barros, P. M. (2009). Conhecimento estatístico: Um estudo com futuros professores. *Proceedings of the EIEM: Números e Estatística*. Vila Real, Portugal.
- Martins, J., Nascimento, M., (2009), *Estadística con software de Geometría Dinámica*, Escuela de Matemática del Instituto Tecnológico de Costa Rica (ed.) *Actas do I Encontro de Didática de la Estadística, la Probabilidad y el Análisis de Datos (I EDEPA)* (CD- Rom), Cartago, Costa Rica.

A PROPOSAL FOR ENHANCING TEACHING INNOVATION THROUGH COLLABORATION NETWORKS ON INTERNET

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Abstract

University teaching innovation responds nowadays to changes and challenges in the European Higher Education Area: long life learning, student-centered teaching, open education and e-learning, changes in professor role, etc. The main objective of those changes is to improve higher education and to promote the integration of European education systems. Our proposal aims to study whether Information and Communication Technologies, ICT, help professors to exchange teaching experiences and to establish new teaching innovation networks. Thus, we have analyzed how different Higher Education roles –innovation managers, innovation project coordinators and professors in general– make use of present Internet resources in order to improve their teaching innovation activities. Working methodology involved the development of a set of specific surveys customized for each group of interest. Surveys were answered by nearly 600 people from selected roles. Some of the obtained results are: recompilation of interesting sites related to teaching innovation; Internet usage habits of respondents to access information, initiatives or to meet collaborators on teaching innovation; spread use of different general social networks – facebook, twitter, etc.– and general interest in the existence of specialized portals that integrate resources and services on the network. Study results have helped us to develop a specialized web portal that meets encountered needs. This website integrates different sources of information and available services in an easy and comfortable user interface. Also, the website not only allows users to look up information but to publicize their innovation activities and to meet potential collaborators. In this way, we expect that this system will contribute to establish new higher education teaching innovation networks. Our study also provides system usage results and statistics during its first months of operation.

Keywords: *Teaching Innovation, Collaboration Network, Web Resource, Higher Education.*

1. Introduction

Innovation in higher education is a reality. New methodologies and tools that drive implementation of the new educational model are being developed (Barbancho, M. Carballar, A. et al., 2005). However, the emphasis of change has focused solely on the issues surrounding the student as the recipient, but has not followed the same approach in teacher training. That is to say, the use of active methodologies or personal learning over the lifetime of faculty is not being encouraged; a kind of learning where professors can choose their learning according to their specific interests.

In this sense, the establishment of a contact or social network to exchange of ideas or learning in different training areas is essential. These spontaneous communities are called Learning Communities and they are defined as “shared interest domain in which the components interact and learn together to develop a shared repertoire of resources” (Etienne Wenger, 1996). To achieve this end on Teaching Innovation, we have studied the use of Information Technology and Communication (ICT) as a mean to encourage the dissemination of such initiatives and promote linkages between professors and university researchers. However, although this

technological approach could, in principle, be very attractive, it must be accompanied by a parallel study of the real needs, habits and knowledge in general about professors' current use of ICT.

The use of ICT and in particular web 2.0 (O'Reilly T., 2004) as a tool for dissemination, social cohesion and cooperation, could be key in the research process to meet the needs of university professors to improve and encourage collaboration between Universities in the development of projects and actions of educational innovation in general.

Our proposal aims to study whether Information and Communication Technologies, ICT, help professors to exchange teaching experiences and to establish new teaching innovation networks. Thus, we have analyzed how different Higher Education roles –innovation managers, innovation project coordinators and professors in general– make use of present Internet resources in order to improve their teaching innovation activities. This analysis has allowed us to collect interesting information about sites related to teaching innovation; Internet usage habits of respondents to access information, initiatives or to meet collaborators on teaching innovation; spread use of different general social networks – facebook, twitter, etc.– and general interest in the existence of specialized portals that integrate resources and services on the network. Study results have helped us to develop a specialized web portal that meets encountered needs.

2. Experience Description

This project consists of three phases. In a first phase, we developed a collection of surveys to know the needs and opinion of different stakeholders. With those valuable data, we analyzed information and obtained requirements and guidelines which were taken into account in the development of a kind of social web portal. In the following phase, we researched technological solutions to build a low-maintenance web site which reflected obtained requirements.

Three surveys were prepared for interest stakeholders roles. One of them was aimed to Responsible for Teaching Innovation from regional Universities, which was answered by 20 persons from eight Universities; other survey was designed for professors which were participants in teaching innovation projects during the last two year. It was answered by 358 participants. Finally, third survey was aimed to faculty in general and was fulfilled by 245 professors. Among the final obtained results, we can highlight: 98,19% faculty consider than Teaching Innovation (TI) on Higher Education was relevant for his teaching labor and 72,29% of them participated actively on Teaching Innovation Projects (TIP), even in many of them (83,18% participated on 4 TIP at least).

The ten TIP categories more covered by professors were *Teaching Innovation Methodologies* (68,42%), *Materials & Resources On-line* (58,65%), *Assessment Systems* (34,96%), *Tutoring and Mentoring* (31,2%), *B-learning and E-learning Environments* (27,82%), *On-line Campuses* (25,56%), *Learning Management Systems* (25,19%), *Learning for Teaching* (21,05%), *Multilingualism* (19,92%) and *Open Educational Resources* (18,8%).

All the Responsible for TI (100%) considered that it would be of interest to count with an interuniversity website to collect TI initiatives, in addition to their local websites. They agreed that TI could benefit from possibilities offered by services and on-line tools and that on-line collaboration encourage TI. Almost all TIP participants (94,33%) thought that an university website to allow interchange of TI information, contacts and TIP on which they could participate would be appreciated.

TIP participants considered that services offered by such TI website would be (from highest to lowest percentage): *TIP reports* (90,99%), *TI initiatives and announcements* (86,27%), *Possibility of contact with people interested on TI* (83,26%), *Ability to form collaboration groups on TI* (66,09%), *Reports of people involved on TI* (63,09%), *Automatic notification about TI news* (60,94%), *TI forums* (57,94%), *Self-publishing information about TI* (56,22%), *Generic Information about TI* (50,64%) and *Integration with other Social Networks like Facebook, Twitter, Researchgate, LinkedIn, etc.* (34,76%).

3. INEDUN Website

Surveys results confirmed initial hypothesis that TI information was so dispersed to be of real use. It was due to users and TI related information dispersion on different social networks or specialized platforms. This fact suggested us the possibility to develop a website which was named INEDUN (acronym in Spanish for University Teaching Innovation, *INnovación EDucativa UNiversitaria*) with the tagline “Improving the innovation”. This website is available at <http://redsocial.ujaen.es/inedun>. This portal allows recollecting and bringing together these types of TI related Information and Services:

- *Static Information* obtained from survey participants suggestions: TI official websites, Innovation Groups references, University Innovation Responsible contacts and websites, Innovation Events and links towards specialized portal on innovation

- *Automatic management of new users* in a simple manner and without the need of creates another service account. This was a key from the beginning to encourage participation without complicated registration methods. So it was determined than only essential contact information was required to get in touch. User login was performed through a Federated Authentication Service (SIR, 2013), based on (SAML, 2013) open standard, in which users made use of their own University access credentials. In this way, the portal can be observed as a natural extension of other services at the user University. Also, users can optionally include all the information about his or her digital identifies on the net: facebook profiles, twitter accounts, etc.

- An *interaction service* for establishing contacts among professors and to share TI information or create collaborative groups for propose and participate on specific TI projects. In that sense, the system is organized in a simply way to encourage innovation among participants. This main objective is covered with a proposal system on which participants can inform, ask for collaborators or even offer themselves to participate on specific TI actions. These proposals are of one of four types:

- *Informative proposals* used by professors to announce or inform about current TIP they are working in, websites or resources of interest for other people.
- *Conferences/Workshops on TI* where professors could participate
- *Call for collaborators*. This proposal is used by professors who have an idea or initiative in which they are currently working and want to contact with people who collaborate with them. For example, submit a TIP proposal to an existing call, participate on current projects to share data or methodologies, etc.
- *I want to collaborate in...* for people with no current projects but interested on belong to existing groups, initiatives, or simply being to work on TI

Furthermore, proposals can be classified by participants using different criteria to help other users to find them. Users can provide keywords to proposals, and these keywords are suggested on typing (in a similar way to Google input search). Also, proposals can be assigned to knowledge areas and to TIP categories indeed. For example, a proposal could be classified in “Computer Science” knowledge area and be associated to “Collaborative Assessment Methodologies”. In the first case, knowledge area is defined by a closed-term classification or Taxonomy. In the second case, Teaching Innovation areas are defined with an open-term classification or Folksonomy, where terms can be added or reused by participants for other proposals. Other

important classification method is relevance of proposals, which is materialized by means of a rate system, using an intuitive 5 stars gadget.

Last, but not least important, the system was designed with a minimum of maintenance needs. There are other projects based on public websites which need continuous and/or professional technical support, which supposed an important quantity of funding for maintain the system updated to prevent, for example, security risks or system failures. This has been achieved using an open source Content Management Server, Drupal (Kelsey, T., 2012), which is configured to automatically self-update with security patches or improvements from Drupal community repository. In fact, plugins selected to implement certain features have been chosen considering the level of community support, to guarantee their updates on future. We strongly recommend these issues when implementing any type of on-line service to ensure its continuity. On the other hand, due to its features simplicity, there is almost no need of supervising/moderating contents nor content abuses. It must be taken into account that users access using their own credentials in their Institution and they are identified, which prevents anonymous abuse. Logically, anonymous identity has nonsense in this kind of website to encourage, precisely, contacts between professionals. Finally, with respect to technical implementation of federated login is worth highlighting the importance of standard SAML instead of other distributed login solutions such as Facebook, Google or Twitter login service. The main reason is, again, to assure that only faculty members can access to the system in an identified manner. Furthermore, this protocol can be easily integrated into other institution web services.

4. Discussion and Conclusions

The experience has been of great utility, in obtained results, which could be used by University Community, and in working methodology and TIC use for interuniversity collaboration in general and on teaching innovation in particular. The website developed for University teaching innovation provides interesting ideas which may be reused in other collaboration contexts and even in interuniversity research. On the one hand, this is an easy-use system, mainly based on participants' needs and proposals. They themselves inform about their current projects, look for other people with the same interests to do networking or to look for other collaborations to participate on new initiatives. Also, users registration and login is totally transparent and simplified because it is integrated in their own Institution system by using SIR Federation. In that sense, we have noted that proposal site can be considered as a natural extension of user institution website. On the other hand, technology resources used, based on open source projects, provide a simply maintain operation and assure updating and improvement capability of the system on future. As it has been discussed, this is a key concept in contrast with commercial or proprietary solutions.

Also, proposed ideas can be integrated independently on existing websites due to simplicity of use or the use of open standards. In that sense, some informational only TI websites could be transformed on an interactive portal where users could interact, providing and sharing ideas or projects.

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References

- (Barbancho, M. Carballar, A. et al., 2005) Barbancho, M. Carballar, A. et al. (2005) *Informe sobre Innovación de la Docencia en las Universidades Andaluzas*. CIDUA. Retrieved March 21th, 2013 from http://viceees.ujaen.es/files_viceees/CIDUA.pdf
- (Kelsey, T., 2012) Kelsey, T. (2012) *Drupal 7 primer: creating CMS-based websites: a guide for beginners*. Boston, Mass.: Cengage Learning.

- (O'Reilly T., 2004) O'Reilly, T. (2004). What Is Web 2.0. O'Reilly Network. Retrieved March 21th 2013 from <http://oreilly.com/web2/archive/what-is-web-20.html>.
- (SAML, 2013) Security Assertion Markup Language, SAML (2013). Retrieved March 21th 2013 from <http://saml.xml.org/>
- (SIR, 2013) Servicio de Identidad de RedIris, SIR (2013). Rediris. Retrieved March 21th 2013 from <http://www.rediris.es/sir>.
- (Wenger, 1996) Wenger, E. (1996) Communities of practice: the social fabric of the learning organization. HealthCare Forum Journal, July/August, Vol. 39, No. 4, pp. 20-26.

LEARNING AND AGEING: PROJECTS PEER, VINTAGE, FORAGE AND MATURE

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Abstract

Learning in later-life can bring many different benefits for individuals, families, communities and European states. It can help to overcome social exclusion and isolation, and can promote older people's mental and physical health. Adult education may assist in maintaining independence and general well-being in later life and it enriches the lives of individuals and communities. Are presented four European projects falling in these concerns and focus on the relationship between learning and ageing. The PEER project presents the motivation factors that lead seniors to learn from peers using web 2.0 tools, and the distribution of platforms in Europe using web 2.0 tools to peer learning for seniors. The VINTAGE project presents the necessities seniors have to use ITC and the way they prefer to learn how to use computers. The ForAge project collects and presents the learning experiences which are available to seniors, within EU. The Mature project presents research results on ways that trainers and adult educators can use to engage seniors in learning.

Keywords: *Learning. Active ageing; Lifelong learning; web2.0 tools*

1. Introduction

Europe is aging. The age of the European population raises questions on almost all aspects of life. An active aging in Europe requires a new vision of older people and their respective roles, more consistent with the reality of the century. XXI.

The lifelong learning is a key component of active aging, ensuring the development of skills and knowledge updated until the end of the career and after the reform to improve the functioning and social well-being of the individual and increase the potential of older adults, to actively contribute to society through paid work, volunteering, active citizenship and self-help for independent living.

The relationship between a higher educational level and a longer life with better health has been proven in many countries. In addition, the roles of older people in the workplace, as volunteers or informal counselors, contribute to their personal health and well-being of communities.

Active aging is the process of optimizing opportunities for health, participation and security, in order to improve the quality of life as people age. This applies to both individuals and population groups. Allows people to realize their potential physical, social and mental development throughout life and to participate in society, providing them with adequate protection, security and care when they need it.

The word "active" refers to continuing participation in social, economic, cultural, spiritual and civic fields, and not just the ability to be physically active or to participate in the labour force. Older people who retire from work, sick or living with a disability, can cooperate actively with their families, friends, communities and nations. Active aging aims to increase healthy life expectancy and quality of life for all people as they age.

Maintaining autonomy and independence for older people is a key objective in the context of active aging policy. Aging takes place in the context of friends, coworkers, neighbors and family. That's why the interdependence and solidarity between generations are important principles of active aging.

It becomes relevant to explore teaching methods and learning environments that are being used effectively to promote learning throughout life of older people. Educational programs of enrichment and skills development for older people must be continually supported, promoted and facilitated, as part of the process of active aging.

We can achieve better suited environments to aging, increasing public sensitivity to the needs of senior citizens and promoting awareness about the contribution they can make and why should mobilize all the human capital they represent. Public campaigns such as the 'European Year of Active Ageing and Solidarity between Generations 2012' are sparking new initiatives, which need to be shared and analyzed.

2. Project PEER

Following the motto of the ancient Roman philosopher Horace "Sapere Aude!", meaning Dare to know!, PEER is a Grundtvig multilateral project, funded by the Lifelong Learning Program by European Commission. It is promoted by a partnership with organizations from 6 EU countries: Austria, Poland, UK, Netherlands, Germany and Portugal.

It aims to facilitate peer learning, based on Web2.0 tools customized for adults over 50 years of age (50+).

The number of social platforms 50+ online has increased significantly, however, its potential as a learning environment is seldom recognized.

In our increasingly technological society and focusing on mobility, social networking platforms can pose a great potential to support the learning of seniors. Moreover it is available online a significant number of Web2.0 tools. However, these tools are typically designed for young and only partially meet the needs of seniors.

2.1. Main results until now...

Motivational factors for peer learning on social platforms online 50+ - report available. This report focused on three areas:

1. A literature review of theories and research focusing on the motivational factors that influence learning in social networking platforms of older people;
2. Participatory workshops, interacting with 21 participants over 50 years, to explore the factors that motivate them to share information and knowledge with peers in settings online and offline;
3. A survey of 50+ platform operators to identify tools already in use in existing 50+ platforms and tools, which could be considered useful from the standpoint of the operators.

This research allowed to have available on the website of the project a map of 50+ accessible platforms in the EU context.

Bank of tools for learning with senior peers - report available.

There were selected, from the results obtained from the research, a preliminary list of web2.0 tools to support the development of the Learning Package PEER. The list includes tools with potential to support peer learning activities on 50+ platforms like Dropbox, or Openmeetings or Doodle. The report describes the methodology for the selection of tools and define their features. Also, list possible solutions and discuss the pros and cons for selection.

These reports are available on project website <http://www.peer-learning-50plus.eu/>

3. Project VINTAGE - Valorization of INnovative Technologies for AGing in Europe

VINTAGE is a Grundtvig multilateral project funded by the Lifelong Learning of the European Commission to propose innovative solutions to make ICT more accessible and more attractive, by promoting the benefits, quality of life and independence that older people can obtain, in each country of the partnership, while designed to motivate decision-makers from different social areas for the advantages of creating a European network that can sustainably exploit the project results in the future in different European countries that find themselves grappling with new needs and new problems.

The partnership consists of organizations with different institutional experiences, skills and from different European regions. The diversity of the partnership ensures a wide range of perspectives and allows to enhance the discovery of new ideas beyond the traditional structure.

From a geographic perspective, the partnership is geared towards the Mediterranean Sea, from Portugal to Turkey, passing through Spain, Italy and Greece. These countries, including Romania and the UK, were selected taking into account the special attention that the EU attaches to particular geographical areas, such as programs SUL_ESTE Europe and MED.

The main target group of the project V.IN.T.AGE is a population aged over 65 in each of the seven countries that make up the partnership. Since the project aims to promote innovative technologies for better aging in Europe, all activities were designed to reach the largest possible number of older citizens, and to promote among them potential benefits that can derive from the use of computers and internet: health, geographic isolation, loneliness, education, cultural activities and other services.

3.1. Main results until now...

A research was carried out in the various partner countries entitled "Why don't you like me? - Where and when old people face the greatest difficulties in the use of computer and software and how these can be overcome." This research included:

- research on statistics and legislative aspects
- focus group with groups of senior
- questionnaires to senior.

A summary of the results can already be found on the project site (<http://www.vintageproject.eu/>), in the various languages of the project and the final report is available in English. Overall, seniors prefer to use ICT to communicate with family and friends, to perform internet searches on topics of interest, and access to services. Often don't use ICT because they cannot afford the cost of a computer, do not know how to work with the software, and this software may not be adapted to their needs.

Considering the various results collected during the search, and the suggestions collected on focus group with seniors exploring the VINTAGE software, the partnership was able to present the final version of this software. The VINTAGE software is free and presented with the support of Ubuntu - free and open source software. Is adapted to the needs and interests of seniors, and is available by the partnership. The training course to seniors on VINTAGE software just finished, with great success, in all partner countries. And it's available a Online DataBase for enterprises to register and donate computers that would be dismantled; then, organisations working with seniors can search for computers, collect it and install VINTAGE software, donating useful computers to seniors.

4. Project ForAge - for later-life learning building on European experience

The project is a multilateral European network that is concerned with the promotion and communication of learning experiences throughout life for the elderly, in order to create a practice with the highest standards throughout Europe.

Since the first European Year of Older People and Solidarity between Generations in 1993, there were many exchanges pan-European, projects, training events, seminars, programs and networks involved with learning in the later stage of life. The numbers increased significantly with the momentum of the Grundtvig program, which funded imaginative and innovative work across Europe.

The project ForAge is a network funded by multilateral Grundtvig Lifelong Learning Programme of the European Commission, which was designed to extend and better use of all these rich experiences, building on them, sharing information, analyzing and assessing the value and impact, education policies on aging, disseminating research results and creating networks to do all this.

Its main objective is to be a critical point of access to information about senior learning in Europe, connecting various activities and projects. Intended to extend the recognition of the value of learning for the elderly as a means of promoting inclusion, participation and intergenerational solidarity in European societies. The network aims to contribute to international research, be an evidence base for learning later in life and increase access to ideas and innovative practices and progressive in Europe. The project also aims to analyze the most effective ways to produce benefits for the elderly resulting from learning and promote these activities to a large number of people.

The Partnership consists of organizations from 18 countries: United Kingdom, Austria, Cyprus, Finland, Greece, Hungary, Italy, Netherlands, Poland, Portugal, Czech Republic, Romania, United Kingdom, Slovakia, Austria, Slovenia, Spain and Ireland.

The partnership expects that ForAge continues after three years, creating a mechanism that is based on the Internet for sharing information accessible and reliable - a kind of Google for senior learning in Europe. The network will use its best efforts to publicize the project and increase the number of countries and organizations involved, in order to make the work more sustainable.

5. Project MATURE

MATURE stands for Making Adult Teaching Useful, Relevant and Engaging. It is a Grundtvig multilateral project co-funded by the European Commission's Lifelong Learning programme.

The project began in October 2012 and ends in September 2014. It will develop training for adult educators on the theme of engaging and motivating older adults who, because of disadvantage, find it difficult to participate in group learning. The MATURE team will: conduct research; develop and deliver units of training for face to face and on-line use; create a booklet for organisations outside education who act in as intermediaries between older adults and the services they need or are entitled to.

The MATURE project is composed of a number of interlinked actions leading to the production of a range of material for use in Continuing Professional Development opportunities for adult educators.

Actions include:

- research into participation in group learning and disadvantage among older adults;
- the translation of research findings into deliverable training, on-line and face to face;
- the development of advice for agencies outside education on the benefits and practicalities of engagement in learning for older people;

- sharing project outcomes and products with national and European contacts in a position to use and develop them further.

All the results are published on the project website <http://matureproject.eu/>

6. Conclusion

In the European Year of Active Ageing and Solidarity between Generations, which aims to:

(1) facilitate the creation of a culture of active aging, with better opportunities for older women and men play their role in society;

(2) combating poverty and social exclusion;

(3) encourage volunteering and active participation in family life and society, and

(4) encourage aging with dignity, it becomes relevant to disseminate European projects concerned with this issue and, in particular, the role that lifelong learning life can play in combating discrimination, negative stereotypes associated with age, adjusting tools and providing compelling learning able to help fulfill a society for all ages!

References

Antunes, M.H., (2012). *Os Projetos Europeus LARA, PEER, VINTAGE e ForAge: A Aprendizagem e o Envelhecimento*, paper at the conference “A Arte de Bem Envelhecer: Perspetivas do Envelhecimento Ativo”, organized by CeFIPsi: Centro de Formação e Investigação em Psicologia, available in <http://www.peer-learning-50plus.eu/en/attach/Abstract.pdf>

Forage project website <http://www.foragenetwork.eu>

Mature project website <http://matureproject.eu/>

Peer project website <http://www.peer-learning-50plus.eu/>

Vintage project website <http://www.vintageproject.eu/>

THE IMPACT OF ELECTRONIC TUTORIALS ON ORTHOGRAPHY OF MOTHER TONGUE AT PRIMARY SCHOOLS

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Abstract

Recent years have shown a boom of electronic language tutorials at primary schools and their more frequent use during language lessons. The quality of native language writing among young Czech students has deteriorated dramatically at the same time. A great number of teachers argue that orthography of written language is deteriorating due to an increased use of electronic tutorials at schools which are supported by dichotomous e-learning systems based primarily on clicks by the electronic mouse on a single trained letter or word. In 2011, the research project dealing with the Czech language tutorials was initiated and designed in a partnership with primary schools in the Czech Republic and was finished in 2012. The authors defined the following research questions: (1) "Have language tutorials based on dichotomous tests had an impact on written language of young learners?"; and (2) "Are electronic learning programs at primary schools appropriate for mother tongue teaching?". The first quantitative experiment tested a sample of 200 Czech respondents divided into parallel experimental (students aged between 11 and 15 who were taught by Czech language tutorials) and control groups (students taught without this electronic help). The research compared results of Czech orthography tests. The most widely used educational tutorials, namely Terasoft and EMPE company were investigated. Orthographic language tests which are often used at schools during Czech lessons were randomly selected and study results of both groups before and after learning of the specific topic were compared. The empirical data obtained from the evaluation tests were examined via Statistica 10 to verify or falsify a zero hypothesis that teaching of Czech orthography at primary schools with language tutorials does not cause more errors in writing coherent sentence structures. Zero hypotheses were based on the results of the Mann-Whitney U test rejected in all grades and showed statistically significant differences in the results of experimental groups at each grade separately. The researchers showed that the dichotomous exercises in language tutorials are due to the focus on isolated words an inappropriate tool for teaching Czech orthography and, therefore, they should not be used as the sole means of e-learning technology in mother tongue teaching. Findings of this experimental research provide a compelling case for the importance of additional research on the impact of electronic language tutorials on written language of young children.

Keywords: *Czech language, electronic tutorials, orthography of mother tongue*

1. Introduction

The current trend of teaching the mother tongue tends to implement e-learning programs, which, among other things, provides schools which use it a pleasing image of modern educational facilities. On the contrary, Dvořáková writes that during the research in France in 1991 among students of language courses 85-96% of respondents prefer printed learning materials instead of electronic tutorials [Dvořáková, 1999]. European Social Fund (ESF) financing has brought funds to educational institutions allowing to develop or purchase tutorials for teaching in individual subjects during the last two years. This has changed their methodology entirely. According to a Ministry of Education report of November 2011, 90 percent of primary schools participated in the project ESF - EU money for schools. In the Czech language lessons

and in other subjects, the latest educational programs are being used, and investments in computer labs moved the students to the computer screen, where the training is based on a special program mainly practicing a single phenomenon. Shohamy claimed that there is the need to include aspects of test use in construct validation originates in the fact that testing is not an isolated event; rather, it is connected to a whole set of variables that interact in the educational process. Results obtained from tests have serious consequences for individuals as well as for programs, since many crucial decisions are made on the basis of test results [Shohamy, 1993]. Many teachers of the Czech language, initially skeptical of mouse-clicking programs, became convinced, based on testing task results, that this language teaching method is a useful and effective supplement of traditional teaching process. All this is confirmed by the electronic test results of checking the effect of such programs on teaching mother tongue in primary schools within the period of 2010 to 2012, comparing two parallel sets of 5th to 9th class pupils – one using tutorial software and the other with classical training. The results were evaluated based on completed e-learning tests with dichotomous responses. Conclusions have proven significantly better test results within the group using computer-aided teaching. On the contrary, the pupils from the experimental group were significantly worse in the classically written tests and dictations, having no choice of dichotomous option and forced to write whole words, phrases or sentences. Therefore we decided to start a research project on testing groups of 5th to 9th class primary schools pupils, testing language phenomena on complex structures, where the pupils were forced to fill-in whole words or phrases manually. We disrupted their automated habits of dichotomous choice of an isolated phenomenon, so typical for modern educational programs that do not reflect written text integrity as a complex and focus only on isolated letters, special words or declination or conjugation paradigm of the Czech language. We have analyzed all written tests and gained interesting material, reflecting the risk of certain software for Czech grammar training, and highlighted its shortcomings for the acquisition of mother tongue skills in writing.

With the modernization trend of mother tongue teaching, a whole series of software tutorials were prepared in order to facilitate work for both teachers and students, especially in Czech language lessons, where the frontal teaching method has prevailed so far, with a predominance of written tasks in workbooks. Most of this software for mother tongue teaching is based on selection from a finite set of answers, often only dichotomous. Writing such programs is very simple, but their structural simplicity tempts their authors to testing details and isolated facts only. The consequences that this form of teaching brings can influence the acquired language competencies very significantly. Unfortunately, the issue of the proper use of training programs in the field of mother tongue teaching is not popular among researchers and there is not many publications in this area [Dostál, 2009].

2. Design

We started the research in February 2011 and ended in January 2012. For the experiment we chose the most widely used Czech language tutorials - Terasoft and EMPE software. A sample of 200 respondents was divided into parallel experimental and control sets of pupils from 5th to 9th classes. Validity of the results was subsequently verified by statistical data processing in Statistica 10 software. The written tests were scheduled regularly on a monthly basis, focusing on a selected portion of grammar curriculum each month. The research questions were defined by the authors as follows: (1) "Do language tutorials based on dichotomous tests have an impact on written language of young learners?", and (2) "Are electronic learning programs at primary schools appropriate for mother tongue teaching?". The test results were processed collectively regardless of grade at first, i.e. all the results of the 5th to

9th class were divided into group A (control) and B (experimental). The null hypothesis stated that the experimental training using dichotomous closed tasks in the tutorials has no effect on student performance. The first result is evident from the box-chart showing the distribution of the error rate already:

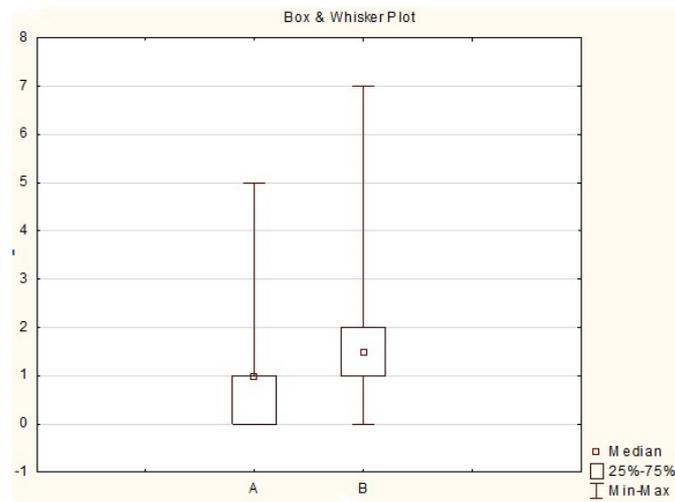


Figure 1. Results of the control and experimental groups (Feb. 2011 – Jan. 2012)

The results of the experimental group B have shown higher incidence of errors according to this chart. To test the null hypothesis, we performed normality test for both sets A and B first, using both Shapiro-Wilkes test and Lilliefors test. In either case, the hypothesis that both sets come from a normal distribution had to be rejected, as can be seen from histograms:

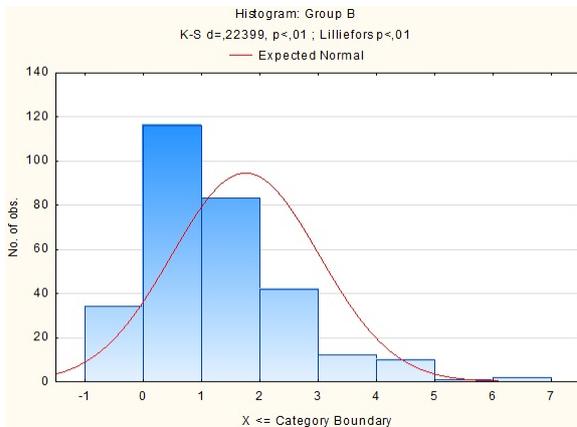


Figure 2. Control group A histogram

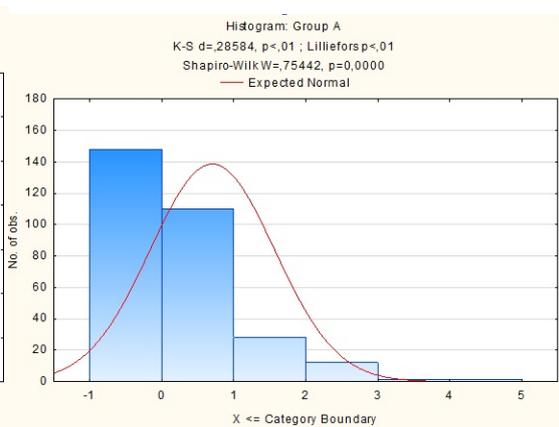


Figure 3. Control group B histogram

For this reason, we chose two-sided unpaired nonparametric Wilcoxon test (often referred to as the Mann-Whitney U test) for null hypothesis testing with the following result:

Table 1. Results of the Mann-Whitney U test

Mann-Whitney U Test (ABall.sta)									
By variable Group									
Marked tests are significant at $p < ,05000$									
variable	Rank Sum A	Rank Sum B	U	Z	p-value	Z adjusted	p-value	Valid N A	Valid N B
Number of mistakes	66769,00	113531,0	21619,00	-11,0125	0,000000	-11,5343	0,00	300	300

According to the results of this test, we can reject the null hypothesis. The difference was statistically significant. Group B with experimental teaching has proven worse performance and increased error rate in all standards.

Given the above results, confirming the impact of educational programs based on closed dichotomous sets on a larger error rate in spelling phenomena, we decided to find out whether the design simplicity focusing on isolated linguistic units practicing does influence the acquisition of language competence in certain grades of primary school only. We thus created the same null hypothesis for each standard separately. Box plot, however, clearly shows that student performance in the experimental group B is worse than Group A performance regardless of grade.

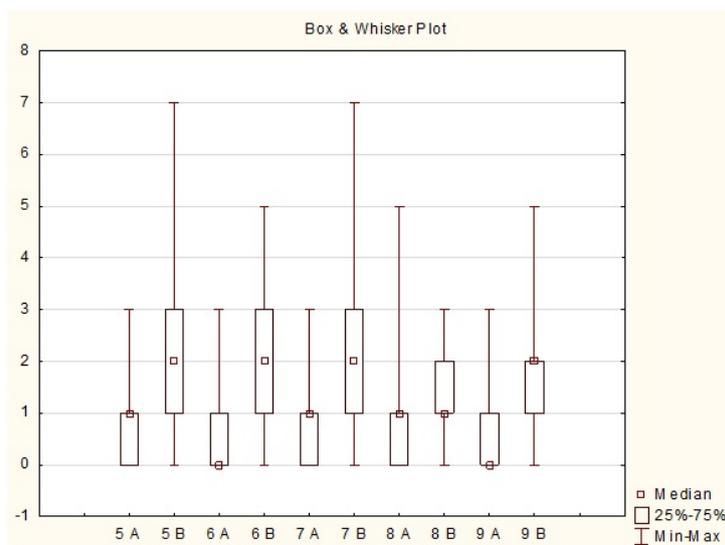


Figure 4. Test results per grade

The null hypotheses based on the results of Mann-Whitney's U test were rejected in all grades and have proven statistically significant differences in the experimental group results for each grade. The test results confirmed our alternate hypothesis that the use of simply designed training programs based on practicing and testing isolated phenomena in the form of dichotomous response tasks results into a higher error rate in coherent written texts.

3. Conclusions

Software tutorials for mother tongue teaching become increasingly popular teaching method at primary schools. This kind of study support is currently still one of the most widely used in language teaching. In the Czech language teaching we meet software whose design simplicity allows students to practice the spelling of only isolated phenomena in the dichotomous roles, which in the case of longer coherent text leads to a higher error rate. Although quasi-experimental research between 2010 and 2012 has shown, via electronic testing of spelling phenomena, that computer-aided Czech language teaching is more efficient than the traditional frontal teaching method without a computer, an additional experiment investigating the error rate of students from the experimental group in writing longer sentence segments has not confirmed former results. We have demonstrated, therefore, that the dichotomous tests focusing on isolated phenomena are unsuitable for teaching Czech grammar and should not be used as the sole technological means of the mother tongue teaching.

References

1. Cápaj, M. (2009) Analýza možností elektronického testovania pri preverovaní vedomostí študentov. *Mladí vedci 2009, Volume I. Nitra.*
2. Dostál, J. (2009) Educational Software and Computer Games – Tools for Modern Education. *Journal of Technology and Information Education, Volume I, Issue I, p. 27.*
3. Dvořáková, E. (1999). Několik poznámek o distančním vzdělávání. Technická univerzita, Ostrava. Referát distančního vzdělávání.
4. Shohamy, E. (1993) The Power of Tests: The Impact of Language Tests on Teaching and Learning. NFLC Occasional Papers. Johns Hopkins University, Washington, DC. National Foreign Language Center.
5. Smeets, E. (2005). Does ICT contribute to powerful learning environments in primary education? *Computers & Education, 44(3), 343-355.*
6. StatSoft, I. (2011). STATISTICA, ver. 10.

MULTIMEDIA AND STUDENT PERFORMANCE IN ONLINE MATHEMATICS LEARNING

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Abstract

Technology, multimedia in this case, can contribute positively to student performance in an online instructional environment. Student performance data of past four years were obtained from an online course entitled Applied Calculus (MA139), College Algebra (MA134), Plane Trigonometry (MA133), and Calculus I (MA140). This paper examined the data to determine whether multimedia (independent variable) had any impact on student performance (dependent variable) in online math learning, and how students felt about the value of the technology. Two groups of student data were analyzed, group 1 (control) from the online applied calculus course that did not use multimedia instructional materials, and group 2 (treatment) of the same online applied calculus course that used multimedia instructional materials. For the MA139 class, results indicate a statistically significant difference ($p = .001$) between the two groups, where group 1 had a final score mean of 56.36 (out of 100), group 2 of 70.68. Additionally, student testimonials were discussed in which students shared their experience in learning applied calculus online with multimedia instructional materials.

Keywords: *Online learning, multimedia, dual-coding theory, visual, learning object*

1. Introduction

Online education continues to grow across disciplines at institutions of higher learning (Wagner, Garippo, & Lovaas, 2011). Accompanying the popularity of online education is the use of technology in teaching and learning that is believed to be redefining how learning takes place (Brown, 2002). Horizon Report (Johnson, Levine, & Smith, 2009) identifies visual literacy as one of the key new skills for formal instruction at university education and notes that “digital media literacy continues its rise in importance as a key skill in every discipline and profession” (Johnson, Levine, & Smith, 2010, p.3).

Striving to accommodate student needs and improve their performance in online learning, a multimedia component was introduced into MA139 Applied Calculus, an online math course for undergraduate students in fall, 2010. The multimedia component consisted of learning objects presented in the format of text, audio, video, and animation. This online applied calculus course had been taught by the same faculty for two years before the multimedia component was introduced.

This study analyzed student performance data in the online course. Specifically, the final course grades of the students enrolled in the MA139 without a multimedia component were compared with the final course grades of the students enrolled in the MA139 with the multimedia component. Student responses to an online survey were also discussed. The purpose of this study was two folds: First, it endeavored to determine whether technology, multimedia in this case, works to improve student performance in online instructional environment. Secondly, it attempted to reveal the value of multimedia in online learning as perceived by the students.

The second author offered online courses on College Algebra (MA134) and Plane Trigonometry (MA133) during summer 2010, spring 2011, summer 2011, spring 2012, and summer 2012. There seemed to be a great demand for these online courses as time progressed. Many students who enrolled were working, non-traditional students, who were returning to academics after a long break in their education. Other students wanted to accelerate in their degree program by accommodating online classes in their curriculum. In a few instances, we found students, after having failed, kept on enrolling several times until they passed the class. Textbook and Graphing Calculator were a requirement for these classes. In addition, instructor posted complete lecture notes on the class website. Also, several short five minute video clips made by the instructor on some topics, that students find hard to comprehend on their own, were also posted on the class website and referenced in the class content. The aim of the videos was to create an onsite classroom type experience in distance learning, and transform abstract ideas to concrete ones visually. The importance and the outcome of the video clips initiated in the year 2010 was presented by the first, second author, and two other faculty members from Chemistry and Business departments respectively at the conference on e-Learning in October 2010. All homework was assigned on WileyPlus. However, all the exams, except the final exam were posted on the CSTL Southeast Missouri State University website. The final exam was comprehensive, written and proctored, and was the same common final that was given to onsite students.

The fourth author offered online course Calculus I (MA140) during summer sessions in 2010, 2011 and 2012. The demand for online Calculus I in summer seems to be increasing. The enrollment went from 13 (2012), 10 (2011) to 21 (2012). The enrollment is increasing despite shortening the session from eight weeks (2010) to six weeks (2011 and 2012). Each student has a textbook from the university textbook rental services. The content on the course website consists of links to appropriate sections of the textbook, modules and videos of lectures. The modules combine voice, animation text, and graphics. Homework is done by WebWork. Students have unlimited number of attempts at each problem. The software can check if the solution/answer is correct before the final submission. Timed quizzes and exams are done via university's own online instructor suite (OIS). The midterm exam and comprehensive final exam are proctored paper and pencil format; students were informed to find approved proctors in advance. For contact and consultations the author kept regular office hours and used online communication. The preferred method (by students) was email and office visits (students who lived near campus). Several overseas students were using Skype. Specialized conference software (DyKnow, Adobe Connect) was available to students at no additional cost. However it required a download and installation (DyKnow) or registration (Adobe Connect) and was not popular.

2. Multimedia and dual-coding theory

A meta-study and review of literature of 51 online learning studies released by US Department of Education (2009, p. ix) found that "on average, students in online learning conditions performed better than those receiving face-to-face instruction." Various factors may have contributed to the student performance of online instruction, including multimedia. Multimedia has been argued as an effective technology means to positively impact student performance, online, blended, or face-to-face (Hedberg, 2004).

Multimedia is the combination of various digital media types, such as text, graphics, audio, video, and animation into an integrated multisensory interactive application or presentation. Owing to its attributes, i.e., visual, interactive, engaging, and animated, multimedia can present or represent action, objects, phenomena, or status that text alone can't or can't do as well (Hedberg, 2004). For example, multimedia are capable of demonstrating qualitative and quantitative relationships,

showing changes over time and showing hidden concepts that enable students to see and hear many of the things that they can't through reading only. With visual display of the subject being studied, the students can process information quicker, which, consequently, may help foster their acquisition of sophisticated skills and understanding of complex concepts and procedures that may otherwise be unattainable, i.e., the skills, concepts and procedures illustrated with simply text (Hedberg, 2004). It is believed that learners can learn more deeply, including improved performance on tests of problem-solving transfer, from well-designed multimedia messages consisting of audio, visual, graphic, animation than from more traditional modes of communication involving verbal alone (Mayer, 2003). Such deeper learning is possible because of the way our brain processes information, as Mayer (2003) and Paivio (1986) articulate in dual-coding theory.

Dual-coding theory postulates that our brain has two distinct channels of auditory and visual that separate incoming information and then represent them in visual and verbal format (Mayer, 2003; Paivio, 1986). For example, the video, animation, and graphics a person sees may be processed as visual representation in the visual channel whereas conversation and spoken words the person hears may be processed as verbal representation in the auditory channel. The combination of multiple media calls on the capabilities of both channels. Potentially, deeper understanding and better mental models occur now that the learners are actively engaged in processing incoming information and organizing them into visual and verbal models and integrate them with appropriate prior knowledge than processing information from individual channel alone (Mayer, 2002). Such meaningful learning process often results in problem-solving transfer (Mayer, 2002).

While multimedia appears promising, its positive effect on student performance is far from a given as empirical studies offer diverse views on the relationship between student performance and use of technology (Rabe-Hemp, Woollen, and Humiston, 2009; Shin, & Chan, 2004; Hansen, 2008). The literatures are limited on the impact of multimedia on student learning in online instructional environment.

3. Null Hypothesis

The researchers assumed that there would be no significant difference in student performance between the classes without a multimedia component and the classes with a multimedia.

4. Methodology

Attempting to measure the impact of multimedia on student performance in an online instructional environment, this study analyzed student performance in a single online course, i.e., MA139 Applied Calculus, offered in multiple sections by the same instructor over four academic years. Specifically, group 1 data were collected from three sections without multimedia component, and group 2 from three sections with multimedia component. All the sections were taught by the same instructor. All course assignments and course exams were developed by the instructor using the same criteria and standards. As well, grading was done by the same instructor for all sections.

Student final course grades were analyzed using an independent-samples t test to examine the impact of multimedia on student performance. Participants in the study (n=168) were from two groups – group 1 (n=83) from the class offerings in three semesters of 2008 spring, 2009 spring, and 2010 summer that did not have a multimedia component, and group 2 (n=85) from three semesters of 2010 fall, 2011 spring, and 2011 summer that had a multimedia component. Most students in the two groups were either freshman or sophomores majored in accounting, business administration, and management. Prior to taking MA139 Applied Calculus, all of the

students had taken College Algebra, and completed the course with a minimal grade of “C” (70%-79%).

5. Results and discussion

A comparison of the descriptive statistics for the two groups for MA139 revealed that the mean, median and mode were all higher for the multimedia group. In addition the range of scores was smaller for the multimedia group (See table 1). For the final scores of Group 1, the range was 99.50%, the median was 71.90%, and the mode was F. For the final scores of Group 2, the range was 89.20%, the median was 75.30%, and the mode was B (89.5%-100%=A, 79.5%-89.4%=B, 69.5-79.4%=C, 59.5%-69.4%=D, 0-59.4%=F). Although there was not a big difference between Group 1 and Group 2 in terms of Median, the outliers in Group 1 greatly lowered the group’s mode because 29 students got F in Group 1 versus 13 students in Group 2. Had the outliers been excluded, C would be the mode for Group 1 and B for Group 2. An independent samples t-test was then conducted using SPSS (Statistical Package for the Social Sciences) to determine if there was a significant difference in final scores between the two groups of students participated in this study. The mean score for group 1 (without multimedia) was 56.36% (SD = 32.00 percentage points) whereas Group 2 was 70.68% (SD = 19.03 percentage points). The results of the t-test revealed a statistically significant difference between the two groups ($t = 3.52$, $p = .001$), indicating that group 2, where multimedia was used, had performed considerably better than group 1, where no multimedia was used. There was a mean difference of 14.32 percentage points between the two groups.

Table 1. Medians, Modes and ranges for the Two Groups

	Median	Mode	Range
Group 1	71.90%	F	0.5%-100%
Group 2	75.3%	B	10.8%-100%

6. Instructional value of multimedia

In order to find out students’ perception of multimedia, we administered an online survey toward the end of each semester for the group 2 students (enrolled in the MA139 with a multimedia component). As the Table 2 below shows, group 2 students in general had a positive experience with the technology used in the sections they were in.

Table 2. Multimedia and Student Experience

Media	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Multimedia in general	6	9				15
Animation	2	11	8	1		22
Interactive exercise	7	4	6			17
Text-audio-video	4	7	4	1		16
YouTube video	8	4	1		1	14

Calculus I (MA140) online students performed similarly to students in a face-to-face class. The passing rates were 92% (2010), 80% (2011) and 76% (2012). If the two students who quit in 2012 but not withdrew formally are not counted, then the passing rate is 84%. The dip may be attributed to shortening the session to six weeks and therefore significantly intensifying the course. The most liked part of the course (by students) was the ability to check the homework answer before the submission. The multiple modes of presentations in modules (visual animations, text and audio) were appreciated also. However the students did not take the full advantage of the conference software (video conversation with instructor and other students plus sharing

of the screen for writing and drawing). It seems that students were reluctant (with few exceptions) to install additional software (DyKnow) or even register and use regular browser (Adobe Connect). Those who made initial effort and register were using the Adobe Connect regularly. Similarly, Skype was used on a regular basis by few students. Most of them, at the time, resided overseas.

7. Conclusion

Technology, multimedia in this case, seems to have made a big difference on student performance in online instructional environment, as the quantitative data showed. Various factors may have contributed to the positive difference multimedia made, for example, its visuality and animation can make the learning engaging and active, its 24/7 accessibility affords student autonomy and control over pacing and sequencing of the learning content, its motion capability and revealing process of deduction and reduction enable student the retention and application of knowledge. Multimedia, therefore, can extend and augment student learning experience as it capitalizes on the characteristics of each individual medium (Hedberg, 2004; Mayer, 2002, 2003). There were abundant qualitative evidences from student testimonials why technology in general, multimedia in particular made a difference. Our hope is that with the passage of time, as students became more proficient in the use of technology, the demand for all online offerings will keep on growing.

References

- Brown, J. S. (2002). Learning in the digital age. *Forum Futures*, 20-23.
- Hansen, D. E. (2008). Knowledge transfer in online learning environments. *Journal of Marketing Education*, 30 (2), 93-105.
- Hedberg, J. (2004). Designing multimedia: Seven discourses. *Cambridge Journal of Education*, 34(2), 241-256.
- Johnson, L., Levine, A., & Smith, R. (2009). *The 2009 Horizon Report*. Austin, Texas: The New Media Consortium.
- Johnson, L., Levine, A., Smith, R., & Stone, S. (2010). *The 2010 Horizon Report*. Austin, Texas: The New Media Consortium.
- Mayer, R. E. (1989). Multimedia aids to problem-solving transfer. *International Journal of Educational Research*, 31, 611-623.
- Mayer, R. E. (2002). Cognitive theory and the design of multimedia instruction: An example of the two-way street between cognition and instruction. *NEW DIRECTIONS FOR TEACHING AND LEARNING*, 89, 55-71.
- Mayer, R. E. (2003). The promise of multimedia learning: Using the same instructional design methods across different media. *Learning and Instruction*, 13(2), 125-139
- Paivio, A. (1986). *Mental representations: A dual coding approach*. Oxford, UK: Oxford University Press.
- Prabhu M. (2010). Technology adds to students' math comprehension. eSchool News. Retrieved at August 16, 2011 at, <http://www.eschoolnews.com/2010/03/17/technology-adds-to-students-math-comprehension/?ast=56>
- Rabe-Hemp, C., Woollen, S., & Humiston, G. (2009). A Comparative analysis of student engagement, learning and satisfaction in lecture hall and online learning settings. *Quarterly Review of Distance Education*, 10 (2), 207-218.
- Shin, & Chan, (2004). Direct and indirect effects of online learning on distance education. *British Journal of Educational Technology*. 35(3), 275-288.
- Wagner, S. C., Garippo, S. J. & Lovaas, P. (2011). A longitudinal comparison of online versus traditional instruction. *MERLOT Journal of Online Learning and Teaching*. 7(1), 68-73.

CAPABILITY IN EDUCATION. DISABILITY, POLICY MAKING AND SOCIAL AGENCY

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Abstract

In recent times a new paradigm is mostly used in the so-called “human development approach”. The approach has been developed in a variety of theories, social justice, social sciences and in educational sciences, too. When we talk about the capability in the education sector, it is clear we are still in a very early stage of the developments. The economist philosopher Amartya Sen and philosopher Martha Nussbaum are the pioneers who have significantly developed it. The capability approach is an important and emergent theoretical framework about “human well-being”, that is, ‘what people are able to do and to be, the kind of life they are effectively able to live.

Keywords *Capability, education, disability, policy making, learnfare.*

1. The education multifaceted drive and the relevant post modern policy making.

The ongoing evolution of the social and cultural structure and its pragmatic and interpretative changes in contemporary society, that some have labelled as a *complex and a systemic-functional one*, have certainly conditioned the framework of the whole teaching methods at various degrees and teaching environments. This has led to new insights and ideas, to more contextual and rooted explanatory ways of *educational and teaching methods* that thus becomes the favourite point on which to focus attention for the future and on the deeper concept of *human behaviour*.

For Hannah Arendt *human behaviour* represents the *not necessitated nor utilitarian qualifying action, archein*, freedom to take the initiative, to start something new, putting aside reiterated and past behavioural schemes. She states that the new always materializes against the prevailing trend of statistical laws and their likelihood that to all practical and daily effects corresponds to certainty. Thus the new always appears to be a miracle. The fact that man is capable of acting means that one can expect the unexpected from him and that he can do what is extremely unlikely (Arendt 1988,131.)

Discarding predetermined schemes and the advent of the new, to Hannah Arendt appear to be elements that characterize the specificity essence of human actions.

On the same wave length, Amerio defines human action as a situational real acting, away from any determinism that, beyond the cognitive emotional component, complied with the rules of the social and biological order. Therefore, ongoing action, meant as capability of acting is the same that Amartya Sen understands as “possibility of working made up of the states of being and doing” (Sen 1992,63).

Capability of acting, in short, is seen as capability of working and as the necessary condition for determining the specificity of the human being and of his freedom of action. Sen calls capability this human ability to use the net of relational resources (often called social capital) competence of acting hybridization and synergic interaction between tangible and intangible shapes of the man-world and individual-life context relationship.

Unlike Amartya Sen, to Martha Nussbaum, the capabilities represent much more than a simple man's capability of working; they are the outcome of his ontological nature specificity and represent the principle of the individual's capability, of the person meant as the sole maker and indisputable arbiter of his own destiny. Thus, Nussbaum outlines a new theoretical paradigm in the world of human development, as well as in the world of the economical, cultural and social policies.

She asks herself what people can actually be and do in a given moment and in a given context. In other words, the capability approach focuses the attention on the uniqueness of the individual, on his dignity and on the real opportunity areas open to it. Thus a new dimension arises also in the educational sector along with the necessity of a new way of thinking about the perspective of the meaning of education. In this respect, it is necessary to hope for a social formative policy where the structural dimension of the phenomenology (the upbringing and training of the new generations) is not the simple sum of its elements, but it should represent, in terms of competences, the quantity and the quality of its activated relations and finally becomes policy making, where *State*, *Society*, and *School* with their heritage to be acknowledged and consolidated will be able to interact and convey *ethical values* and *meanings* in view of *life-long learning* and pave the way to *learnfare* in which the formative need of the *subject-person* becomes the pivot on which to build and manage the systemic personal complexity within the wider social complexity.

Therefore, a Paideia arises that lives the education domain; it arises as a complex network system that can orientate the learning processes and to give the learners the ability to spontaneously create their own cognitive processes to organize the mental patterns procedures, structures and net-like interlinks for new cognitive situations and new working systems (Maturana and Varela 1985).

In short, it is a Paideia that is seen in its *atropo-ethical dimension* as the hard core that *enables* the *individual*, the species and society to interact (in an enactive circuit) with one another (Morin 2001).

That having been said, the paideia-society inter-relation stands within a paradigmatic vision of contemporary pedagogy like the double-faced Janus, from which a new dimension of man and citizen arises along with a new way of understanding education//educability of the subject-person.

It is all about suggesting a new way of interpreting pedagogy where the teaching-learning inter-action becomes alternative teaching methodology to the many current practices. No doubt so much uneasiness and failure to achieve success in the schools are caused by the nature and the way of teaching approaches, by an agency that is often too prone to hyper-didacticisms that bring about confusion and disconcert rather than self-orientating *enaction*. In fact, *enaction* means understanding learning as the creation of worlds, where the learner sees the teaching and teacher as structurally coupled (Maturana and Varela 1992).

Now, if we think again of the subject of learning in the perspective of capabilities, which characteristics underlie his being? What are the different degrees of consciousness and the different possibilities of action? What are the positive valuable elements in the creation of his worlds and in determining his well-being? This clearly underlies the meaning of ethical values responsibility that the subject must acquire and have and that becomes the inspiring element of his action, or, better, of his capability of acting.

At this point, it is clear that the formative determination represents the acquisition of the awareness of what each learner has to do to accomplish his own capabilities, attain maturity and mastery in his competences, when environments, contents and methods push him to use what he has learned in his self-created and inventive-imaginative dimension. It is only by mastering or, better, by rendering explicit such formative routes that the subject gives meaning to what he has learnt to know, do, foresee re-dislocate and is able to elaborate what he has learnt (Popper 1972), to

understand the logics of investigating and doing research in order to attain personalization and assertion of his own identity (Pastena 2012).

Thus, the aim of our work is to attain social cohesion, to avert cases of discrimination, to complete our life project, and meet one's educational needs. This is why education and professional training are the corner stones, the essential reference points to improve the quality of social and civil life of the citizens of the world; the cognitive capital is the strategic objective for the educational Policy making.

This is how education becomes sustainable education and includes the whole life span in an existential dimension made up of many factors (such as personal and family ones) and of a multiplicity of socio-cultural, environmental and economic contexts in a sort of living together that foster the well being of each individual member of society.

2. The possible education and the concept of "lineage"

Maturana and Dávila have stated that getting the young to join the world of the adults has brought about the beginning of the humane feelings; in fact, only when the habit of living together for cooperation, food sharing, well being and play was lineage born, It shaped up and consolidated in the field of communication and is practised in its cultural matrix, in the continuous flow of mutual consent actions supported by certain ways of living together and communicating.

The fact that human beings can feel emotions leads the whole set of ethical values of living and living together towards both the cognitive-rational and the emotive-relational determinants.

The co-existence of the human being in the social domain he belongs to is mainly governed by some essential and fundamental emotional forms, such as authority, obedience, trust and control. Yet, what is, in this respect, the existent relation between the bio-physiological feature and the cultural one? Or simply, between the human being's biology and the culture that urges to doing? Man exists both with his physical structure and a rational whole. In this respect, Maturana stresses that both the physiological domain and the behavioural one have their own specific autonomy.

Both the physiological dynamism and the rational one are changing all the time and the whole of human existence materializes in the living together and in the language through mutual consent acts within the network of conversations; man lives in a historical present that guides the biological matrix of human existence., "What is preserved defines and creates what can be changed" (Matriztico Institute).

Thus, culture shapes up as a close-knit network of conversations that features, consolidates and preserves a particular way of living. A baby is born and grows within rational domains that define his own life environment, wherefrom he learns the close-knit network of conversations and the dynamics of the relational strategies.

Therefore, education appears to be a moment of personal and cultural transformation/reflection on the social agency with particular reference to the most problematic aspects of human action, which often generate powerlessness phenomena with devastating consequences on the harmonious development of one's personality.

In the enactive point of view, the education/educability of the young generations is made through the flow of conversations within the wide conversation network that includes the whole of mankind. Under this point of view, being out of the negative dynamics out of the dysfunctional and conflictual situations between welfare and its subjects means, above all, a change in the conversations network that governs our daily living. The driving element of this change is the emotional state that guides the domain of the living together.

Living and learning the culture of malaise in the confusing muddle of communications based on aggressiveness parameters, or of rejection ones, leads to the interiorization and to the reiterated consolidation of negative patterns of action, that the individual person unconsciously tends to perpetuate and preserve. It is the

reflection produced by the emotional states (love, self acceptance of others). It is discarding these patterns setting aside certain false certainties and the possibility of overcoming conflicts and proceeds towards the uncharted lands of creativity and innovation.

In this perspective, education is carried out by means of a self-generated process that involves both learner and teacher through an enactive teaching approach, where human knowledge is a continuously evolving activity of common action, that does not fall within pre-determined and pre-arranged patterns and tends to the steady, ongoing research of the common wellbeing and of living/living together in the field of emotions and conversations. For this reason it must be able to produce both self generated subjects and also subjects generated from outsources at the same time; these subjects must be able to refuse and judge at any time the certainty of the knowledge attained.

In other words, it is love the driving force that leads to knowledge that makes it possible to live together and coexist with the others and accept his tight to be, which implies one's own existence.

3. Disability and Capability

In the light of what has been said, the approach to disability takes on a new connotation. There is new room to think and explain the new rational dynamics within the educational framework for disabled individuals. Here disability meets the capabilities approach with a self-generating viewpoint within a structural coupling dynamic relational framework.

Another action domain takes shape that is capable of generating new worlds crossing the disabled person's capabilities with those of the community where he belongs and giving shape to innovative interaction introducing alternative governance criteria of the educational policy.

As a matter of fact, the disability condition is part of the social condition and as such participates in full in the conversational and emotional flow, with an existential assumption of the socio-cultural set up. It is well known that the emotional dimension of experience can play a crucial role in the effectiveness/efficiency of the learning processes, on the dimensions of consciousness as well as on the rise of conscience. How much all this affects the field of action of the disabled? Once again, according to Maturana and Dàvila, love still seems to be the coexistence in accepting the other rightfully, which sets down the rules of the existential policies and, consequently, the basic educational principles. What repercussions, what relapses in educating the disabled can generate such a perspective, given that it is the perturbation, the contingent that causes a person's crisis and allows the creation of worlds? What role is played in all this by the emotional and conversational domains?

To Maturana and Dàvila they are the very *a-priori* of the socio-cultural domain existence.

For example, in Martha Nussbaum's perspective emotions include a vision of the world that stems from "my active understanding and interpreting" (Nussbaum 2004, p.47), the intention and the necessity of placing the thought itself within the meaning of the term emotion (P. 49). These emotions can even add value and meaning to the things and people around us to the point of stating that "if there is no emotion, we can say, there is hardly any meaning in our statements (p. 65).

Nussbaum tries to explain a theory about the importance of emotions in life and in human knowledge development plans in order to use it more reasonably in the promotion of human dignity and in the statement of the dignity of each citizen of the World.

The meaning of this consideration is basically to touch on the various interpretation models of human knowledge with the objective of looking for mutual well

being, that can foster research plan and analysis of useful, formative strategies which can be applied to teaching the disabled.

About this, Sen states that “through an approach of justice theory about capabilities whether the disability is physical, mental or imposed by restrictions due to society, the disabled person receives immediate attention with social policy that would have never received by any other approaches – from the utilitarian one to the social justice theory by Rawls to the welfare economy based on wealth” (Sen 2009 23-24).

The idea that each individual person must face the world system in proportion to his structural determinism and according to his own level of difficulty allows to think of his situation in a way that is equal to his needs. From this viewpoint, the capabilities can in turn take on an intrinsic value or are structurally relevant overcoming the idea based on the principle of standardizing disabilities.

The idea underlying this statement is certainly to be found in the principle of liberty, meant as liberty of choice and liberty of action. This idea clearly takes into consideration the interaction between the learner and the social model of disability.

That sees it as a particular form of human diversity. Finally, the capability approach takes into consideration the mutual action done by the individual components and by the social restrictions aiming at widening the choice options for the sake of individual freedom.

To sum up, a man's wellbeing is not the outcome of his wealth, but rather of the many dynamic interactions occurring between him and the society he belongs to.

References

- Arendt H., *Vita Activa*, Bompiani Ed., Milano 1988.
- Nussbaum M., *Hiding from Humanity: Shame, Disgust, and the Law.*, Princeton University Press, 2004.
- Nussbaum M., *Creating Capabilities. The human development approach*, The Belknap Press of Harvard University Press, 2010.
- Maturana H., Varela F.J., *Autopoiesis and cognition* (tr. it), Marsilio, Venezia 1985.
- Maturana H., Varela F.J., *Macchine ed esseri viventi. L'autopoiesi e l'organizzazione biologica*, Astrolabio Ubaldini, 1992
- Maturana H., Davila X., *Emozioni e Linguaggio in Educazione e Politica*, Eleuthera, Milano, 2006.
- Morin E., *I sette saperi necessari all'educazione del futuro*, Cortina Ed., Milano, 2001.
- Pastena N., *Il Giano Bifronte della Pedagogia Contemporanea*, De Nicola, Napoli, 2012.
- Popper K.R., *Conoscenza oggettiva. Un punto di vista evoluzionistico* [1972], Armando, Roma 1975.
- Sen A. K., *La disuguaglianza*, Il Mulino Editore, Bologna 1992
- Sen, A. K. (2009), “Capability: Reach and Limits”, in E. Chiappero-Martinetti (a cura di), *Debating Global Society: Reach and Limits of the Capability Approach*, Fondazione Giacomo Feltrinelli, Milano.

ADAPTIVE LEARNING ENVIRONMENTS AS SERIOUS GAMES

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Abstract

In former concepts for programmed instruction (PI), intelligent tutoring systems (ITS), adaptive learning environments (ALE), and pedagogical recommender system (PRE) learning is understood as similar to algorithms - as a clearly describable, logical, and in this respect serious process. With this background it is attempted to create a complete description of teaching and learning for a precise support and control of learning processes in order to replace teachers. In contrast to this concept, learning in pedagogy is usually conceived as a process that cannot be fully described or understood. Teaching and learning require human understanding and thus human communication is necessary to foster learning. From this perspective, the possibilities for PI, ITS, ALE and PRE are restricted. It is assumed that within these restrictions reasonable concepts can be developed. As one approach it is suggested to refer to the pedagogical theory of play and the understanding of pedagogical actions as art. Based on these approaches we understand the design of automatic educational reasoning (AER) systems for learning like the creation of tools for artists. As tools we suggest a pedagogical ontology, a learner model and a reasoning engine. With these tools, teachers can create playground equipment that is played with by students.

Keywords: *Automatic Educational Reasoning, Pedagogical Recommender Systems, Creativity, Serious Games, Didactics*

1. Introduction

If feedback is considered as a criterion for automated support in learning, the device presented by Pressey in 1923 was the first teaching machine (Ludy 88). Skinner picked up Pressey's design as well as the foundation in the theory of Thorndike. Based on Skinners concept machines and systems for programmed instruction (PI) were developed. Skinners concept is well known as the basis for behavioural learning theories.

Extended computational power and general problem solving theories lead to the idea of intelligent tutoring systems (ITS) and adaptive learning environments (ALE). The idea was first based on the concept for the General Problem Solver (GPS), where the knowledge of problems and strategies to solve problems were separated. When the GPS failed for any relevant problem, the concept was replaced by expert systems. The core architecture of the DENDRAL expert system (knowledge base, explanations system, inference engine) became the starting point for SCHOLAR (Burton 1989), which was build as a semantic network and based on the architecture of expert systems. These concepts are closely related to cognitive learning theories.

Despite the effort invested in ITS, there are hardly actually working systems available or real world applications reported. ITS seem to have failed due to the high effort necessary to develop such systems and the lack of theoretical foundations (Schulmeister 2007).

In the last years, the successful application of recommender systems in marketing led to the idea of transferring those systems in the didactical field in the form of educational recommender systems (ERS) (Duwal 2011). This often takes place in the context of informal learning processes. The concepts seem to be related to constructivistic learning theories, while explicit references are rare. While most of the suggested ERS are in the early stages of development, the expectations are high. At least, these expectations appear to be similar to the systems discussed before.

With systems for programmed instruction, intelligent tutoring systems, adaptive learning environments, and pedagogical recommender systems concepts for automatic educational reasoning (AER) have been developed. These AER systems have been developed for many decades. Despite the effort invested in AER systems there are hardly actually working systems available or real world applications reported. AER systems seem to have failed due to the high effort necessary to develop such systems and the lack of theoretical foundations (Schulmeister 2007). This might be connected to one concept all the systems developed so far share: Learning is considered as a formally describable and controllable process.

2. Objective

We assume that the learning theories behind AER systems developed so far should be seriously rethought. The theoretical perspectives applied yet prohibit meaningful views on the possible functions of AER systems in educational contexts. Thus the objective here is to develop a new perspective on possible functions of AER systems in teaching and learning processes. Our thesis is, that the theories of Schiller and Herbart are suitable to understand and design AER systems.

3. Method

In order to develop a new perspective on the function of AER systems in teaching and learning, we cannot refer to empirical data, since there are no systems that are developed based on the perspective to be developed available yet. But there are other pedagogical theories about teaching and learning available than the ones applied in the development of AER systems so far. The theories picked up here are the theories of Schiller and Herbart. These theories have been chosen since they are broadly accepted and discussed in educational sciences. Additionally, a relevant difference to the theories applied so far can be assumed. In order to test the thesis that the theories of Schiller and Herbart are suitable to understand and design AER systems two methods are applied: At first, a hermeneutic analysis with a transformative intention is conducted. That is, we try to understand the function of AER systems for teaching and learning with these theories. Secondly, we try to develop a model that considers the developed perspective with OWL (Motik et. al. 2009). The background for the second step is that converting theories into practise always includes heuristic decisions. Thus the development of a model can be considered as a first step towards the necessary empirical testing of the perspective developed.

4. Results

4.1 Play @ Pedagogy

Schiller is well known for his theory of play. Playing is a cultural phenomenon that appears all through history. In ancient times, playing games has been considered as not very relevant. It appears in paintings sometimes, but is not emphasised as a relevant subject for theoretical discussions. In medieval times playing games was even considered as bad, since it degrades working power and promotes sin and vice (Parmentier 2004).

An important change in the perception of games is expressed in Bruegels painting "Kinderspiele" (childrens games), which was first published in 1553. Playing games was more and more considered as a sphere with a value of its own. The right of people to play became accepted – as long as playing contributes to something useful, like the stimulation of mental abilities (Parmentier 2004).

This understanding of playing games was picked up in pedagogical considerations by Basedow in the 18th century (Overhoff 2004). Basedow suggested to convert all games children play into something useful. Therefore, Basedow applied games to teach subjects like latin or biology. This idea to apply games for teaching something useful is still widespread today, particularly in concepts for digital game based learning (Pivec 2007) or serious games.

At the end of the 18th century the understanding of games was changed and extended substantially. This change culminates in the famous words of Schiller: "Denn, um es endlich auf einmal herauszusagen, der Mensch spielt nur, wo er in voller Bedeutung des Worts Mensch ist, und er ist nur da ganz Mensch, wo er spielt [For, to finally speak it out at once, man only plays when in the full meaning of the word he is a man, and he is only completely a man when he plays]" (Schiller 1795). With this sentence, Schiller identified play as the area where people can become people, and thus as the central place for human development and education.

Schiller discussed this place in the context of arts. He considers arts as a context where human activities have to be understood as play. A necessary condition for this context is freedom, not usefulness. For Schiller, this freedom means being free of being forced by other peoples reasoning (kings, priests etc.) and of being forced by nature (food, housing etc.). Being free from external forces opens up a room for creative actions, and these creative actions are by no means intended to be useful or profitable. In our context the important point is, that play as an existential aspect of human development fundamentally refers to human freedom. Due to this, it cannot be controlled from the outside, but only be done by people themselves.

This changes the pedagogical perspective in contrast to Basedow. Basedow tried to control learning processes by creating games. With Schiller, playing is understood as an activity that cannot be controlled. Still, playing some sort of playground. A room where playing is actually possible is needed, but it cannot be forced that a room for playing games is actually used to play. With Schillers theory it is possible to understand teaching and learning as a game where people play with content - and the media that are used to express the content.

Another fundamental problem for pedagogical theories is the theory-practice-transformation. This problem was introduced by Herbart in 1802. Herbart differentiates pedagogy as an academic discipline and as an artistic practice. Academic theories are derived from principles and made of broad concepts. Artistic practice has to deal with individual circumstances. Since education in practice always takes care for individuals, for Herbart acting as a pedagogue is an art form. Thus teachers are artists. And according to Schiller, artists do play.

From this point of view it is obvious, that teaching and learning cannot be controlled or steered by knowledge that can be expressed in algorithms. One consequence is, that designing an AER system is not like creating an actual game, but to create a room where teachers and learners can play. This might be connected to the difference between game and play that is discussed in video game studies: "Play is an open-ended territory in which make-believe and world-building are crucial factors. Games are confined areas that challenge the interpretation and optimizing of rules and tactics" (Walther 2003). Games need to consider the rules of the game, while play is a free activity, where freedom is created by open up a make-believe world. If play in this sense actually happens cannot be predicted, but we can assume that toys are more likely to be played with than other objects (Swertz 1999).

Another point is that computer technology is neither capable of creating art nor able to play. Thus, computer technology can never replace teachers. This leads to a

different status of AER systems. While previous concepts tried to replace teachers, we try to create tools for teachers so they can add automatic educational reasoning to learning environments. These tools are intended as toys, that suggest to teachers to play with their teaching methods and the media they apply. If teachers play with teaching methods and media and offer differences and varieties, they again open up a playground where students can learn while playing with these teaching methods and media.

From this perspective, designing an AER system places us in the position of designing tools for creating games. These tools can be used to create a playground for teachers that act as artists who create games for learners. Pictorially we create brushes and colours that are used by teachers to paint pictures that are shown to the learner.

Thus the challenge is to design tools for the creation of teaching and learning processes that open up spaces for creative actions. The fact that the contradiction between compulsory rules and open creativity is unproblematically solved while actually playing games shows in turn that the association of gaming for teaching and learning is suitable.

4.2 Material for playgrounds – the OWL challenge

We suggest providing a metadata system, a learner model and a reasoning engine as tools to create learning environments. The metadata system allows describing different possibilities to learn certain content. It is formulated logically in an ontology in the (Web Ontology Language).

The flexible elements are circled around learning pathways. Learning pathways are considered on three levels within one course: Concept Containers (about 60 minutes learning time), Knowledge Objects (about 10 minutes learning time) with certain knowledge and media types (Meder 1998). The learning pathways, defined as relations between concept containers, between knowledge types, and between media types can be altered by teachers and by learners. If a teacher, for example, prefers other steps than suggested by a didactical model, he can mix those steps with steps from other pathways or create steps. While doing so, he plays with the teaching and learning models that were applied while creating the metadata system.

Some basic teaching and learning models are suggested (Inquiry Based Learning, Multi Stage Learning), but the teacher neither has to follow these models nor to apply these models at all. He is always free to create his own learning pathways and offer them to the learner. Thus, the metadata system allows teachers to play with various teaching models. Still, he has to describe his learning material with this metadata. In his game he still uses the metadata system, but as a toy. Since the teacher uses the meta data system an automatic reasoning engine is still able to react on the results from teacher's play.

Since the learning material and the metadata developed by the teacher is offered to learners they can use these to play too. If for example a teacher creates a learning sequence, the learner can learn the material backwards or in any creatively created order. This order can automatically be identified, converted in a personal learning strategy and applied to further material. Since the different learning pathways and the descriptions are offered to the learner, a flexible room is created where learners can play with learning models.

5. Discussion

It is obvious that a supplier of brushes and colours has hardly any control about the created artwork that will be presented to the audience. The only thing he can assume is that the colour will be present in the artwork – in which form ever. This is

considerably the case if you think about something like audience participation in non scripted performance art.

Since we consider AER systems as tools for teachers and not as a replacement for teachers and according to Herbart acting as a pedagogue is an art form it does not make any sense for developers of AER systems to even try to control learning environments and learning outcomes above all. A consequence of this is that learning outcomes cannot be applied as a measurement for a successful design of an AER system. Still, this measure has been applied as the only measure in recent decades. Thus it is necessary to develop new criteria for the success of AER systems.

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References

- Burton, R. R. (1988): The Environment Module of Intelligent Tutoring Systems. In M.C. Polson, J. J. Richardson: *Foundations of Intelligent Tutoring Systems* (109-130). Hillsdale: Lawrence Erlbaum Publishers.
- Duwal, E.(2011): Attention Please! Learning Analytics for Visualization and Recommendation. In Proc. LAK'11, 2011, Canada: Banff.
- Herbart, J. F (1802): Die ersten Vorlesungen über Pädagogik. In: J. F. Herbart: *Kleinere pädagogische Schriften*, hrsg. v. Walter Asmus. Stuttgart: Klett.
- Ludy T. B. (1988): A History of Teaching Machines. In: *American Psychologist* 43 (9), 703-712.
- Meder, Norbert (2006): *Web-Didaktik. Eine neue Didaktik webbasierten, vernetzten Lernens*. Bielefeld: Bertelsmann: 2006.
- Motik, B.; Parsia, B.; Patel-Schneider, P. F. (2009): OWL 2 Web Ontology Language. Structural Specification and Functional-Style Syntax. W3C. Retrieved 10.12.2012 from <http://www.w3.org/2007/OWL/draft/ED-owl2-syntax-20090914/all.pdf>.
- Overhoff, Jürgen (2004): Die Frühgeschichte des Philanthropismus 1715-1771. Konstitutionsbedingungen, Praxisfelder und Wirkung eines pädagogischen Reformprogramms im Zeitalter der Aufklärung. Niemeyer, Tübingen: Niemeyer.
- Parmentier, M.: Spiel. In D. Benner, J. Oelkers (Eds.): *Historisches Wörterbuch der Pädagogik* (929-954). Weinheim: Beltz.
- Pivec, Maja (2007): Play and learn: potentials of game-based learning. In: *British Journal of Educational Technology* 38 (3), 387–393. Retrieved 12.1.2013 from DOI: 10.1111/j.1467-8535.2007.00722.x
- Schiller, Friedrich (1794): Über die ästhetische Erziehung des Menschen. Retrieved 11.3.2013 from <http://gutenberg.spiegel.de/buch/3341/16>.
- Schullmeister, Rolf (2007): *Grundlagen hypermedialer Lernsysteme. Theorie - Didaktik - Design*. München: Oldenbourg:
- Swertz, Christian (1999): Computer als Spielzeug. In: *Spektrum Freizeit* (2), 112-120.
- Walther, Bo Kampman (2003): Playing and Gaming. Reflections and Classifications. *Game Studies* (3) 1. Retrieved 14.6.2006 from <http://www.gamestudies.org/0301/walther/>

ANALYSIS ON THE INTERACTION BETWEEN BODY, MIND AND LEARNING

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Abstract

In recent decades, neurophysiologic studies and, in particular, the identification of the neurological system of "mirror neurons", have opened new horizons in the field of experimental psychology to strengthen the theory of embodied cognition and constructivism, which argues that all aspects of cognition are shaped by the perceptive system of the body that moves and interacts with the environment. Sensory motor skills of the organism, the body and the environment play an important role in knowledge acquisition, but through their functional interaction they also determine the development of specific cognitive skills, thus showing their true nature. It can be said therefore, that mind and body are inseparably linked thanks to the brain and shape all aspects of knowledge, ideas, thoughts, concepts and categories through an active dialectic relationship with the environment. This theory poses two questions: What does cognition depend on? How is it formed?

Restricting learning to a mere dependency of environmental inputs that man experiences, entails not acknowledging the value of body actions in the learning process; actions that start from experiencing such entity. If it is true that environmental perceptive skills, proposed in an oriented manner, are fundamental, it is also true that the same corporeally-participated action depicts the additional benefit through which one feeds the cerebro-mental matrices for memory, emotion, language and all other human skills and abilities.

Based on this awareness, our aim is in arguing that:

- the body, in action, induces the development of cognitive skills, from the simplest to the most complex, such as in language development, the ability to classify and reasoning;
- mirror neurons play a fundamental role when following a movement, leading to the overall development of the individual;
- in line with the principle of enactivism, teachers require empathically-methodological competencies for the construction of knowledge.

From the studies carried out by Lakoff, Damasio, Rizzolatti and Gallese, supporters of the deep connection between the body, cerebral zones and aspects such as conscience, emotion, self-awareness and self-control, our main aim is to select a number of teaching strategies which are suitable for the construction a new mindset, in which learning is the result of a co-evolutional system between the teacher and the learner that is constructed actively and empathically.

The body, therefore, cannot be separated from the 'self', since this would involve a reductionist conception of the body as a mere object, not attributing to the individual its wholeness. Wise, in this sense, are the words of Marcel expressing clearly the interpretation that is given to corporeality, an entity not recognized as that thing one owns, but of which is an integral part of. As a result, the individual's self-realization is shaped through the harmonization of the individual parts of which each of us is made.

Keywords: *Neurophysiologic studies, Mirror Neurons, Embodied Cognition, Active Learning, Enactivism*

1. Introduction

In recent decades, neurophysiological studies, and in particular the identification of mirror neurons, have provided experimental elements in favour of "Embodied Cognition" and the post-constructivism, arguing that all aspects of cognition are shaped by the perceptive system of the body, that moves and interacts with the environment (Bradford Z. Mahon , Alfonso Caramazza, 2008).

Perception is an active and constructive process in which the individual takes an active role depending on his expectations, knowledge and motivation. Therefore this learning process depends on the interaction between the characteristics of the external stimulus and the characteristics of the perceiving subject. Gregory points out that the information obtained through the senses, are fragmentary and inconsistent and it will be the perceiver to give meaning and coherence to stimuli, through an inferential process that stems from the expectations and knowledge of the perceiver himself (Gregory, 1972). With this theoretical framework in mind we have moved beyond cognitivism, for which mental processes are similar to the processes of information processing, as well as Cartesian's mind-body dualism. The mind and body are inseparably linked and, through an active dialectic relationship with the external environment, shape up all aspects of cognition, ideas, knowledge, thoughts, concepts and categories.

From the studies carried out by Damasio (1995, 1999, 2003) , Rizzolatti (2006), Gallese & Lakoff (2005), supporters of the deep connection between body, brain areas and aspects such as awareness, emotion, self-awareness and willingness, the need has arisen to choose suitable teaching methods for the construction of a new "mindset" in which the teaching/learning process loses its linearity. Learning cannot be merely seen as an input – processing – output process, in which perception and action are considered as two distinct moments and in which the sensory motor system is a device that translates into movements the ideas, concepts and decisions that would have already been processed in other areas of our central nervous system and in the prefrontal lobes. Instead, with the discovery of multimodal mirror neurons, which are activated both when a movement is performed, as well as when a movement is observed, the cognitive learning process acquires circularity: action and perception interact continuously and contain both cognitive (the intention) and emotional aspects (Rizzolatti, Senigaglia, 2006).

On the basis of this argument, the body, which is in constant interaction with its immediate world, learns and constructs thought, develops its language and more complex concepts. As it grows, the implicit learning processes, ranging from simple processes such as imitation to more complex processes as learning by association, are enriched by explicit conscious modes of learning thanks to the development of evermore complex neural networks, and where implicit and explicit components become inextricably linked (Gallese, Lakoff, 2005) . Therefore, the body does not only play a sensory and executive mediating role between our brain and the outside world, but also constitutes the core mechanism through which, the experiences we live, we develop and produce knowledge that, thanks to the actions, emotions and feelings, they become meaningful experiences to retrieve and activate in appropriate real contexts.

2. Design

Our research group has felt the need to conduct this research based on the awareness, that the learning experiences proposed within primary schools in Italy are still very far from the recognition of embodiment as a key element of cognition and the teaching/learning process.

Using this as our starting point, the study group intends to conduct a systematic analysis of the theories that support the dialectic between corporeality and cognition

and then draw a scientific framework within which it is possible to develop educational protocols.

3. Objectives

In the present work we have tried to identify three elements that appear to be more "sensitive" to the research from the perspective of general education:

- the body, in action, induces the development of cognitive skills, from the simplest to the most complex, such as in language development, the ability to classify and reasoning;
- mirror neurons play a fundamental role when following a movement, leading to the overall development of the individual;
- in line with the principle of enactivism, teachers require empathically-methodological competencies for the construction of knowledge.

4. Method

The methods proposed is a systematic literature review that would allow us to analyse the neuroscientific and philosophical literature and to understand the interaction between the learning foundations of learning: action, perception and thought. The brain function model acquires a circular process according to which action and perception interact continuously and contain cognitive (the intention) and emotional aspects.

Notwithstanding all the literature available on these arguments, there is still an evidence gap. The use of explicit and rigorous methods that systematic reviews offer will give us the possibility to critically appraise and synthesise relevant studies so as to have a clear starting point for future field research (Mulrow, Cook & Davidoff, 1998; Forbes, 2003). This method will aid in revealing where the effect on learning are consistent, for which targets, in which settings, under what conditions, and where the effects may vary significantly. In addition, as postulated by Clark & Oxman (2000), the results obtained will be more reliable because of the explicit, systematic methods used to limit bias and reduce chance effects.

5. Results

The discovery and the functions of mirror neurons as well as the numerous neuro-scientific studies, allow us to dwell on two important ideas: the theory of somatic markers of Damasio and of Frith's argument that learning means learning to make predictions. Both cases highlight the central role of experience in learning processes in which our body, not only plays a sensory and executive mediating role between the brain and the outside world, but also becomes the pivot that allows the construction of knowledge which can also be produced by abstraction and generalization, specifically because they were built starting from experiencing the world through the body.

In recent decades, on a scientific level, great importance has been given to cognitive-motor interventions that, by using the body as an object, the image of what was experienced was created in the mind (Risoli, Tedesco, Bonelli, 1999). The movement becomes a tool for learning through different stages and levels of detail (Berthoz, 1998).

The numerous studies on the learning process led to highlight how learning always implies a process of transformation, and thus a change, when present as an extension of our abilities to make explicit, outline, recognize, justify, validate and act in reference to some aspect of our involvement with the environment, other people and ourselves.

Learning involves the cognitive sphere since it is characterized by the interaction between the continuous perceptive experience and the mnemonic

experience that allow us to construct meaning within which we choose what and how to place our subsequent experiences (Merleau- Ponty, 1945). Learning how to use the behaviours learnt at the right time occurs thanks to the association of adequate behaviours in particular situations to the new situations and to the process of generalisation. For this reason, the individual who acquires the competence of controlling his body can learn that a certain category of dynamic forces is appropriate for certain situations (Thelen, Smith, 1994). Corporeality, understood as the perception of being a body, allows us to position ourselves in the world, to create a link between the self and the world. This process is not merely a contact but of a transformative nature. The individual interprets the signs that have been obtained through the perception and re-elaborates them by anchoring them to what is present in his/her memory (Paloma Gomez, 2004). Perception, emotion, attention and memory become the key words in the learning process.

In addition, the discovery of neurological elements, more specifically of mirror neurons that create the development of empathy towards others, has particular importance in terms of holistic education because the individual, in experiencing gratitude and care towards others, learns how to control aggressive behaviour. Thus, the development observed is not only cognitive but also social.

6. Discussion / conclusion

The progress of biomedical disciplines is now able to refer to a wide and varied range of neuroanatomical structures and neurophysiological processes that can be put in relation with the different aspects of behavior and mental life. The charm of this knowledge leads some people to develop didactic and educational proposals based on the way the brain works. Hence, in the field of education, the educational process chosen should consider the body as the protagonist, but at the same time requires a scientific attitude that enables smooth and successful expression of the potential of the subject. This methodology should be based on specific theoretical knowledge, skills and personal resources to approach teaching in a professional manner.

The contributions of scholars such as Vygotsky (1987), Piaget (1964), Winnicott (1965) have brought to light the importance of concentrating on the process of learning, the need to build functional and structured environments, create awareness of the diversity of learning styles and the deep consideration of cooperative learning. It requires a methodology in which expertise, methodological and managerial skills must be accompanied by social intelligence, understood as the ability to establish ties to reinforce relationships, resolve conflicts and negotiate solutions. The methodology chosen needs to provide the skills required to "learning to learn" and that, having moved beyond the concept of learning as a unilateral process from the teacher to the student, highlights the uniqueness of the student through the customization of educational processes. Such methodology allows everyone to own the objectives, making best use of their own cognitive style, their particular "Frames of Mind" and doing so through the personal "construction" of cultural meanings and the skills required.

Competencies, therefore, are developed through a process that, starting from one's experience, it helps the individual to re-elaborate, evoke and reform it, allowing to represent and symbolise the said experience. In other words, learning starts from the experience lived which, through the use of different types of codes, a reorganization and reconstruction of reality is carried out. The way of organizing experience, or the situations in which the child can set in motion the process of learning reveals the conception of how he learns.

Having gone beyond the idea that the child is an empty receptacle in which we can input new knowledge, it is now clear to us the idea of constructive learning, where the child plays an active role. The cognitive organization is elaborated in close relation with motor and dynamic action. The mind takes into account our body, its movements,

its sequences and what we will do next. Learning must, therefore, be understood as didactic and educational possibility that can trigger changes in skills and competencies in a more functional living environment of the individual.

References

- Bateson, G. (1972). *Verso un'ecologia della mente*. Adelphi.
- Berthoz, A. (1998). *Il senso del movimento*. Milano: Ed. McGraw- Hill.
- Bradford Z. Mahon, Alfonso Caramazza. (2008). *A critical look at the embodied cognition hypothesis and a new proposal for grounding conceptual content*. Journal of Physiology - Paris 102 (2008) 59–70
- Clark, M. & Oxman, A. D. (2000). Introduction. Cochrane Reviewers' Handbook 4.1 (Section 4). In Review manager (RevMan) (Version 4.1) [Computer program]. Oxford, England: The Cochrane Collaboration
- Damasio, A. (2003). *Alla ricerca di Spinoza*. Milano: Adelphi.
- Damasio, A. (1995). *L'errore di Cartesio*. Milano: Adelphi.
- Damasio, A. (1999). *Emozione e coscienza*. Milano: Adelphi).
- Forbes, D. An Example of the Use of Systematic Reviews to Answer an Effectiveness Question. In Western Journal of Nursing Research, 2003, 25(2), 179-192. Available at: <http://wjn.sagepub.com/cgi/content/abstract/25/2/179> Accessed on: 12th June 2012.
- Gallese, V, Lakoff, G. (2005). *The brain's concepts: The role of the Sensory- motor System in Conceptual Knowledge*, <<Cognitive Neuropsychology>>, 2005, 22.
- Gomez Paloma, F. (2004). *Corporeità ed emozioni. Una formazione psicomotoria per il saper...essere*. Napoli: Alfredo Guida Editore.
- Lucangeli, D, Ianniti, A, Vettore, M. (2007). *Lo sviluppo dell'intelligenza numerica*. Roma: Carocci Editore
- Merleau- Ponty, M. (2003). *Fenomenologia della percezione*. Milano: Bompiani, p. 135, ed. Orig. 1945.
- Mulrow, C. D., Cook, D., & Davidoff, F. (1998). Systematic reviews: Critical links in the great chain of evidence. In C. Mulrow & D. Cook (Eds.), *Systematic reviews: Synthesis of best evidence for health care decisions* (pp. 1-4). Philadelphia: American College of Physicians. In Forbes, D. An Example of the Use of Systematic Reviews to Answer an Effectiveness Question. In Western Journal of Nursing Research, 2003, 25(2), 179-192. Available at: <http://wjn.sagepub.com/cgi/content/abstract/25/2/179>. Accessed on: 12th June 2012.
- Piaget, J. *Lo sviluppo cognitivo*. Editore Armando, 1994
- Piaget, J. (1964). *Six études de psychologie*. Ginevra: Gonthier.
- Rivoltella, P.C. (2012). *Neuro didattica. Insegnare al cervello che apprende*. Editore Raffaello Cortina.
- Rizzolatti, G, Sinigaglia, C. (2006) *So quel che fai*. Milano: Raffaello Cortina Editore.
- Thelen, E, Smith, L. (1994). *A Dynamic Systems Approach to the Development of Cognition and Action*. Cambridge: MA:MIT Press.
- Rosati, L. (2005). *Il metodo della didattica. L'apporto delle Neuroscienze*. Brescia: La Scuola.
- Vygotskiy, L. (1987). *Il processo cognitivo*. Hoepli
- Winnicott, D. (1965). *Sviluppo affettivo e ambiente*. (trad. it.) Roma: Armando, 1970

RELATIONSHIP IN EDUCATION: ELECTIVITY AND IMMERSION

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Abstract

This research aims at investigating on a particular dimension in education that focuses on learning and on how much the process of “humanization of the human being” is pedagogically sustainable. This processes properly directed, settle down “electively” and become, in the educational process, styles, models, attitudes and behaviours in an onto-metaphysical ethic and hermeneutic sense.

This scientific perspective identifies authors and theories epistemologically placed on a double direction of theoretical investigation: the first neuropsychologically orientated (Bateson, Damasio, Hillman, Putnam, Edelmann, Fodor, Dennett, Maturana, Varela, Karmiloff-Smith) and the second pedagogically end educationally, didactically orientated (Montessori, Piaget, Bruner, Durkheim, Dewey, Gentile, Mounier, Maritain, Acone, Catalfamo, Gennari, Moscato, Ferroni). This hypothesis considers the intersection points of these two theoretical approaches in the attempt to look at them in unity, since too often they have been sharply divided and fragmented. In this perspective, the main interest of this research shifts from a technical-procedural and stadial analysis to a more general philosophical paradigms of pedagogy and didactics, also in the neurosciences perspective.

Keywords: *learning, relationships, immersion, electivity*

1. Elective affinities and elective learning

In his work “De Atractionibus Electivis” Toben Bergman, the Swedish chemist, states that in the relationship between individual subjects something occurs that is quite similar to the particular phenomenon existing in nature, whereby two united elements split to form two more couples driven by other two, due to mutual attraction, starting a none precisely identified process synthesis and rejection.

Wolfgang Goethe was particularly fascinated by this research; as he was interested in the most diverse disciplines, and above keen in natural sciences, he went into details of Bergman’s theory, whose law “*actratio electiva duplex*” in Latin, hints just at that unknown phenomenon whereby two naturally coupled elements split in order to re-build more couples because of “*special affinity*”. It is still unknown and almost impossible to explain why some elements attract each other and others reject each other in an absolutely natural and physiological way. Actually, the attraction and rejection phenomena that occur in nature likewise can be seen in other conditions regarding man and these are as articulated and interconnected in its internal and external dynamics.

So, why should we rule out that such reaction could also happen in the manifold and multi-sided learning process and relevant acquisition (when one wants to express an ampler view in line with the object of this research) with its latent, hidden dynamics, that is somehow unknown to pure scientific rationality?

“*Elective affinities*” that is how Wolfgang Goethe calls them when he wrote one of the greatest masterpieces of XIX century international literature taken by great love for the study of natural sciences; that is a masterpiece mediated, though, by the genial

mind of a matchless writer and teller of stories that belong to man's fleeting existence.(1)

His existence is composed by specific chemical components, by endocrine and endogenous factors, by pulsions and instincts, but also by *soul's codes* that are the real inner uncontrollable, non manageable drives that reason itself cannot explain, but are actually the real stimulus that leads us to those involving passions that motivate our existence and take part in our lives with the right determination to improve, which gives meaning to the "*living the world*" and gives the right force to that impulse that leads from *man's world to the world beyond*.(2)

These impulses control the working of the *inner world* powers and change its exterior ones by making them stronger. They give meaningful connotation to our intentions. They urge us to learn. Motivation means motive as determination, choice, election that take root in the *motivum* (from Latin *movere*) meant as *moving towards, not as action, activity and practices ending up to nothing*, but as a stimulus towards what Goethe himself defines as the '*superior determination*'.

Thus Goethe labels "*elective affinities*" *these impulses of the soul*; anyway, the word '*affinity*' per sé describes in the most fitting way what can be referred to all those sensations that are relevant to man's affective and sentimental expressions and the way they are deeply expressed .

The way is mainly relational, emotive, empathic and ranges from the general and universal expression of the emotions to the most specific dynamics of looking, proxemics/body language, feeling, agreement up to including the cognitive in the awareness and consciousness of the sensations expressed.

They are *elective*, as they reveal themselves without any apparent perceptive way; we hardly notice they exist and yet they are felt not in a clear, immediate, common sensation, but with a feeling we are hardly aware of.

2. Immersion and elective learning

They are not perceived as a sort of intellectual mediation, but are man's areas and capabilities perceived in the diffusive immersion of rationality and sociality.

What emerges are only indefinite signals that lead us more to emotions than to knowledge and are canalized in the body and in the mind through reinterpretation of such prevailing diffusive state strongly conditioning any form of expression. Therefore, body and mind are subject to *electivity* and try control it emotionally on the one side and rationally on the other. In this authentic act, in the responsible way of acting and being, we completely perceive that *indefinite* that belongs to man and that man needs to reveal himself completely in an open unaccomplished, unintelligible description that still guides and orientates our lives more than any other clear order and directed programme. It is one's own tale, the impossible dream, not the one fed by oniric material, but the *day dream* that transcends the real and gives us the impression that it can come true (3). All this is the *electivity* that is present more in the details of the tale than in the very meaning of the plot, it is more a matter of fancy than of the real, but it pushes man to act and react more than any other *order* or any other *task* to be carried out.

Otherwise, in the absence or the negation of the presence of these uncontrollable sensations that are part of man and inside him, one would risk of being a prisoner of a sort of mind and of a body that are not enough for the western assumption for which human kind is made up not only of reason and its intelligent rules, but also of *intelligent actions*, that are measured by means of other criteria of *intentionality*. It is intelligible intentionality that reveals and expresses itself in the experience and stabilization, after assuming them in detail and meaningfully.

Now then, recognizing the reassuring and deep nature of the events, so that the *elements of the psyche structure themselves*, in the stabilizing idea of *Karmiloff-Smith* and considering the representative re-description, outcome of transforming events that

overcome the modular structure and, again considering the experiences as elective experiences, that can be acquired through *elective learning*, one can say that the learning processes can impact upon man beyond the level so far imagined by modifying and re-describing man, that is the self (in its various components) in a concept earlier devised by Piaget in the *constructive idea of construction-reconstruction and representation* of the real without understanding, though, its *educational potential*. The scientific interest inevitably links up with life's experiences, whose observations are mainly to be seen in the way they appear and in the ongoing research of accomplishment and in satisfying the total explanation of the facts.

This is not possible for the elective forms of experiences, but it does not prevent from considering them as determining factors in the complex argumentations and reflections about man.

In Goethe's terminology (in his masterpiece, though) we find words like *choice and will*, already mentioned for their meaning when talking about the tensional state of a human meant as ontogenetic and not phylogenetic.

The tale is about man.

3. Emotions in learning and in education

Learning and all what is about the intake of assimilation and experience links up with all that has been said so far; this is even truer when we talk about the formative years, where the *'fatality'* element is always prevailing.

Learning is a dynamic, complex scientifically explainable process through the articulated and epistemologically innervated study of cognitive sciences.

It avails itself of individual cognitive strategies and styles, as well as of experiences, models, stimuli and information that are present in the culture they belong to. Through such dynamics new knowledge is acquired that brings about skills, competence and capability.

The outcome of all this can be called *manifest dynamics* that is controllable and *latent or hidden dynamics* that cannot be completely identified controlled and described.

The inner life component, as rooted background knowledge, is a remarkable, significant *area* of the man who learns to the extent that just the combination of these two *areas, the inner and the exterior ones* allow *in full* (Maritain) man's training and education.

It is clear that experience, context, *exterior area* and then the relationship become the areas of a *human that can be humanized*, whose *states* are preserved and express themselves in the *areas* of an *exterior life* that, in turn, feeds body and soul, combining nature, culture and conveyance of logic and meaning.

Metaphorically speaking, the *areas* of relationship, of symbolic expression, tradition, culture and *paideia* need further and ampler consideration or, better being revisited in detail within the field of the pedagogic reflection that must absolutely save *the human constellation of meaning to survive itself as humanity*.

Habits, rules, usage, customs, that is, all the interactions between people and the educational environment bring us back (though only in recollection) to the origin or *humus*, pedagogically speaking.

The relational, family and school environments express that educational humour and that teaching atmosphere that live on electivity.

The meaningful relationship between people and the environment builds so much on the individual's life experiences as on those of the *"educational community"*. In the meaningful relation that in this case could be defined as elective relation, the fundamental *area* element in the educational context is the *other*.

Thus, learning intersects *elective relations and responsible acts* besides being understood as all the ways to trace those data recorded and preserved in memory by

means of a transformation that is unconsciously *chosen* and create forms of acquisition that significantly and strongly bring about elements that are useful to man's global training and education.

Another particularly interesting argumentation in line with the undertaken analysis is about the *transfert* and its positive or negative influence that a type of learning can have on a previous or successive one (retroactive or proactive transfert); it can determine *stability* (Karmiloff-Smith stabilization) or *cancellation* of the new information. The *transfert* is the intermediate process between learning and memorization.

These three processes are thought to be part of the more general acquisition process. According to what we are trying to discuss, the *transfert* appears to be the determinant push to achieve acquisition and, therefore, it works like a "*dashing cabin*" of chosen information and bound to stabilize as Karmiloff-Smith says or, according to what Damasio says, they are bound to be strongly imprinted along emotional somatic canals or to be understood as a *deliberate choice* for Dennet and then, if we want, we can see conciliatory aspects in an educational perspective as *eligible under tension with an educational meaning*.

References

1. W. Goethe, *Le Affinità elettive*, Marsilio, Padova, 1999
2. J. Hillman, *Il Codice dell'anima: carattere, vocazione, destino (the Soul's Code)*1996, transl. by Adriana Botttni, Adelphi, Milano 1997; cfr. *L'anima dei Luoghi* (con Carlo Truppi) Rizzoli, Milano, 2004
3. D. Demetrio, *Manuale di educazione degli adulti*, Laterza, Bari, 1997
Damasio A., *Emozione e coscienza*, Adelphi, Milano, 2000;
Damasio A., *L'errore di Cartesio*, Adelphi, Milano, 1995
Dennett D., *L'atteggiamento intenzionale*, Il Mulino, Bologna, 1993
Karmiloff-Smith A., *Oltre la mente modulare*, Il Mulino, Bologna, 1995
Lèvinas E., *Alterità e trascendenza*, Il Melograno, Genova, 2006
Lèvinas E., *Totalità e infinito. Saggio sull'esteriorità*, Jaca Book, Milano, 1980/2006.

TEACHERS' PEDAGOGICAL STRATEGIES FOR INTEGRATING MULTIMEDIA TOOLS IN SCIENCE TEACHING

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Abstract

Since the widespread introduction of Information and Communication Technology (ICT) in education the use of several types of visualizations, especially multimedia environments have increased substantially. This study describes how teachers integrate multimedia tools into teaching and learning sequences (TLS) in science education. Four in-service teachers' groups were investigated across a training course to analyse their pedagogical strategies for introducing multimedia tools in science teaching. During the training teachers (n=14) were invited to build in group teaching learning sequences (TLS) about some science content using multimedia tools. The methodology is qualitative and a study case design was adopted. It can be said that these teachers had a positive perception about this tools. Throughout the use of multimedia tools these teachers intended to run away from traditional approaches planning to use these tools mostly to engage students in a whole class discussion. In all cases teachers adopt structured tasks and in two of these they weren't aware of the necessity to make explicit links between the multimedia tools and the other activities. Some difficulties related to the developing of an understanding of the complex relationship between technology, content, users, and practices in order to achieve an effective integration of technology into teaching are discussed.

Keywords: *Multimedia tools, teachers' pedagogical strategies*

1. Introduction

Until a few decades ago, text has been the major mode used to teach scientific material and books have been the major teaching tool (Moreno et al., 2001). But, since scientists made microscopic phenomena visible by creating images of atoms, molecular structures, crystal formations, chemical bonding, cellules and electrical circuits, soon its use was found in science education. Nowadays, visualizations are a part of scientific practice that could influence science education (Linn, 2003). This author argues that visualizations can help experts to test new ideas and reveal certain aspects of scientific phenomena displaying new insights and allow comparisons with different scenarios. By other hand, visualizations are also important to students as they can illustrate an idea that words cannot describe and in the same way can introduces students to important aspects of scientific research that are frequently neglected in science education.

With the development of the computers and ICT (Information and communication technology) the use of visualizations has increase strongly, both in science and science education. The number and type of visualizations available has extended and its access became much easier. According to Moreno and Mayer (2007), we consider visualizations the non-verbal mode of represent content knowledge, which includes photos, illustrations, graphics, drawings, maps, animations, simulations and video. Through technology it's possible to combine verbal and non-verbal modes and

create multimedia or *multimodal* (Moreno and Mayer, 2007) learning environments. These learning environments represent knowledge in to different modes (verbal and non-verbal) and frequently use two modalities: auditory and visual, i. e., through the ears and through the eyes (Moreno and Mayer, 2007). So, text books are no longer the only teaching tool, computer and communication technologies are often used in our classrooms. How teachers can best integrate multimedia tools to support students' science learning? Which is the preferable pedagogical strategy? How are they doing this?

Finlayson et al., 2006, indicate that the majority of teachers are broadly positive towards ICT and recognize the contribution that technology can make to teaching and learning. However, this is not yet reflected in measures such as teacher confidence and competence with ICT or in effective professional practice with learners.

Osborne and Hennessy (2003) stress that this tools, specially virtual environments can provide an alternative to practical work in some situations, but teachers and students don't perceived them as replacement for other activities. It's when ICT tools are integrated and balanced with other teaching and learning activities that it provides the greatest benefits. Rather than use this resources in isolation, explicit links should be made between theoretical computer models and reality, before, during and after the computer-based lesson.

Cox et al. (2003) conclude on their research report that appears to be three main approaches to ICT taken by teachers:

- **Integrated approach:** *planning the use of ICT within the subject to enhance particular concepts and skills and improve pupils' attainment. This involves a careful and considered review of the curriculum area, selecting the appropriate ICT resource which will contribute to the aims and objectives of the curriculum and scheme of work, and then integrating that use in relevant lessons.*

- **Enhancement approach:** *planning the use of an ICT resource which will enhance the existing topic through some aspect of the lessons and tasks. For example, using an electronic whiteboard for presenting theory about a topic. In this approach, the teacher plans to complement the lesson with an innovative presentation method to promote class discussion and the visualization of problems.*

- **Complementary approach:** *using an ICT resource to empower the pupils' learning, for example by enabling them to improve their class work by taking notes on the computer, or by sending homework by e-mail to the teacher from home, or by word processing their homework.* Cox et al. (2003, p.34)

According to these authors, all three approaches can enhance learning, but the effects may be different. The teachers' choices are affected by a large number of key factors that goes from: their own knowledge about the subject, knowledge on ICT and access to ICT tools. The pedagogical practices of teachers using ICT can range from only small enhancements of practices using what are essentially traditional methods, to more fundamental changes in their approach to teaching.

2. Methodology of research

It was adopted a qualitative research aiming to study how in-service teachers (n=14) enrolled in a teachers' training course of 40 h, integrate multimedia tools on their lessons plan. The study reported here aims to find out what kind of multimedia tools they plan to use, what pedagogical approaches they adopted for its integration and to elicit the rationale behind different choices. We adopt case study research which is considered a preferable strategy when "how" or "why" questions are being posed (Yin, 2002). The researchers had no control of teachers' choices. They were invited to build a TLS (teach and learning sequence) about some science content suitable to be used on their classroom.

2.1. Participants

This study was realized with fourteen science teachers from public Brazilian school. They were all from different public schools from São Paulo city and were teaching at the moment, in general, different school levels and different subjects. All participants referred that they wanted to improve their knowledge about this resources in order to introduce them in classroom. So, they searched for this kind of training program and participated voluntarily in all the activities. Most of them were graduated in Chemistry Teaching or Biology and teach Chemistry, Natural Sciences or Biology. After some training sessions they formed freely four groups. Seven teachers (50%) showed lower confidence level with ICT and the lack of time considering that they had in average 32 h weekly journey in class.

2.2. Training Programme

The training program named “The usage of multimedia tools to study high school chemistry contents” takes 40 hours and was distributed into 10 sessions of 4 hours. The main purpose of the training program was to promote awareness of the importance of selecting, adapting and evaluating visual tools that contribute to the development of scientific skills, procedural and digital.

2.3. Instruments and procedures

During the training teachers were invited to build in group teaching learning sequences (TLS) about some science content using multimedia tools that they could use on their classes. Each teacher group made an oral communication to the class of their TLS followed by a class discussion. All the oral communications were audiovisual recorded, transcript and analysed on a later stage, as well the TLS made by them. At the end of the training it was realized a semi-structured interview with each group with the purpose to clarify some issues that appear during their TLS presentation. It was also used some data from field notes taken during the training program in order to characterize each teacher group. After the description of their TLS it was characterized the pedagogical approach that was used to integrate this tools. This characterization was done according the findings of Cox et al. (2003). For each multimedia tool it was identified the type of pedagogical approach based on the theoretical categories proposed by Cox et al. (2003).

3. Results of research

Text all four groups employed multimedia tools to teach the concepts using a *Self-regulated learning* (Hennessy, Deaney and Ruthven, 2006, p. 71), but only Group A used a *Self-regulated learning* guided by a worksheet. Due to large classes and insufficient computers, all groups planned to use the multimedia with whole class teaching. And for the same reason (too many students) the group D mentioned that they have to do lab demonstrations. In table 1 we present the main characteristic of their TLS.

Table 1. Groups and characteristics of TLS

Groups	Class (year)	Science topic	Lesson number (lesson=50 min)	Multimedia tools	Mode of multimedia use	Lesson activities
A	9	Physical state changes	3	Animation; simulation; Interactive game	Projected display of both tools with whole class discussion	Individual worksheet with instructions; Whole class discussion of worksheet answers; Modelling activity

Table 1. Cont.

Groups	Class (year)	Science topic	Lesson number (lesson=50 min)	Multimedia tools	Mode of multimedia use	Lesson activities
B	11	Rate of chemical reaction	2	Power Point presentation Lab experiment simulation; Molecular simulation	Projected display of both tools with whole class discussion	Topic introduction by teacher and whole class presentation of simulations; Questions to group discussions; Plenary; Mural
C	11	Rate of chemical reaction	3	Lab experiment video; Molecular simulation	Projected display of both tools with whole class discussion	Teacher introduce topic with pivotal questions; Use of video; Use of simulation and assessment
D	9	Boiling and melting point Physical state changes	4	Lab experiment simulation; Molecular simulation	Projected display of both tools with whole class discussion	Topic introduction by teacher; Lab experiment; Whole class presentation of simulations; Written evaluation

After the analysis of their TLS we present in Table 2 a summary of the approaches that each group used.

Table 2. Approaches used with multimedia tools

Group	Multimedia Tool	Approach
A	<ul style="list-style-type: none"> • Animation • Simulation • Interactive game 	<ul style="list-style-type: none"> • Integrated approach • Integrated approach • Enhancement approach
B	<ul style="list-style-type: none"> • Lab simulation • Simulation • Mural 	<ul style="list-style-type: none"> • Integrated approach • Integrated approach • Enhancement approach
C	<ul style="list-style-type: none"> • Video • Teacher Power Point • Simulation • Students Power Point 	<ul style="list-style-type: none"> • Integrated approach • Enhancement approach • Integrated approach • Complementary approach
D	<ul style="list-style-type: none"> • Lab simulation • Animation 	<ul style="list-style-type: none"> • Integrated approach • Integrated approach

4. Discussion and conclusions

As it can be seen this group of teachers used mainly an integrated approach especially to study abstract concepts related with molecular and atomic behaviours, which based on Linn (2003) it's one of reasons to use visualizations. This kind of tools can illustrate part of the chemical concepts that words cannot. On the same way asking students to make predictions is one important aspect of scientific research that is often forgotten on chemistry classes. In all their TLS they plan to use these tools in an interactive way with whole class teaching due to operational difficulties. According to Osborne and Hennessy (2003), with this approaches teachers are moving away from traditional views of science nature and get closer to a more constructivist view. Nevertheless the remaining activities fit the transmission view (present information and assessment) without the necessary connection between the two. To develop an understanding of the complex relationship between technology, content, users, and practices and achieved an effective integration of technology into teaching it's not easy (Koehler and Mishra, 2005). On the other hand the complementary approach was the less used, which can be easily explained by operational difficulties both for teachers and for students (lack of skills and lack of equipments). Enhancement approach it's also used, but as it can be seen much less frequently. The lack of computer skills, the lack of time and the lack of equipments acts as barriers (Schoepp, 2005) to use this approach into science teaching. In order to use an innovative presentation, teachers

must have a good level of confidence and competence (Becta, 2004) otherwise they will not use them. In spite of the limitations of our study (number of cases) and the use of a training context, we could say that the use of ICT may act as a catalyst for change in pedagogy, according to Webb (2010), it could be observed in their TLS a shift in teachers and students' role, but more research is needed. These findings also suggest that probably the use of multimedia environments it's still associated to specific contexts (in this case a training program) rather than representing the general picture in Brazilian public schools. These reinforce the importance of training programs to promote the use of these tools on apprenticeship in a fruitful way.

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References

- British Educational Communications and Technology Agency (Becta) (2004). *A review of the research literature on barriers to uptake of ICT by teachers*. Accessed 30 January 2012 from <http://www.webarchive.nationalarchives.gov.uk>.
- Cox, M.J., Webb, M.E., Abbott, C., Blakeley, B., Beauchamp, T., & Rhodes, V. (2003) *ICT and pedagogy: a review of the literature*. Coventry and London: British Educational Communications and Technology Agency/Department for Education and Skills.
- Finlayson, H., Maxwell, B., Caillau, I., & Tomalin, J. (2006), *Impact of e-learning in Further Education: the impact on student intermediate and endpoint outcomes*. Sheffield Hallam University, Centre for Education Research. Final Report: DfES. Accessed 29 March 2013 from: <http://www.dfes.gov.uk/research>.
- Hennessy, S., Deaney, R., & Ruthven, K. (2006). Situated expertise in integrating use of multimedia simulation into Secondary Science teaching. *International Journal of Science Education*, 28(7), 701-732.
- Koehler, M. J., & Mishra, P. (2005). What happens when teachers design educational technology? The development of technological pedagogical content knowledge. *Journal of Educational Computing Research*, 32 (2), 131-152.
- Linn, M. (2003). Technology and science education: starting points, research programs, and trends. *International Journal of Science Education*, 25(6), 727-758.
- Moreno, R., Mayer, R., Spire, H., & Lester, J. (2001). The case for social agency in computer-based teaching: do students learn more deeply when they interact with animated pedagogical agents? *Cognition and Instruction*, 19(2), 177-213.
- Moreno, R., & Mayer, R. (2007). Interactive Multimodal Learning Environments. *Educ Psychol Rev*, (19), 309-326.
- Osborne, J., & Hennessy, S. (2003). *Literature review in science education and the role of ICT: Promise, problems and future directions*. London: Futurelab. Accessed 30 January 2012 from: http://archive.futurelab.org.uk/resources/documents/lit_reviews/secondary_science_review.pdf.
- Schoepp, K. (2005). Barriers to technology integration in a technology-rich environment. *Learning and Teaching in Higher Education: Gulf Perspectives*, 2(1), 1-24.
- Weeb, M. E. (2010). Technology-mediated learning. In Osborne, J. and Dillon, J. (eds.) *Good Practice in Science Teaching – What research as to say?* pp. (158-182). Maidenhead: Open University Press.
- Yin, R. K. (2002). *Case study research: Design and methods*. 3rd Edition. London: Sage Publications.

PRE-SERVICE TEACHERS' PERCEPTIONS OF THE USE OF E-PORTFOLIO AS A LEARNING PLATFORM

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Abstract

The e-portfolio provides an avenue for social interaction between users and viewers, allowing comments and feedback to be exchanged between them. In the educational context, the e-portfolio allows learners to record share and reflects upon their goals, their work and achievements, thus taking greater ownership of their own learning. The objective of this study is to assess users' perceptions of the e-portfolio in a number of domains. Thus our research questions include investigating users' perception of the e-portfolio's effectiveness as a learning tool and whether it enhances their self-regulation and motivation to learn.

The study involved around 326 student teachers enrolled in the Post Graduate Diploma in Education (PGDE) program at the National Institute of Education, Singapore. The participating student teachers used the open-access Google Site as the platform for their e-portfolio for the entire duration of their one-year program. They were provided with the technical support and guidance on how to build and maintain their e-portfolio to chart their learning and teaching practice.

At the end of their program, a survey was administered to gather feedback from the students on their perceptions of the e-portfolio in terms of its usefulness, and ability to enhance learner motivation. Generally, the findings revealed that the student teachers understood the value of keeping their e-portfolios, and were thus motivated to make use of them.

The findings of the study will inform e-portfolio users, teacher educators and administrators of some of the key requisites for an effective e-portfolio platform.

Keywords: *e-portfolio, pre-service teacher, motivation, self-determination theory, platform usability.*

1. Introduction

In teacher education, the need to improve quality, to attain established standards, and to resolved accreditation issues have led to the increased use of e-portfolios (Granberg, 2010). Anderson and DeMeulle (1998) found that the e-portfolio promoted student learning and development, encouraged student self-assessment and reflection, provided evidence for assessment and accountability, documented the growth of pre-service teachers, and served as a platform for social interaction between users and viewers, allowing comments and feedback from peers, parents, administrators and employers.

2. Overview of literature

2.1. Users' perceptions

In education, the use of the e-portfolio has received increased recognition in view of its multiple benefits to users. For instance, Banks (2004) viewed the e-Portfolio as providing a learner-centered rather than a course-centered view of learning and

hence a channel for 'learners to take ownership of their learning. Yao, Aldrich, Foster, and Pecina (2009) explored preservice teachers' views on the e-portfolio in the development of their reflective skills and for initial teacher certification. Although the participants involved understood the use of the e-portfolio as a record keeping mechanism and for developing their reflective skills, they thought further refinements were needed to make the portfolio reflection more meaningful.

2.2. Challenges in the widespread use of e-portfolio

In spite of the good that has been said about e-portfolios, some researchers prefer to take a cautionary stand with regards to its widespread application. Donald Stiles (2011), for instance, advises those who champion e-portfolio usage against 'believing in one's own propaganda', and highlights the 'need to understand the challenges and barriers' that confront them. Rossi, Magnoler and Giannandrea (2008) reported users' low motivation, the time and effort in the setting up and management of the e-portfolios, and at times the inflexible nature of the tool.

2.3. Motivating students towards e-portfolio usage

Student motivation is a major factor influencing the use of the e-portfolio in teaching and learning. A study conducted by Driessen, Muijtjens, van Tartwijk, and van der Vleuten (2007) showed that student motivation towards web-based portfolios was significantly higher than paper-based portfolios. Chang (2009) found that the implementation of the web-based portfolio assessment system had a greater impact on low motivation students, with regards to their self-evaluated learning effect and perceived usefulness of the system.

Motivational theories attempt to explain the factors that prompt and sustain student teachers' use of the e-portfolio. The self-determination theory (SDT) (Deci & Ryan, 1985) posits that humans are active in their pursuit of behaviours and activities that will result in positive growth and a unified, coherent sense of self (Deci & Ryan, 1985; Deci, Vallerand, Pelletier, & Ryan, 1991), but vary in terms of the different causal attribution for the chosen behaviour. External regulation refers to behaviour that is controlled by external means, such as rewards, penalties/punishments or external authority. Introjected regulation refers to behaviour that is internally controlled or self-imposed, such as acting out of guilt or in an attempt to avoid guilt. For identified regulation, the behaviour is self-determined according to what one values as important. The regulations form a continuum that characterises the degree of internalisation of the behaviour.

2.4. The e-portfolio platform

Nielsen (1994) suggests that an interface can be evaluated in terms of a number of quality components. In this study, the e-portfolio platform will be evaluated in terms of its user-friendliness (whether users find the system easy to use at the first try), efficiency (how fast users are able to perform tasks with the system once they've learned it), and user satisfaction (whether users find the system pleasant and enjoy using it).

3. Objectives

The study aimed at providing answers to the following questions:

(1) What are student teachers' motivation in doing the e-portfolio? We hypothesized that most of the student teachers would be motivated to use the e-portfolio as they would perceive it to be of value in their learning.

(2) To what extent did student teachers find the e-portfolio platform effective in terms of user-friendliness, efficiency/error management and user satisfaction?

4. Methods

4.1. Procedures

The free open source wiki, Google Sites, was chosen as the platform for student teachers to create their e-portfolios. An e-portfolio template was customized specifically to cater for the needs of the student teachers. The participating student teachers were granted access to the platform for the entire duration of their one-year programme, in the course of which, they were provided with the relevant support and guidance on the use of the e-portfolio to chart their learning and practice of teaching.

4.2 Participants

This study involved the participation of a total of about 326 pre-service teachers, enrolled in the Post Graduate Diploma in Education (PGDE) programmes, which offered a year-long training course to university graduates, in preparation for primary and junior college school teaching.

4.3. Survey instruments

A 27 item survey, with a 5-point Likert-type scale, was administered to the participating student teachers. The survey focused on student teachers' perceptions of the usability of the e-portfolio platform and their motivation in using the e-portfolio. 13 survey items assessing student motivation were adapted from the Perceived Locus of Causality (PLOC) scale (Goudas, Biddle, & Fox, 1994). The original PLOC subscales for motivation were amotivation, external regulation, introjected regulation, identified regulation, intrinsic motivation. There were 14 items on platform effectiveness, exploring 3 subscales (user-friendliness, efficiency/error recovery and user-satisfaction).

4.4. Analysis of outcomes and statistical methods

The analysis will be conducted using PASW (Predictive Analytics SoftWare), formerly SPSS. In measuring reliability, a principal component analysis with Promax rotation was conducted to examine the factor loadings of the various items. Descriptive statistics were computed to obtain the means and standard deviations of each subscale. Correlational analyses using the Pearson correlation were used to assess correlations between subscales.

5. Results

5.1. Factor analysis

Principal Component Analysis was conducted indicate a four factor structure, but with high correlations between identified and intrinsic regulation items, as well as between introjection and external regulation items. Thus the four factors of the current version of the PLOC are renamed as Autonomous (intrinsic/identified) regulation (5 items), Externally controlled (introjected/external) regulation (5 items), Introjected (2 items) and Amotivated (2 items). A three factor structure was obtained for platform usability, with User-friendliness (7 items), User-satisfaction (3 items) and Efficiency (4 items).

5.2. Descriptive statistics

Table 1 shows the mean scores, and standard deviations for the survey subscales. The findings show that the highest mean score was obtained for introjected regulation, followed by autonomous regulation suggesting that on average, the pre-service teachers felt compelled to do their e-portfolio as it was one of the programme initiatives although a sizeable number of them understood its value and found interest in the endeavour. In terms of platform usability, the highest mean scores were obtained for user-friendliness and user-satisfaction suggesting that the pre-service teachers found Google Sites easy to manage as a platform.

Table 1. Descriptive statistics for all subscales

	Mean	Std. Deviation
Autonomous	2.80	.77
External	2.61	.76
Introjection	2.89	.91
Amotivation	2.56	.82
Userfriendly	3.05	.69
Efficiency	2.83	.74
User satisfaction	2.87	.71

5.3. Correlations

Table 2 shows that there was high, significant correlation between autonomous motivation and efficiency and user-satisfaction; but moderate, and significant correlation between user-friendliness and autonomous regulation. External and introjected regulation showed low correlation with efficiency, user-friendliness and user-satisfaction, while negative correlation was found between amotivation and all three platform usability subscales.

Table 2. Pearson correlations

	Autonomous	External	Introjection	Amotivation	Userfriendly	Efficiency	Usersatisfaction
Autonomous	1						
External	.047	1					
Introjection	.357**	.353**	1				
Amotivation	-.336**	.411**	.027	1			
Userfriendly	.431**	.046	.189**	-.127*	1		
Efficiency	.527**	.071	.197**	-.114*	.817**	1	
Usersatisfaction	.535**	.047	.205**	-.167**	.712**	.783**	1

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed)

6. Discussion

The original Perceived Locus of Causality (PLOC) scale followed a four factor, ordered correlation structure suggestive of an underlying continuum of increasing self-determination between the four types of behavioural regulations, and other teams have also shown a clear factor structure (Goudas et al., 1994; Wang et al., 2009). However, in this study, as in other cross-contextual studies (Standage et al, 2005; Hagger et al., 2002), high correlations were found between identified and intrinsic regulation items, as well as between introjection and external regulation items. Thus the four factors in this current version of the PLOC were renamed Autonomous (intrinsic/identified) regulation, Externally controlled (introjected/external), Introjected and Amotivated. It is quite plausible that participants who see the value of the e-portfolio in the development of their career, would ultimately find it an enjoyable endeavor to 'grow' their portfolio, and to design it in their own personal styles, hence the close association between intrinsic and identified regulations.

In general, the pre-service teachers were not particularly enthusiastic over the use of the e-portfolio, although they understood its value. However, on the whole, they seemed satisfied with the Google Sites platform, most agreeing to its user-friendliness. Participants who perceived the platform to be user-friendly and efficient, and were satisfied with it, tended to be autonomous in their motivation towards the use of the e-portfolio. On the other hand, those who were generally dissatisfied with the platform, tended to be either externally motivated or lacked motivation towards the e-portfolio altogether.

References

- Anderson, R. S., & DeMeulle, L. (1998). Portfolio use in twenty-four teacher education programs. *Teacher Education Quarterly*, 25(1), 23.
- Banks, B. (2004). *E-portfolio: Their use and benefits*. Retrieved from http://www.excellencegateway.org.uk/media/ferl_and_aclearn/ferl/resources/organisations/fd%20learning/e-portfolio.pdf
- Chang, C. (2009). Self-Evaluated Effects of Web-Based Portfolio Assessment System for Various Student Motivation Levels. *Journal of Educational Computing Research*, 41(4), 391-405
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum Press.
- Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist*, 26, 325-346.
- Driessen, E. W., Muijtjens, A. M., van Tartwijk, J., & van der Vleuten, C. P. (2007). Web- or Paper-based Portfolios: is there a Difference. *Medical Education*, 41(11), 1067-73.
- Goudas, M., Biddle, S., & Fox, K. (1994). Perceived locus of causality, goal orientations and perceived competence in school physical education classes. *British Journal of Educational Psychology*, 64, 453-463.
- Granberg, C. (2010). E-portfolios in teacher education 2002-2009: The social construction of discourse, design and dissemination. *European Journal of Teacher Education*, 33(3), 309-322.
- Hagger, M. S., Chatzisarantis, N., & Biddle, S. J. H. (2002). The influence of autonomous and controlling motives on physical activity intentions within the Theory of Planned Behaviour. *British Journal of Health Psychology*, 7, 283-297.
- Nielsen, J. (1994). Heuristic evaluation. In J. Nielsen & R. L. Mack (Eds.), *Usability inspection methods*. New York, NY: John Wiley & Sons.
- Rossi, P. G., Magnoler, P., & Giannandrea, L. (2008). From an E-portfolio Model to E-portfolio Practices: some Guidelines. *Campus-Wide Information Systems*, 25(4), 219-232.
- Standage, M., Duda, J. L., & Ntoumanis, N. (2005). A test of self-determination theory in school physical education. *British Journal of Educational Psychology*, 75, 411-433.
- Stiles, M. (2011). *E-portfolios – a tool for oppression, beyond our abilities, or just an expensive waste of time?* Paper presented at the ePortfolio & Identity Conference (ePIC) 2011, London, UK.
- Wang, C. K. J., Hagger, M., & Liu, W. C. (2009). A cross-cultural validation of perceived locus of causality scale in physical education context. *Research Quarterly for Exercise and Sport*, 80(2), 313-325.
- Yao, Y., Aldrich, J., Foster, K., & Pecina, U. (2009). Preservice Teachers' Perceptions of an Electronic Portfolio as a Tool for Reflection and Teacher Certification. *Journal of Educational Research & Policy Studies*, 9(1), 25-43.

COMPETENCIES TEACHERS AND STUDENTS NEED FOR SUCCESS IN A GLOBAL ENVIRONMENT

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Abstract

The knowledge, skills and attitudes teachers and students need for success in the current global environment has dramatically changed since the international study abroad programs following World War I. A dramatic shift in the focus of international programs began to take place in 80's and 90's, with programs to address the fundamental concepts that should be taught in elementary schools, colleges and universities. Expanding curriculum in world history, area studies and modern languages along with computer literacy and working in teams began to be incorporated within academic programs.

Dramatic advances in technology, transportation, communication systems and the interdependence of the global economy in the 1990's through the present demanded new skill sets necessary to compete in the 21st Century. Initiatives such as identifying the top 21st Century Skills trends by the Cisco Internet Business Solutions Group (2008-9) and the Partnership for 21st Century Skills (2009) began to draw attention more directly on the workforce skills needed by employees to be successful in the global marketplace.

Global Citizenship, a recent concept suggesting the application of citizenship beyond national borders, promoting stewardship of the environment, human rights and ethics is making its way into the curriculum at the secondary school level. The teaching of Global Leadership skills has also begun to dominate the discussion of higher education curriculum needed to meet new economic, environmental and political realities of the global marketplace.

This presentation will review the latest research on the knowledge; skills and attitudes students need to demonstrate to be successful in this rapidly changing global economic, political and ecological landscape. To ensure student skill acquisition, the knowledge and skills teachers need to develop a more expansive curriculum to address student global competencies will also be presented.

Keywords: *Global Competencies, Global Leadership, Global Citizenship, International Curriculum*

1. Introduction

In the United States, the knowledge and skills students and teachers need for success in the global society and workplace of today has evolved dramatically from the turn of the century to the present. Prior to, and following World War I, competencies students needed for success in the country's industrial complex were acquired through traditional general education and courses that had not changed significantly for decades.

International exposure was considered a luxury of the wealthy and gained primarily through study abroad programs. Many of these programs were designed to promote world peace and understanding. Following World War II, international initiatives focused on reconstruction as a vehicle for changing perceptions and attitudes of peoples and cultures, followed by economic development projects as a vehicle for gaining international experience (Institute of International Education, 2012).

With the introduction of computer technology and the internet in the 1980's, a seismic shift began to take place, impacting all segments of society, including businesses, political and economic systems and educational institutions. (Howe, 2012)

Professional organizations began to raise questions about the fundamental knowledge and skills students should be able to demonstrate for success in a new global social and economic landscape. Attempts to respond to these questions are described in the following sections (American Council on International and Intercultural Education (ACIIE, 2006).

2. Defining global competencies for success

Organizations such as the Stanley Foundation in partnership with the American Council on International Education (2006) were among the first organizations in the US to begin to discuss and define the competencies (knowledge, skills and abilities) that colleges needed to include in their curriculum to ensure the success of their graduates in a changing global marketplace.

The Foundation began their work with ACIIE, in November 1994 (2006) by convening a group of twenty-four community college educators and representatives of government, industry, and nongovernmental organizations at Airlie Center, Warrenton, Virginia, for the conference entitled *Building the Global Community: The Next Step*. The report of the conference begins with the following mission statement: "To ensure the survival and well-being of our communities, it is imperative that community colleges develop a globally and multiculturally competent citizen" (ACIIE, 2006).

Four developmental stages were identified in the process. The following four stages represent a continuum of competencies recommended throughout all levels of education: 1) Recognition of global systems and their connectedness, including personal awareness and openness to other cultures, values, and attitudes at home and abroad; 2) Intercultural skills and direct experiences; 3) General knowledge of history and world events—politics, economics, geography; 4) Detailed area studies specialization: expertise in another language, culture, country.

Russo and Osborne (2000), list five characteristics of a Globally Competent Student as follows: 1) Has a diverse and knowledgeable world view; 2) Comprehends international dimensions of his/her major field of study; 3) Communicates effectively in another language and /or cross culturally; Exhibits cross-cultural sensitivity and adaptability; 4) Carries global competencies throughout life (lifelong learner). They state that the acquisition of these competencies is largely dependent on "the administrators who decide the faculty who teach, the legislators who fund, and the potential employers who motivate, to leave no doubts in the student's mind about the importance of becoming a globally competent student."

3. 21st Century trends and skills

Attempts to define requisite work and life skills have also been referred to as "21st Century Skills. In 2007, Cisco Internet Business Solutions Group released the first in a series of papers describing key trends for higher education in the 21st century, along with the role of technology. These trends began to inform higher educational institutions of the skills needed by graduates for success in an increasingly technology driven environment permeating nearly every aspect of daily life. These 21st century trends identified by Cisco (2007) help inform the dialogue about the skills students need for success in the 21st century.

In this regard, a Framework for 21st Century Learning published by the Partnership for 21st Century Skills (2009), attempts to describe the skills, knowledge and expertise students must master to succeed in work and everyday life. In other words, these skills constitute a blend of content knowledge, specific skills, expertise and literacies.

In addition to global awareness and civic literacy, the Partnership suggests financial, economic, business and entrepreneurial literacy, health literacy and environmental literacy as requisite skill areas. The Partnership states that “learning and innovation skills increasingly are being recognized as those that separate students who are prepared for a more and more complex life and work environments in the 21st century and those who are not.” The Framework of 21st century skills as defined by the Partnership are grouped into three major areas as follows: 1) Learning and Innovation Skills; 2) Information Media and Technology Skills; and 3) Life and Career Skills.

4. Global Citizenship

As business and financial institutions have become interconnected and interdependent world wide, individuals from a wide variety of nations move across boundaries for different activities and reasons, to take advantage of educational or employment opportunities. This transnational activity is facilitated by the growing ease of travel and by communication fostered by the Internet and telephony. While it is hard to quantify these numbers, or to give global citizens a legally defined political status, these qualifications do not obviate the existence and influence of transnational activists seeking new institutional forms in an interdependent world. As new institutional forms beyond nations are beginning to emerge, the term “global citizens” as active political, social, environmental or economic agents in an interdependent world has emerged.

This term “Global Citizen” is also being used increasingly in educational circles, with varied interpretations. These range from the idea that everyone is a citizen of the globe to the standpoint that in a legal sense there is no such thing as a global citizen (Schattle, 2008).

Oxfam Education (2012), an organization of Schools in England, Scotland and Wales works to support teachers with resources to empower young people to be active Global Citizens. They promote education that helps young people understand the global issues that affect their lives and take action towards a more just and sustainable world. Oxfam suggests “that Global Citizenship is more than the sum of its parts. It goes beyond simply knowing that we are citizens of the globe to an acknowledgement of our responsibilities both to each other and to the Earth itself. Global Citizenship is about understanding the need to tackle injustice and inequality, and having the desire and ability to work actively to do so. It is about valuing the Earth as precious and unique, and safeguarding the future for those coming after us. Global Citizenship is a way of thinking and behaving. It is an outlook on life, a belief that we can make a difference.”

As the term “global citizenship” has gained popularity, several institutions of higher education have begun to include course requirements in their general education pattern of offerings that touch on one or more of the characteristics of a “global citizen.”

For example Chapman University (2012) in Southern California has developed a “Global Citizen Cluster” as part of their general education program. Students can choose a semester-long study abroad program to satisfy the Global Study portion, engage in experiential learning related to global issues or to citizenship and community, or choose from a menu of courses in each area. Students complete a total of 12 units in three areas: Global Study; Citizenship, Community Service; and Language Study.

5. Global leadership

Morrison (2000) indicates that “over the last decade, globalization has overwhelmed an increasing number of managers, challenging them to rethink basic paradigms on what it takes to succeed in their careers. During the 1960s and 1970s, international business was the purview of a relatively small group of business professionals who typically worked within specialized international operations

departments.” However, beginning in the early 1980s, this situation started to change with soaring international trade and investment, causing managers to begin to recognize the importance of mastering global leadership competencies.

While Morrison (2000) indicates that the challenge of developing more and better global leaders has fallen on human resource managers, many institutions of higher education are also engaged in this endeavour. Leadership models tend to have their foundation in the more traditional academic models. New research is adding clarity to the skills global leaders need to master for success in a global economy that is here to stay.

Nevertheless, to date, no agreement has been reached regarding just what Global Leadership Competencies should be taught and learned. Tubbs and Schultz (2006) of Eastern Michigan University have proposed a working taxonomy of global leadership competencies and meta-competencies that build upon current research. Their model shows that leadership competencies can be represented by three concentric circles. These three circles describe three distinct aspects of leadership: Personal attributes, or core personality, behaviors and values.

6. Role and competencies of faculty

Van der Wende (1998), under the purview of the Center for Educational Research and Innovation (CERI) and the Organization for Economic Co-operation and Development (OECD) conducted a study to develop a better understanding of the specific features, implementation and effects of successful forms of international curriculum. The study found that curricula with an international orientation in content aimed preparing students for performing professionally and socially in an international and multicultural context could be effective for both domestic and foreign students.

The role and expertise of the faculty in internationalizing the curriculum is often a critical element overlooked by institutions seeking to “internationalize” their campus and curriculum. Allen (Circa 2000) indicates that “faculty is the most critical factor in achieving a more internationalized campus.” He further states that “global competence of faculty can be achieved in many different ways.” Among the faculty characteristics institutions should be seeking are the following: Interest in other countries, cultures and world affairs; understanding of countries, cultures or regions of the world; fluency in one or more languages; participation in international organizations; integrates international dimensions and comparisons into courses in addressing issues; advises international students and scholars; participation in and visits study abroad sites; and has lived and worked in another country at least once in their career. (14)

The ultimate goal of ensuring that students are prepared to live and work in a global society, cannot be achieved without recruiting and retaining globally competent faculty and mainstreaming international perspectives into the curriculum of all programs.

Expanding curriculum in world history, area studies and modern languages along with computer literacy and working in teams began to be incorporated within academic programs. Initiatives to internationalize higher education curriculum were promoted by the Organization of Economic Co-operation and Development; the Center for Educational Research and Innovation (1996); and Policy Futures in Education (2003), to also address the globalization needs of businesses and interconnected financial markets.

7. Findings

There has been a systematic and dramatic evolution in the knowledge and skills students need for success today from the early study abroad programs, to the interconnected-interdependent global economy of today.

The acquisition of new competencies parallels advances in transportation, technology and the Internet. These developments have facilitated the greater mobility of populations, allowed business to operate anywhere in the world, financial markets to adjust instantly to economic forces and governments to react to global events within hours if not minutes.

Reimers (2009) suggests that “we all share in facing such planetary challenges as climate change, health epidemics, global poverty, global economic recessions and trade imbalances, assaults on human rights, terrorism, political instability, and international conflicts. We also share opportunities for global collaboration in such areas as scientific and artistic creation, trade, and international cooperation. These challenges and opportunities define the contours of our lives, even in their most local dimensions.”

References

- A Brief History of the IIE. (2012). *Who We Are: Institute of International Education*. Institute of International Education. Retrieved from: <http://www.iie.org/en/Who-We-Are/History>.
- Howe, W. (2012). *An Anecdotal History of the People and Communities that Brought About the Internet and the Web*. September 13, 2012. Retrieved from: <http://walthowe.com/navnet/history.html>
- American Council on International and Intercultural Education and the Stanley Foundation. (1996). *Educating for the Global Community: A Framework for Community Colleges*. November 15-17, 1996. Retrieved from: www.stanleyfoundation.org/publications/archive/CC2.pdf
- Russo, S.L. and Osborne, L.A. (Circa 2000). *The Globally Competent Student*. Retrieved from: www.aplu.org/NetCommunity/Document.Doc?id=41
- Wilén-Daugenti, T. and McKee, A.G.R. (2008). *21st Century Trends for Higher Education: Top Trends, 2008-2009*. Higher Education Practice, Cisco Internet Business solutions Group. Retrieved from: www.cisco.com/go/ibsg.
- Partnership for 21st Century Skills. (2009). *P21 Framework Definitions*. Partnership for 21st Century Skills. December 2009. Retrieved from: www.p21.org/
- Oxfam International. (2012). *Active Citizenship: Global Movement for Change*. Oxfam International. Retrieved from: <http://www.oxfam.org.uk/education/aboutus/>
- Schattle, H. (2008) *GlobalCitizenship*. Retrieved from: hans@globalcitizenship.net
- Chapman University. (2012). *College Catalogue: General Education Requirements*. (2012). Retrieved from: <http://www.chapman.edu/academics/general-education/2007-ge-program/global-citizen.aspx>
- Morrison, A. J. (2000). *Developing a Global Leadership Model*. Human Resources Management, Summer/Fall 2000, Vol. 39, Nos. 2&3, Pages 117-131. John Wesley & Sons, Inc.
- Tubbs, S. L. and Schulz, E. (2006) *Exploring a Taxonomy of Global Leadership Competencies and Meta-competencies*. The Journal of American Academic and Academy of Business, Cambridge, Vol. 1.8, Num. 2, March 2006.
- van der Wende, M. (1996). *Internationalizing the Curriculum in Higher Education: Report on a OECD/CERI Study*. Tertiary Education and Management, Vol. 2, No.2, 1996, 186-195.
- Allen, G. (Circa 2000). *Role of Faculty in International Education*. Retrieved from: www.aplu.org/NetCommunity/Document.Doc?id=64
- Qiang, Z. (2003). *Internationalization of Higher Education: toward a conceptual framework*.
- Policy Futures in Education. ISSN 1478-2103. Volume 1, Number 2 2003. Retrieved from: <http://dx.doi.org/10.2304/pfie.2003.1.2.3>.
- Reimeres, F. M. (2009). *Leading for Global Competency*. Educational Leadership: Teaching for the 21st Century. September 2009, Vol. 67, Nu. 1.

NEW DEVELOPMENTS IN ANALYSIS TECHNIQUES FOR ORGANIZATIONAL TRANSITIONS

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Abstract

The purpose of this paper is to describe a new analysis methodology, and provides formats for use, in doctoral level curricula. The acronym SPELIT is an analysis methodology/framework to help understand an organization's environment from the Social, Political, Economic, Legal, Intercultural and Technical perspectives. Developed about eight years ago; students now have a framework for determining and formulating the answer to the question: What is? This methodology is sufficiently robust and can be used by undergraduate students, graduate students, and seasoned practitioners doing a market analysis, diagnosis prior to implementing transitions, or benchmarking in anticipation of an intervention. This paper shows how this methodology aligns with established and current theories and will describe this newly developed environmental analysis technique. A tool like SPELIT is necessary because many change theorists, such as Christiansen, Kaufman, Holcomb, and Cummings & Worley, stipulate benchmarking or diagnosing the current condition as a first step in the change process. This requires knowledge of the organization in its current environment. But change analysis is not limited to organizations. There may be a need to analyze the environment whenever a change is anticipated. People can, and often do, perform an environmental analysis when contemplating personal changes such as: a new job, a different house, an advanced degree, or a marriage. It is always beneficial to enter a new organization having contemplated the risks and opportunities; and SPELIT can be used with the popular SWOT structured planning method. One of the remarkable advantages of the SPELIT analysis methodology is it will readily adapted to unique organizations by adding or deleting environments. These specialized environments could include the educational, ethical, historical, physical, religious, temporal, and security environments, and could be very important environments to consider in specific analyses. There are several variations of the SPELIT analysis methodology that uses parts of the original model such as PEST, PESTLE, PESTELEM, and others. For her doctoral dissertation on traditional and current states of marriage, a student stated that she deleted two environments and renamed it *PIES* for her research model. This paper describes several different formats where the SPELIT analysis methodology has been incorporated at several universities, as incorporated into a doctoral level *comprehensive examination* curriculum where the students examine organizational transitions.

Keywords: *Organizations, Analysis, Benchmarking, Environments, SPELIT.*

1. Background

There is a need to analyze one's environment in many aspects of life. For this reason, the SPELIT analysis methodology was developed in the early 2000s and is presented in this paper.

1.1 Theorists' need for Environmental Analysis

Most change theorists have an evaluation of the environment as part of their philosophies. Christiansen (1997) discusses a three-stage method for defining a detailed strategy to guide a company. The first of his three stages is identifying the driving forces. He states:

The first stage ... is to identify at a fundamental level the root causes of the issues the company needs to address. These are the *driving forces* – the economic, demographic, technological, or competitive factors in the company's environment that either constitute threats or create opportunities. (p. 5)

Kaufman (2000) has a four step model of assessment and the second step is *measuring current results (What is)*. Holcomb (2001) starts her five guiding questions with an environmental analysis question "*where are we now?*" (p. xi) Holcomb's five questions are targeted to collaboration and school change, but these questions can be applied to almost any transition process. The SPELIT analysis methodology is a tool to answer these questions.

To do any reframing of our views of an organization, we need to understand where we are. Bolman and Deal (2003) identify four frames of reference: 1) structural, 2) human resource, 3) political, and 4) symbolic. Each of these frames is a point of view and can be useful for evaluating the environment of an organization. These four frames are incorporated into several categories of the SPELIT analysis methodology. Kotter's (2002) first step, of his 8-step change model, is to create urgency. This involves understanding your market and competitive environment with regard to opportunities and threats. Bridges (2003) has a three-step process to describe the process of transitions. His first step is "ending" (p. 4) which addresses the preexisting environment and that it must end. A key step in the "general model of planned change" (Cummings & Worley, 2005, p. 28) is diagnosis. The authors discuss diagnosing organizations, groups within organizations, and individuals prior to designing interventions. To this list we would add diagnosing the environment outside of the organization as suggested in the 5C model by and Bygrave & Zacharakis' (2004).

All the above theories include a step for analysis or diagnosis of the current environment that define the way things are now. The SPELIT analysis methodology is a tool that is used to systematically analyze the environment of a large organization such as the European Aeronautic Defence and Space Company (EADS), individuals such as yourself or your boss, a situation such as graduate school or an impending marriage (or divorce), a physical community such as your homeowner association or your church, or a more-symbolic (or spread-out) community such as a professional society (e.g., the attendees of the END-2013 Conference).

2 The Environment

There are different ways to describe perspectives about the environment. Bolman & Deal (2003) listed terms such as "schemata or schema, representations, cognitive maps, paradigms, social categorization, implicit theories, mental models, root metaphors" (p. 19), and frames. Christiansen (1997) uses the terms mapping and factors. We use the term environments to describe the elements of the SPELIT analysis methodology. Many theorists systematically evaluate the environment of an organization if for no other reason than to have a baseline to determine if a change occurred after an intervention. The next section describes the SPELIT analysis methodology environments.

2.1 Theory: The SPELIT Environments

SPELIT is an acronym for social, political, economic, legal, intercultural, and technology. The first step of many change or transition theories is to evaluate the existing environment. This can be analyzed using the six-perspective/environment SPELIT analysis methodology.

Social Environment: Sociology is the study of how people behave in various group interactions, such as work, home, family, church, sports team, driving, and so on (Macionis, 2004). The SPELIT social environment addresses the social character of an

organization. It would include Bolman & Deal's (2003) *structural* and *human resources* frames-of-reference.

Political Environment: Politics is the process of making decisions within groups and is closely tied to the concepts of power and influence. A political environment is associated with any group of people. The SPELIT political environment can address organizational structure and sources of power (position, expert, charismatic, etc.). This environment would include Bolman & Deal's (2003) *political* frame-of-reference and *competitors* and *collaborators* from Bygrave & Zacharakis' (2004) model.

Economics Environment: Economics is concerned with production and consumption of resources. The SPELIT economics environment addresses resources of an organization such as facilities, trucks, people, goodwill, or money. This environment would include *customers* from Bygrave & Zacharakis' (2004) model.

Legal Environment: The legal environment includes official laws or accepted rules. The legal system can be based on civil law, common law, customary law, and religious law. The SPELIT legal environment addressed the laws, customs, and ethics of the organization. This environment would include *customers* and *company* from Bygrave & Zacharakis' (2004) model.

Intercultural Environment: Being interculturally sensitive "is to be aware of the points of view of others and to recognize differences in cultures." (Schmieder-Ramirez, Fortson, & Madjidi, 2004. p. 7). The SPELIT intercultural environment addresses culture and differences between cultures that would be a driver for an organization. This environment would include Bolman & Deal's (2003) human resources and symbolic frames-of-reference and context from Bygrave & Zacharakis' (2004) model.

Technological Environment: Technology is the use of tools that man has developed to become more efficient and technology is driving how everyone does business. The SPELIT technological environment includes the physical environment with basic tools such as shelter (facilities) and food (distribution channels).

Other Environments: The ability to delete existing or to add new environments is one of the remarkable advantages of the SPELIT analysis methodology. SPELIT can be adapted to unique organizations by adding or deleting environments. These unique environments could include the educational, ethical, historical, physical, religious, temporal (schedule), and security environments (Schmieder-Ramirez & Mallette, 2007); and could be very important in specific organizational analyses.

The authors have recently seen variations of the SPELIT analysis methodology that use parts of the original earlier SPEL and SPELT models, or expand to other environments. These variants include acronyms such as PEST, SLEPT, STEEPLE, PESTLE, PESTELEM, and POST (PEST, 2012). Furthermore, some environments can be deleted if they are not applicable. For her doctoral dissertation on traditional and current states of marriage, a student stated that she deleted the legal and technological SPELIT environments and renamed her research model *PIES* (Personal Communication, Andrea Little Mason, December 21, 2012).

3. Practice: Comprehensive Examination

The SPELIT analysis methodology has been voluntarily incorporated into the comprehensive examination class for a doctoral program for several years. The purpose of the comprehensive examination:

...is to assess the doctoral student's ability to integrate the doctoral course work by preparing a paper which will address a real-world problem, dilemma, or issue synthesizing the course work. The paper will be evaluated and defended orally before a committee of faculty members. (EDOL787, 2012, p. 1)

The doctoral students are mid-career professionals interested in becoming scholar-practitioners, pursuing the doctor of education (Ed.D.) degree in Organizational

Leadership. Several different formats of SPELIT matrices, used during comprehensive examination papers, are discussed below.

3.1 Comprehensive Examination Formats

The following subsections describe 1) the driving forces format, 2) the positive and negative forces format, 3) the SWOT format, 4) the fishbone format, and 5) the non-tabular, word format. Examples are not provided due to page limitations.

Driving Forces Format: The driving forces can be itemized in a two-column tabular format. Each SPELIT environment would be listed in the first column. The driving forces would be identified from most-important to least-important in the second column. This is the simplest presentation format.

Positive and Negative Forces Format: Opposing driving forces can be juxtaposed for each SPELIT environment in a three-column format. Each SPELIT environment would be listed in the first column. The second column would be positive forces and the third column would be negative forces. Alternatively, these columns could be labeled strengths and weaknesses, pluses and minuses, pro and con, right and wrong, good and bad, credits and debits, or driving forces and restraining forces. This format leads to the idea of marrying SPELIT with SWOT analysis (2013).

SWOT Format: A SWOT (strengths, weaknesses, opportunities and threats) analysis can be performed for each SPELIT environment in a five-column format (Table 1). Each SPELIT environment would be listed in the first column. The remaining five columns would be labeled 1) internal strengths, 2) internal weaknesses, 3) external opportunities and 4) external threats. Within each cell, the driving forces can be ranked in order of importance.

Table 1. SWOT analysis incorporated with SPELIT analysis methodology.

Subject: _____	Internal Strengths	Internal Weaknesses	External Opportunities	External Threats
Social				
Political				
Economic				
Legal				
Intercultural				
Technological				

Fishbone Format: The fishbone (or cause-and-effect or Ishikawa (2013)) diagram “is an analysis tool that provides a systematic way to observe cause and effect” (Geisen, Evans, Mallette, & Suwantee, 2005, p. 10). It is often used as a brainstorming tool by failure analysis teams. The problem is listed on the right in a box and a series of lines, resembling the bones in a fish, are on the left. The major bones of the diagram are labeled as each of the SPELIT environments and driving forces are listed along that bone. The diagram is read by saying: If [one of the items on the bone], then [the effect in the box] could happen.

Non-tabular, Word Format: Another simple format is to write out a description of the driving forces for each SPELIT environment. The SPELIT environment is listed as a heading and the driving forces are discussed in the following sentences and paragraphs. The advantage of this format is that the driving forces can be described in great detail. The disadvantage is that the reader can become *lost* in several pages of text.

3.2 Another Application to Graduate Level Classes

The SPELIT analysis methodology has been incorporated into graduate level classes. In addition to the many formats described in this paper, a brief overview of its use by Professor Ronald Reidy (Clark University) is summarized here.

...for the past 2 semesters I have taught the SPELIT Power Matrix as part of my graduate global marketing and global consumer behavior classes with extremely positive results. My approach is to teach the basics of SPELIT and then to divide the class into 3 or 4 groups. They are all asked to read the same case study or current events article. This semester the article concerned the new generation of Chinese workers and how they are more selective in choosing jobs, purchasing habits, etc. One group created a SPELIT matrix from the context of Chinese students about to join the workforce; the second as managers at a Chinese manufacturing company who would be hiring; the third were American managers looking to outsource to the Chinese manufacturing company. Each group met for 1 hour then presented and discussed the findings to the class. The context differences, and in some cases similarities were amazing.... It is a great tool and I will continue to promote it. (Personal Communication, Ron Reidy, May 11, 2012)

3.3 Conclusions

This paper delineated a new environmental analysis technique that is used to systematically analyze the social, political, economic, legal, intercultural, and technological environments. The SPELIT analysis methodology was introduced, its significance was presented, and several different formats were described in this paper. This technique is intended for practitioners doing a market analysis or diagnosis prior to implementing transitions or interventions and can be used by undergraduate students and seasoned practitioners.

References

- Bolman, L., & Deal, T. (2003). *Reframing organizations, Artistry, choice, and leadership*. San Francisco, CA. Jossey-Bass.
- Bridges, W. (2003). *Managing transitions (2nd ed.)*. Cambridge, MA. Da Capo Press.
- Bygrave, W., & Zacharakis, A. (2004). *The portable MBA in entrepreneurship (3rd ed.)*. Hoboken, NJ. John Wiley & Sons.
- Christiansen, C. (1997). *Making strategy: Learning by doing*. Harvard Business Review, (November-December): 141-156
- Cummings, T., & Worley, C. (2005). *Organization development & change (8th ed.)*. Mason, OH. South-Western
- EDOL787. (2012). *Comprehensive education seminar*, retrieved from <http://gsep.pepperdine.edu/doctorate-organizational-leadership/courses/course-descriptions/>
- Geisen, C., Evans, L., Mallette, L. A., & Suwandee, A. (2005). *Organizational analysis tools to identify possible cause and corrective action for lack of collaboration between principals in a private school*. Honolulu, HI. Hawaii International Conference on Education.
- Holcomb, E. (2001). *Asking the right questions: Techniques for collaboration and school change*. Thousand Oaks, CA. Corwin Press.
- Ishikawa Diagram. (2013). Retrieved from http://en.wikipedia.org/wiki/Ishikawa_diagram
- Kaufman, J. (2000). *Mega planning: Practical tools for organizational success*. Thousand Oaks, CA. Sage.
- Kotter, J. P. (2012) *Leading Change*. New York, NY. Harvard Business Review Press.
- Macionis, J. (2004). *Sociology (10th ed.)*. New York, NY. Prentice Hall.
- PEST. (2012). *What is PEST analysis?*, retrieved from http://www.12manage.com/methods_PEST_analysis.html
- Schmieder-Ramirez, J., & Mallette, L. (2007). *The SPELIT Power Matrix: Untangling the Organizational Environment With the SPELIT Leadership Tool,* North Charleston, SC. BookSurge, LLC,
- SWOT Analysis. (2013). Retrieved from http://en.wikipedia.org/wiki/SWOT_analysis

CONCEPT MAPS AS PRE-WRITING, ARGUMENT-BUILDING SYSTEMATIZATION TOOLS: AN EXPERIMENT WITH UNDERGRADUATE STUDENTS

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Abstract

In the second semester of 2012, a first experiment with concept maps (CMs) as pre-writing and collaborative work technology with 130 undergraduate students in Curitiba (Brazil) proved to be a powerful team and argumentative competence-building resource. Constructed over the principles of meaningful learning (AUSUBEL, 1978), andragogy (KNOWLES, HOLTON & SWANSON, 2005), concept mapping (CAÑAS et alii, 2004 and 2005; NOVAK, 2003; NOVAK & CAÑAS, 2004 and 2007; TORRES & MARRIOTT, 2009) and the efficacy of using CMs in collaborative working scenarios (TORRES & KUCHARSKI, 2012), the experiment showed noticeable quality gain in works presented by the study population in three different undergraduate courses, showing an average of 15% higher grades. The research design, application and a first discussion of its results are presented in this paper.

Keywords: *Concept maps, collaborative work, higher education, meaningful learning, argumentative competence.*

1. Introduction

Using concept mapping as an interpretive resource to facilitate the comprehension of inner interdependencies that render a given text coherent (or not!) is far from new to Education. Much has been published and discussed about it, even very recently, from original perspectives on what concept maps – CMs – should be (CAÑAS et alii, 2004 and 2005; NOVAK & CAÑAS, 2007 etc.) to extensive reviews of their successful applicability (TORRES & MARRIOTT, 2009; TORRES & KUCHARSKI, 2012 etc.).

Nevertheless, most of what has been researched and published on the construction and use of CMs rarely differs from a *posteriori* uses to understand structures and intertextual implications of texts – all from an analyst's standpoint. Our intention, in the hereby described research, was to establish first impressions on the usability of CMs in pre-writing stages of original papers. The main objective was to identify positive qualitative changes in a variety of genres of undergraduate students' papers in cases where CMs of their structures were produced and collectively discussed *a priori* as opposed to texts written without this kind of planning strategy.

The initial work and research were conducted with 130 undergraduate students from the Communications, Graphic Design and Law Schools of a distinguished college in Curitiba, a large city in Southern Brazil, renowned for the quality of its educational establishments. The study was designed by the author, further developed and implemented with the help of three other professors in the partner college.

2. The research

Once the establishment for the research had been chosen, contacted and formally joined our efforts, professors whose work results depended on students' strong writing abilities were contacted to participate in the study by applying the designed work methodology with their groups and form a review committee that would analyze the results with the head researcher.

2.1 The methodology

The three volunteer professors were given workshops on the research's main objectives, methodology and theoretical basis, which included principles of meaningful and critical learning (AUSUBEL, 1978; MOREIRA, 2007), andragogy (KNOWLES, HOLTON & SWANSON, 2005), textuality and relevance (SILVEIRA & FELTES, 2002), technological mediation applied to teaching and learning (NOVAK, 2003; MORAN, MASETTO & BEHRENS, 2006) and the nature and applicability of CMs in constructivist pedagogical activities (NOVAK, 2003; NOVAK & CAÑAS, 2004 and 2007). They were also taught to use Cmap Tools, a CM building freeware software developed by the Institute of Human and Machine Cognition of the University of Florida, with which students should be familiarized in order to construct their pre-writing maps – which, in their turn, would be the main source of research data to be analyzed later.

These professors would, then, show and explain CMs to their classes, later taking the students to computing labs to teach them how to correctly download, install and use Cmap Tools as a collaborative instrument to plan and discuss a text yet to be written.

Next, each professor would ask students in their classes to team up in groups of three or four which would be challenged to produce a text in a common genre in their field of work and study, collectively planning it with the use of the software. The challenge was not the same for each class, because the multiple possibilities of CMs to plan a number of different text genres was an important part of the research.

Undergraduate students in the Graphic Design School were asked to plan and construct a presentation of a department store signalization solution to a potential client. Their specific challenge rested on the fact that the proposed solution would be more expensive than the client had anticipated in the briefing moments, and they would need to be ready to reason in favor of their plan. The groups would be asked to build pre-writing CMs to study their strategies to curb any predictable opposing positions the client might have by pointing the advantages of their new proposal, after which they would construct their supporting visual materials and text.

In Law School, classes were divided differently. First, they would be split in groups (A and B), and each half would form their teams of three or four people (teams I, II, III, IV and so on). Then, they would be presented a fictional situation: a client was very likely to be considered guilty of a certain crime that would send him to jail for at least fifteen years. Teams in group A believed the client should accept the conviction, given all evidences against him, but ask the court for leniency based on the fact that he had acted under stressing circumstances. Teams in group B had a different opinion; they should advise their client to try and use a breach in the law that could set him free because it might give cause to a mistrial plea. However, should he succeed, there was a strong chance that another procedure be started against him later on and, then, he would not escape maximum penalty. The groups would, at that point, be given time to work on their pre-writing CMs and final papers.

In the Communications School, Advertising students were asked to devise a central line of reasoning for a campaign aimed at making a local soda brand gain enough "weight" to be perceived as an appropriate competitor to the leading, national brand that dominated 85% of the overall market. Their challenge was to center their

arguments on the “native” aspect of the client’s product, trying to make it sound like a desirable choice not only because of its flavor, but also because it created jobs and riches in that specific state. Then the groups would have enough time to work on their pre-writing CMs and advertising pieces.

All groups were requested to use a similar protocol to work on their pre-writing CMs. The maps should begin with a short statement that illustrated the main point they would work to prove/sell to their client. Supporting arguments to that objective would be linked to the main idea by logical connectors that showed how each supporting idea coherently completed the group’s intentions. Then, one or two members of the group would be asked to analyze the connections established in the first CM and supply whatever counterarguments they considered strong enough to deserve being prepared for, indicating it on the CM by a red-colored nod. The counterarguments would then be analyzed by the whole group, which would choose the best way to reply to each of them, indicating it by a green-colored nod on the map. The final versions of each group’s CMs would be used to build the texts/presentations that would be presented to their clients. (Examples of the three stages of the pre-writing CMs are given in figure 1, below.)

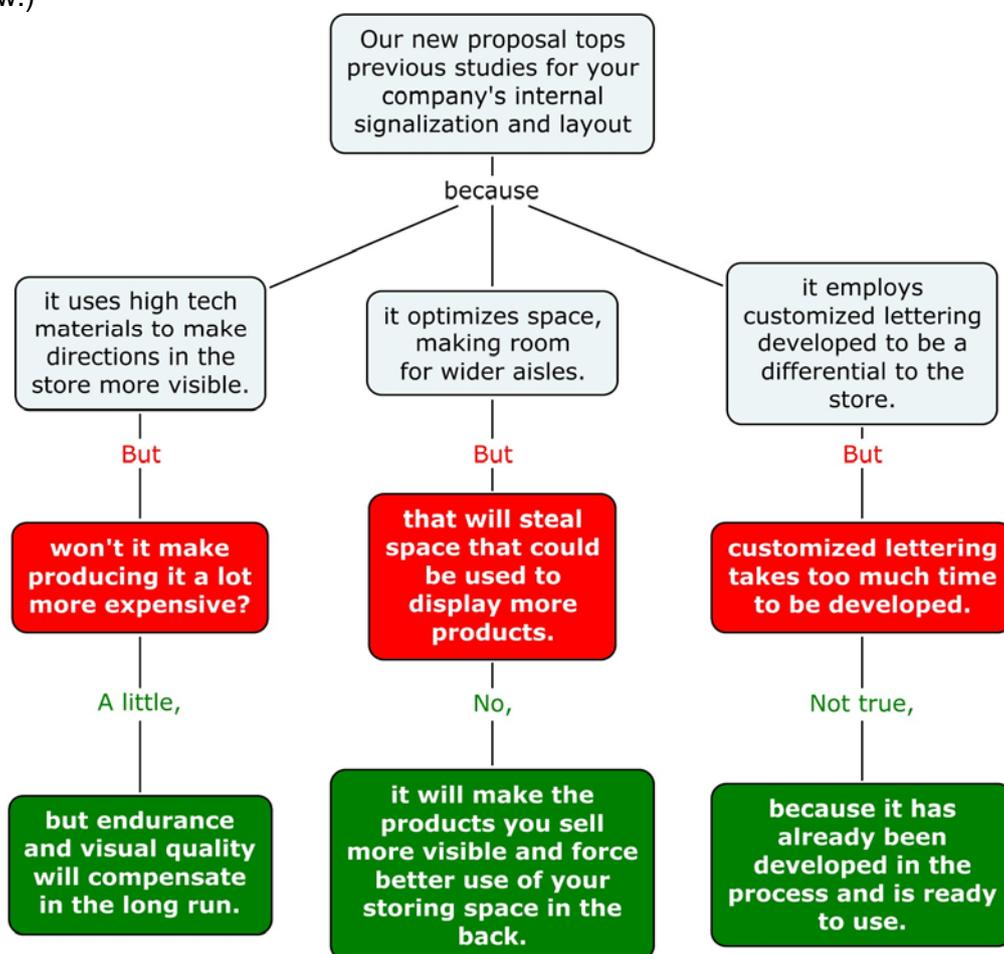


Figure 1. Stages 1 (pale blue – first proposals), 2 (red – possible counterarguments) and 3 (green – strategies to fight counterarguments) of the pre-writing CMs (Graphic Design group)

When three weeks of preparatory work had passed, the groups presented their results before panel of two professors who would play the role of their potential clients. Groups would hand in printed copies of their pre-writing CMs together with copies of the finished work, which would be the essential elements to assess the quality of the production based not only on the finished products, but strongly on the preparation process visually accessible by the CMs.

Each participant course did it their own way: Graphic Design students presented their layouts to their professors, who would play the clients. Communications students' groups were paired to present their proposals to the professors, who would decide which one was more adequately developed. Law students' groups were paired considering each pair was formed by teams from different groups who would present their cases before professors who would be playing the roles of the nearly-convicted clients to decide what to do according to what they considered their best chance.

The final grade to be attributed to the groups was not calculated on the basis of who won or lost, but by assessing the quality and coherence of the preparation work done by each one and the perceived quality of the cases/arguments/proposals presented.

3. Conclusions of this first experiment

The researcher and the involved professors met in a regular basis during and after the research procedures to evaluate its results. The main conclusions are listed below, and show a positive perspective about the efficacy of CMs in producing more qualified results in activities that emulate real-life work scenarios.

Collaborative work was strongly present as a valuable strategy to devise and develop products, presentations or arguments in polyphonic, constructivist scenarios (as also discussed by NOVAK, 2003; NOVAK & CAÑAS, 2004; TORRES & KUCHARSKI, 2012). Teamwork made it necessary that meaning negotiation competencies rise and become a driving force toward the desired quality of the work. Certain disagreements were inevitable, but solving them democratically was fundamental to reach any satisfactory result.

Professors were unanimous to mention a perceptible gain in quality of the works. Reasoning lines, argumentative competence and the confidence to present and defend ideas against opposing viewpoints were more intensely present, and substituted, most of the time, the more traditional resource to common sense knowledge or improvised answers. Average grades, in comparison to previous years when CMs were not used, were around 1.5 point higher (in a 0 to 10 points scale), which means 15% more observed productivity. Learning through real challenges, in a situation where negotiating meanings and using logical arguments to reinforce or dispute a point of view are very typical characteristics of the kind of learning activities appealing to adults (KNOWLES, HOLTON & SWANSON, 2005), and facilitates meaningful learning (AUSUBEL, 1978). All of it were considered by participating professors and students to be true about the experiment.

4. Future directions

Using CMs as pre-writing, collaboration-building, analytical-working tools in Education is clearly an option that should be considered by ever more schools of any level. Young adults, who were this research's population, grew more confident to develop their own ideas and professional proposals, as well as improved interpersonal skills to work in groups whose goals are building consensual answers to problems posed by real-life situations. All these gains should be extended to all other age and interest groups, for they are more than an exercise of teamwork: they are an exercise of maturity and democracy.

More research in this same direction can and must occur, as well as the development of new ways to use this technology to enhance professional and educational experience.

As I finish this brief account of our experiment, I would like to express gratitude to professor Ana Leocadia de Souza Brum Donikian Gouveia for her support and valuable ideas when this research was being designed.

References

- AUSUBEL David P. (1978). *Educational psychology: a cognitive approach*. 2nd. ed. Austin (TX): Holt, Rinehart and Winston.
- CAÑAS, Alberto et alii. (2004). Cmaptools: a knowledge modeling and sharing environment. In A.J. Cañas, J.D. Novak & F.M. González (Eds.). *Concept maps: theory, methodology, technology. Proceedings of the First International Conference on Concept Mapping*. (p.125-133). Universidad Publica de Navarra: Pamplona (Spain). Retrieved March 22nd, 2013, from <http://cmc.ihmc.us/papers/cmc2004-283.pdf>.
- (2005). Concept maps: integrating knowledge and information visualization. In O. Tergan & T. Keller (Eds.). *Knowledge and information visualization: searching for synergies*, S-O. Heidelberg (New York). Springer Lecture Notes on Computer Science. Retrieved March 22nd, 2013, from <http://cmap.ihmc.us/publications/ResearchPapers/ConceptMapsIntegratingKnowledgeVisualization.pdf>.
- KNOWLES, Malcolm; HOLTON, Elwood F., III & SWANSON, Richard A. (2005). *The adult learner: the definitive classic in adult education and human resource development*. 6th. ed. Burlington (MA): Elsevier.
- MORAN, José M.; MASETTO, Marcos & BEHRENS, Marilda A. (2006). *Novas tecnologias e mediação pedagógica*. 12th. ed. Campinas: Papirus. (*New technologies and pedagogical mediation*)
- MOREIRA, Marco A. Aprendizagem significativa: da visão clássica à visão crítica. (2007). In *Proceedings of the 'I Encuentro Nacional sobre Enseñanza de la Matemática' – Closing conference*. Tandil (Argentina). Retrieved March 24th, 2013, from <http://pt.pdfsb.com/readonline/596c524c64513131563342304358356d56413d3d-5251028>. (*Meaningful learning: from the classical to the critical view*)
- NOVAK, Joseph. (2003). The promise of new ideas and technology for improving teaching and learning. *Cell Biology Education*. 2003, Summer, 2, Pages 122-132. Retrieved March 23rd, 2013, from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC162189/>.
- NOVAK, Joseph D. & CAÑAS, Alberto J. (2004). *Building on new constructivist ideas and Cmap Tools to create a new model for Education*. Retrieved March 24th, 2013, from <http://www.ihmc.us/users/acanas/publications/newmodeleducation/newmodelforeducation.pdf>.
- (2007). Theoretical origins of concept maps, how to construct them and uses in education. *Reflecting Education, Vol. 3, No. 1*, Pages 29-42. Retrieved March 22nd, 2013, from <http://www.reflectingeducation.net/index.php/reflecting/article/view/41/43>.
- SILVEIRA, Jane R.C. & FELTES, Heloísa P. de M. (2002). *Pragmática e cognição: a textualidade pela relevância*. 3rd. ed. Porto Alegre: EDIPUCRS. (*Pragmatics and cognition: textuality through relevance*)
- TORRES, Patricia L. & KUCHARSKI, Marcus V.S. (2012). The utilization of concept maps as knowledge systematization and text-authoring tools in collaboration-based educational processes: the LOLA experiment. In H.H. Yang & S.C. Yuen (Eds.). *Handbook of research on practices and outcomes in virtual worlds and environments*. Hershey (PA): IGI Global.
- TORRES, Patricia L. & MARRIOT, Rita de C.V. (Eds.). (2009). *Handbook of research on collaborative learning using concept mapping*. Hershey (PA): IGI Global.

A TRAINING MODEL FOR UNIVERSITY TEACHING STAFF

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Abstract

Several learning and training models have tried to explain the complex process of learning – one of them is the Learning Cycle of David A. Kolb. At the Center for Learning and Knowledge Management (ZLW) of RWTH Aachen University this model has been used as a didactical guideline for the consecutive training of university staff. Practical training experience showed that Kolb's Learning Cycle has to be modified for the training of higher education teachers due to different requirements of diverse target groups and varying teaching and learning contents. Based on scientific critique and the practical training experience of the ZLW, several specifications for the development of a new training model have been derived and are implemented in an innovative training model for the qualification program in order to promote an improved learning process for university teaching staff of the RWTH Aachen University.

Keywords: *Training model, reflection, transfer, Kolb's Learning Cycle, training for teaching staff*

1. Introduction

The “shift from teaching to learning” has altered the idea of how learning processes can be improved. While some decades ago it was assumed that the quality of training situations is solely dependent on the expertise of the information-giver, this view was resigned in favor of learner orientation and the optimal construction of learning-friendly environments and learning communities (Silva et al., 2011). In the case of didactical trainings for university teachers this shift has twofold implications: Firstly, the trainings should focus on the needs of the participants. Secondly, the principle should be incorporated by the participants in a way that they can design and conduct their own teaching with an orientation towards the students learning. However, this shift from teaching to learning is neither a sufficient concept for the whole process of learning, nor for the design of trainings for university teachers since it is only a basic concept. Learning and training models describing the ideal learning process in detail are trying to close that gap.

Actually one of the most popular, most used, most cited and most reviewed learning models is the Experiential Learning Cycle of David A. Kolb (1984). The Center of Excellence in Academic Teaching (ExAcT) at ZLW has used Kolb's Learning Cycle (KLC) as the guiding didactical principle regarding the design and the conduction of trainings for university teaching staff aiming to improve the teaching competencies of all personnel involved in teaching at RWTH Aachen University. Accordingly, the target group and the courses provided are very diverse: starting with training for student tutors, the program also addresses the training requirements of doctoral candidates, postdoctoral scientists and professors of all nine faculties of RWTH Aachen University.

Practical experience working with KLC in didactical trainings has shown that the model requires modifications for the specific case of training seminars for university teaching staff. Hence an adjusted training model for university teaching staff – based

on past experience and empirical findings of teaching/learning research – is developed and explained in the course of this paper. The paper starts with a brief introduction to KLC, followed by scientific and practical reviews of the model. After the specifications for the model are deducted, the newly developed model is presented, whereby each step of the model is described and illustrated with relevant empirical findings of teaching/learning research. The paper closes with a short summary and a presentation of future prospects.

2. Kolb's Experiential Learning Cycle and its Scientific and Practical Critic

David A. Kolb's work is based on the assumptions that learning is "the process whereby knowledge is created through the transformation of experience" (Kolb 1984, p. 41) and that "knowledge results from the combination of grasping and transforming experience" (ibid.). Therefore KLC portrays two dual dialectical learning modes: Grasping experience through *Concrete Experience* and *Abstract Conceptualization* and transforming knowledge through *Reflective Observation* and *Active Experimentation* (ibid.). Direct or concrete experiences are the basis for observations and reflections. These reflections are incorporated and concentrated into abstract concepts from which new implications for action can be derived. These implications can be actively evaluated and provide a basis for creating new experiences (ibid.). Although being one of the most popular learning models, KLC has been widely criticized by the scientific community for its lack of flexibility (Forrest, 2004), prior knowledge, educational targets (Rogers, 1996) and emotions (Heron, 1992) as well as its insufficient consideration of the reflection process (Boud et al., 1985) and the social context (Vince, 1998).¹

Empirical studies have proven the significance of flexible learning arrangements due to different learning mode preferences (Jarvis, 2006), the importance of educational targets (Smith & Perkins, 2010), prior knowledge (Silva et al., 2011), emotions (D'Mello et al., 2013), the process of reflection (Ciminelli, 2009) and the social context (Treur & van Wissen, 2012). Jarvis (2006) also criticizes that not all people learn from experience. This statement is also supported by the practical experience gained while applying KLC in the training process at the ZLW. Practical experience and feedback of the training participants have shown that KLC does not sufficiently meet the demands of the target group.²

Another first-hand experience is that not all topics can be appropriately imparted with KLC. In some cases – where the subject is too complex and/or demanding to be taught through experiential learning in a short amount of time – it is useful to interchange theoretical input, practical input and reflection in order to promote the best possible learning process for the training participants. Additionally Kolb did not consider the lecturer-learner relationship and collaborative learning processes. So the model needs to be adapted to the specific social context of the given training situation which is a collaborative train-the-trainer situation.

The scientific and practical imperfections of KLC have shown that the model needs to undergo some adjustments in order to promote the best learning possibilities for the training participants and to achieve a development in the participants teaching competencies. Deducted from the above mentioned critics, the following requirements for a new training model are identified:

a) transparent educational targets, b) activation of prior knowledge and emotions, c) flexible adaption to the needs of the diverse target group and specific thematic demands, d) special emphasis on the process of reflection, e) consideration of

¹Some of the critic presented can be moderated by taking Kolb's Experiential Learning Theory into account (e.g. Dennick, 2012). But since this paper only deals with KLC, the match of model and theoretical background is not important for the development of the new model and therefore not considered in this paper.

²Especially engineers have criticized that they prefer being theoretically instructed before performing related tasks. This impression is also supported by empirical findings stating that technically orientated individuals tend to favor grasping theoretical knowledge before going to practice (Eschner, 2009).

the social situation (the collaborative learning in a train-the-trainer-arrangement), f) the transfer of the learned to actual teaching practice in the follow-up phase of the training.

3. A Training Model for University Teaching Staff

In order to meet the established requirements, the training model consists of the following elements: The clarification of educational targets, followed by the activation of emotional and cognitive prior knowledge, the flexible twofold learning stimulus taking the special needs of the target group and the collaborative learning situation into account, the multifaceted process of reflection and finalized by the transfer of the learnings into teaching practice (see Figure 1).³

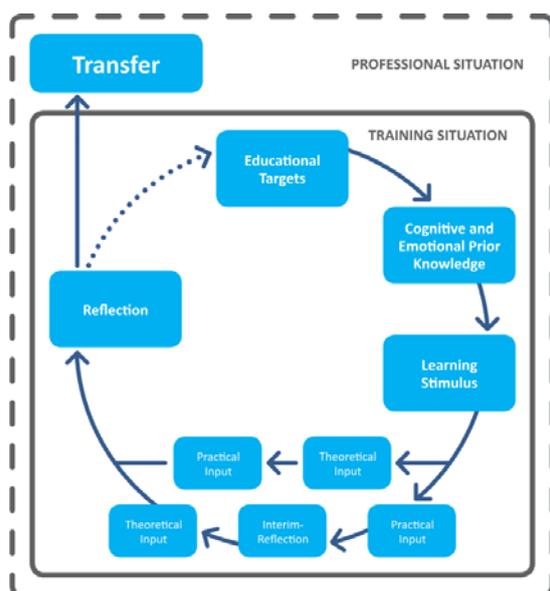


Figure 1. Training Model for Teaching University Teaching Staff

The training process starts with the clarification of the *educational targets*. These describe competences that should be acquired by the learner at the end of the learning process (Moss & Brookhardt, 2012). The clarification of the educational targets, pointing out the potential gains and benefits of the learning session, facilitates the learning process because the learners attain information and are able to structure their learning. These statements are supported through empirical research claiming positive effects on students' motivation and achievement (Smith & Perkins, 2010). The outlining of the educational targets is helpful for the next step – the activation of emotional and cognitive prior knowledge.

Ausubel (1968) has famously stated that the most important aspect influencing learning is what the learner

already knows. This is the combination of *cognitive prior knowledge* (knowledge, skills or abilities) and the *emotional knowledge* in form of experiences and emotions connected with the content. Studies have shown that learner's previous learning needs to be activated in relation to new contents in order to effectively process information, because if this activation is not guaranteed, surface learning can occur (Hailikari, Katajavuori & Lindblom-Ylänne, 2008). Through the activation of former experiences emotions are stimulated as well, which is important because when emotions are engaged, the brain releases neurotransmitters that mark the event and make it significant. This focuses attention and facilitates learning (Silva et al., 2011). By verbalizing this cognitive and emotional knowledge the learners activate what they already know and thereby facilitate their learning (Schirp, 2009). Also the trainer obtains valuable information of the participants' prior knowledge and is therefore able to adapt the learning content and explanations to prior knowledge and the experiences of the participants and thereby prepare them for the learning stimulus properly.

Each *learning stimulus* consists of a theoretical (instruction based) and a practical (experience based) input, since learning is best facilitated when both learning forms are combined (Schirp, 2009). During the theoretical input the trainer presents contents and didactic prepared solutions to solve typical problems while the participants are actively listening. During the practical input the trainer rather arranges learning environments in a way that allows the learner to acquire the new learning contents actively and independently. Because research and practical experience have

³The model is used as a guiding principle for the design and conduction of the whole training as well as single learning episodes.

shown that different individuals perceive and process experiences in different preferred ways (Silva et al., 2011), it is necessary to vary the sequence of theoretical and practical input in a flexible way according to the needs of the target group and/or specific topics.⁴ When both learning stimulus are completed, the reflection of the learned takes place.

In the context of this model *reflection* is understood as a process of (shared) thinking about previous experiences for the purpose of expanding one's opinions and making decisions about improved ways of acting in the future (Kottkamp, 1990). Inherent to this definition are three types of reflection: self-reflection, social reflection in the group and transfer-orientated reflection. During the self-reflection the learner makes sense of the experiences of the learning stimulus phase. Afterwards the learner shares his insights with the group in the social reflection. By listening to other participants, the learner deals with the perspectives and (potential controversial) insights of fellow university teachers. During this social construction process with peers, normative expectations defining the role as "university teacher" are discussed and clarified. A special emphasis lies on the transfer-orientated reflection where the learner decides which insights, gained through learning stimuli, self-reflection and adjusted by social reflection, he wants to transfer into teaching practice. The threefold process of reflection prepares the learner for the aftermath of the actual training situation – the transfer.

Transfer means the process of integrating, adapting previously learned knowledge and action patterns into professional daily teaching routine. The learning experience is realized in the professional teaching situation and put on probation. The transfer effect is accomplished when the training participants have enhanced their teaching competencies (Issurin, 2013). The transfer process is facilitated by the use of a learning journal which the participants continually use to write down which ideas they want to put into practice, the multifaceted process of reflection, and handouts summarizing the important contents of the training.

4. Summary

In the following it is summarized how the training model meets the above presented requirements: a) The clarification of the educational targets marks the first step of the training process. b) The second step consists of eliciting of cognitive prior knowledge and of emotions. c) The needs of the diverse target group and specific thematic demands are taken into account through the flexible arrangement of learning stimuli and reflection: Corresponding to the target group and topic specifics the trainer decides whether to start with the theoretical or the practical learning input and adjusts the reflection accordingly. d) The phase of reflection plays a crucial role in the training model, consisting of three parts: the self-reflection, the group reflection and transfer-orientated self-reflection. e) The social situation is contemplated through the use of practical inputs where collaborative learning is promoted and through the group-reflection where the participants benefit from insights of the peer group. f) The transfer to the follow-up phase of the training supports the aim to develop the teaching competence in the participants' own teaching situation. The presented training model does not claim to explain the complex process of learning. It is rather a training model derived from practical experience and literature review best suited for the training of teaching staff at RWTH Aachen University. The training model is still in a testing and adjustment phase since empirical examination of the model has yet not been conducted. Its practicality will be reviewed by the trainers and the model will also be discussed with the training participants. In the course of the professional training evaluation the model will also be scientifically tested in regard to its accuracy and

⁴If the trainer – on the basis of target group and/or content specifics – decides to start with the theoretical input, it is followed by the practical input and then leads to the phase of reflection. If the trainer begins with the practical input, a short interim reflection is inserted before the theoretical input is given (see the loop in Figure 1).

usefulness. Furthermore it will be analyzed in detail which group of persons prefers which loop of the learning stimulus in order to develop empirically resistant guidelines for the accurate use of the model. For this end a comparative study highlighting the specifics of disciplinary cultures will be conducted. The results of this study will be integrated as concrete training recommendations in the didactical framework of the training model.

References

- Ausubel, D. P. (1968). *Educational Psychology: A cognitive view*. New York: Grune & Stratton.
- Boud, D. & Keogh, R. & Walker, D. (Eds.) (1985). *Reflection. Turning experience into learning*. London: Kogan Page.
- Ciminelli, M. (2009). *Learning to Teach in a Constructivist Teacher Education Environment*. Institute for Learning Centred Education, Niagara University.
- Dennick, R. (2012). Twelve tips for incorporating educational theory into teaching practices. *Medical Teacher*, Vol. 34, (No. 8.), pp. 618-624.
- Eschner, A. (2009). *Brauchen Ingenieure eine spezielle Didaktik? Ingenieure ticken anders*. DiNa 05/2009 Didaktik für Ingenieure. Ingolstadt: Zentrum für Hochschuldidaktik der bayerischen Fachhochschulen.
- Forrest, C. (2004). Kolb's learning cycle. *Train the Trainer Professional Training Resources*, Vol. 12.
- Hailikari, T. & Katajavuori, N. & Lindblom-Ylänne, S. (2008). The relevance of prior knowledge in learning and instructional design. *American Journal of Pharmaceutical Education*, Vol. 72, pp. 1-8.
- Heron, J. (1992). *Feeling and personhood: Psychology in another key*. Thousand Oaks: Sage.
- Jarvis, P. (2006). *Towards a comprehensive theory of learning*. London: Routledge.
- Kolb, D. A. (1984). *Experiential Learning*. New Jersey: Prentice Hall.
- Kottkamp, R. B. (1990). Means for Facilitating Reflection. *Education and Urban Society*, Vol. 22, pp. 182-203.
- Moss, C. & Brookhardt, S. (2012). *Learning Targets: Helping Students Aim for Understanding in Today's Lesson*. Alexandria: Association for Supervision & Curriculum.
- Issurin, V. (2013). Training Transfer: Scientific Background and Insights for Practical Application. *Sports Medicine*, April 2013.
- Rogers, A. (1996). *Teaching Adults* (2nd ed.). Buckingham: Open University Press.
- Schirp, H. (2009). *Wie "lernt" unser Gehirn? Fünf neurobiologische Modellvorstellungen zur Arbeitsweise unseres Gehirns*. Bonn: NeuroPsychoEconomics Conference.
- D'Mello, S. & Strain, A. & Olney, A. & Graesser, A. (2013). Affect, Meta-affect, and Affect Regulation During Complex Learning. In *International Handbook of Metacognition and Learning Technologies*. Springer International Handbooks of Education, Vol. 26 (669-681) New York: Springer.
- Silva, D. & Sabino, L. & Adina, E. & Lanuza, D. & Baluyot, O. (2011). Transforming Diverse Learners through a Brain-based 4MAT Cycle of Learning. *Proceedings of the World Congress on Engineering and Computer Science 2011*, Vol. 1, WCECS 2011, October 19-21, 2011, San Francisco, USA.
- Smith, M. & Perkins, K. (2010). At the end of my course, students should be able to...": The benefits of creating and using effective learning goals." *Microbiology Australia*, Vol. 31, pp. 32-34.
- Treur, J. & van Wissen, A. (2012). Computational Analysis of the Impacts of Emotion on Learning in a Social Context. 2012 IEEE/WIC/ACM International Conferences on Web Intelligence and Intelligent Agent Technology, pp. 417-424.
- Vince, R. (1998). Behind and beyond Kolb's learning cycle. *Journal of Management Education*, Vol. 22, pp. 304-319.

LEARNING AND ASSESSMENT LANGUAGE PORTFOLIOS IN HIGHER EDUCATION - THE INTERCULTURAL EXAMPLE OF INTERMAR

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Abstract

In the general field of language learning in Europe (including Higher Education) Learning Portfolios have proved to be extremely useful when developing both knowledge and communication competences AND the “learning to learn” competence itself. The use of Portfolios as relevant supports for learning and assessment in the context of High Education has been discussed in recent literature (cf. Slater & Astwood, 1995, Gomez, 1999, Klenowski, 2002, Davies & Le Maiheu, 2003, Zubizarreta, 2004, Lorenzo & Ittelson, 2005 and Chen & Black, 2010).

This paper explores the convenience and productivity of using portfolios as a way to teach and assess INTERCOMPREHENSION courses. It is held on the experience of INTERMAR, a European Project (nº519001-LLP-2011-PT-KA2-KA2MP) which promotes innovative practices in foreign language acquisition for maritime professionals. We will present the Learning Portfolio that was created for the course and discuss its relevance both as a learning and an assessment tool. A qualitative analysis of the results of using this Portfolio in Belgium, Finland, France, Latvia, Lituania, Romania, Portugal and Spain will also allow us to reflect on the adequacy of criteria that were designed for the assessment of student learning.

Keywords: *Learning and assessment Portfolios, Higher Education, assessment criteria*

1. Intercultural communication

English is internationally accepted as the Lingua Franca in nearly every field in Europe. Nevertheless, in the last three decades some voices have arisen stating that other means are not only possible but advisable. As such, should non-native speakers make an extra effort to produce hardly-understandable, often-incorrect utterances in English when they could be speaking their own language?

Some would argue that our own language would probably not be understood by our interlocutors. And, today, we would have to resign and admit that they are right in most of the cases. But, hopefully, not for a long time as those voices we made reference to are working hard to implement the concept of INTERCOMPREHENSION in some education systems.

Among all the concepts that have made an impact in the field of language learning methodology in the last twenty years, probably the most productive one has been that of INTERCOMPREHENSION. Consequently, many definitions have been given, all of them in relation with plurilinguism and pluriculturalism. A theoretical one could be “*the process of co-constructing meaning in intercultural/interlinguistic contexts*” (Capucho, 2011), which is to say a way of communication in which the interlocutors use their own native language being able to understand the other’s native one.

This natural ability is what experts are transferring to educational and formal language learning contexts to develop comprehensive skills which allow the students to

manage themselves quickly, as they do not have to invest long time in learning how to speak in those second or third languages.

The process from the acknowledgment of INTERCOMPREHENSION as a natural ability to the actual implementation in the classes with students of many different fields has been and is possible thanks to the work of teachers and experts who have been creating a large amount of materials to be used in formal and informal education contexts.

Nevertheless, putting those materials into practice is not as easy as it would be desirable. New methods constantly face old obsessions which are extremely difficult to set apart and even the students may react initially against something that contradicts the methodologies that they are used to experiment: “We are very stuck to what we know about English and Portuguese (in my case) and it is a bit difficult to use my imagination to understand some words in a language I’ve never used.” reports João, a Portuguese student, the first day he was exposed to an Intercomprehension session. Yet, this first impression may be quickly replaced by the positive discovery of something new and motivating: “We developed strategies to understand different languages from ours of one way that we couldn’t even explain, at the beginning it was difficult but when we got the method it became pretty easy.” says Tiago, at the end of his course.

In formal academic contexts, Intercomprehension represents almost a revolution, by modifying representations about learning languages and by focusing on active autonomous strategies of language transfer and construction of knowledge. In order to provoke this change in the whole process, one of the key elements for learning (and assessing) Intercomprehension is materialized by portfolios.

2. Learning and assessment language portfolios

A portfolio is *“a purposeful collection of student work designed to showcase a student’s progress toward, and achievement of, course-specific (or other) learning objectives”*¹ The very definition takes us to superior education. Although easy models of portfolios are used in primary and secondary education, the act of selecting and collecting involves a much higher level of difficulty.

The portfolio should be created with the interaction of all the responsible institutions deciding in common the products to be included, the assessment information needed and the way this information should be provided. The portfolio system will give the students the freedom to work without the stress of the exams system, choosing by themselves what aspects of the subject/seminar are touching them the most and selecting carefully what artifacts reflect their improvements in the best way.

Moreover, high level language learning processes require a maturity level on the part of the student and the use of portfolios clearly ease that need. If we take for granted that our students are able to (because they are mature enough to) follow a personal process of language learning (as we all accept that it is impossible to learn a language relying only in a few hours at the school), it seems quite unfair to lock up their acknowledgments in a fixed, unique and limited exam. As the processes of learning are individualistic, so should the ways of presenting the progress achieved. Going back to the theoretical frame on which Intercomprehension is based,

*“(…) is conceived first and foremost as a person’s ability and willingness to give meaning to discourse in concrete interlingual/intercultural communicative situations (...) in order to interpret a message in an unfamiliar language, people will rely on non-linguistic elements in the situation which they may (deem to) recognize from familiar communicative situations in their own language or culture”*²

¹ Park University, Faculty Development Portfolios, <http://captain.park.edu/facultydevelopment/portfolios.htm>

² <http://www.eu-intercomprehension.eu/description.html>

As we are taught by hermeneutics, interpretations are as plural as human beings are so we should not limit their margins. In terms of linguistic processes which, in addition, would have been assessed, portfolios represent the most accurate method to obtain the intended results.

Probably the most difficult part to be created in a portfolio system is that of assessing. We are moving from a quantitative procedure and score to a qualitative procedure in which the students choose wisely which their best work have been and the teachers evaluate the acquired aptitudes by focusing on the effectiveness of the work done. The most accepted scales have been given by scoring rubrics, "*a standard of performance for a defined population*"³. Instead of choosing numeric ratings they are changed for non-statistic but easily-understandable levels which encompass a huge range of performances as they are not marking but communicating expectations of quality around a task.

But, as we said, it is not easy. Once again we face here the big trouble of convincing teachers and professors about these new methods. Teachers should be trained to assess using an open criteria standard which is going to mean a huge challenge and would involve a high effort on their part. Training should include discussion and not imposition, always bearing in mind that the final intention is to reach an above average reliable level in comprehension skills in new languages. If this first step is taken, students will get on the bandwagon swiftly.

3. The intercultural example of INTERMAR

One of the latest projects about INTERCOMPREHENSION in Europe is INTERMAR, a project funded with support from the European Commission (519001 – LLP – 2011 – PT – KA2 – KA2MP). The project intends "*to create a European community of maritime and naval institutions that share an IC approach to foreign languages*" (INTERMAR public report, 2012, page 3) with the team work of 18 institutions from 11 European countries.

The fact that INTERCOMPREHENSION means both a new method for learning languages and a way to interact and share cultures is certified in this project. Nonetheless, one of its objectives is "*to raise awareness of cultural and linguistic diversities in the professional and social context on board and in port*" (INTERMAR public report, 2012, page 5) and its slogan is "*Languages, like the sea, don't divide but set us free*". As it can be seen, there is a clear intention in this project to link education in acknowledgements with the education in values, especially cultural ones.

When taking off in this adventure, one of the clear features was that the activities and the final students' outcomes should be presented as portfolios. Work started to design a portfolio which should be both easy to follow for students who are definitely not accustomed to this way of working and for teachers not familiarized to assess in this way. And obviously, it should be designed in a way that the objectives could be accomplished.

There are six different modules available for the partners and working portfolios are designed independently for each module, each of them containing some inter-related scenarios structured in different activities which try to generate a progression in the student. Activities are generally between A2 and B2 levels so that students can choose what is best for them according to their previous level in the foreseen language. With a well-designed, clearly structured portfolio, progression is assured as the pupil chooses his/her own pace. In addition, students can discover those new aspects from the new cultures and, at a time, reflect upon their own cultural habits and prejudices: "*the activities allowed me to get to know other cultures, but also to discover my own naval culture*", writes Vânia, a student in the Portuguese Naval School.

³The National Science Education Standards (1996)

INTERMAR portfolios are divided into three main sections. In the first one the students have to fill in a Language Biography, including formal and informal language competences. This is a first push to INTERCOMPREHENSION. Importance is focused on what they can do now with the knowledge they have and what will be able to do after the project, when the students have some new tactics and means to communicate, even in those languages they thought to be absolutely strange and incomprehensible for them: "I overcame my capacities and now I know I can learn more" reports Mussa, one of the students, in his portfolio.

Then they present a dossier, a list of the work they have produced along the course. This section includes also some self-assessment documents that show the actual progress the learner is obtaining and some documents in which the student grades the materials.

A third section is a classical diary in which the students reflect, in their native language, how the course is going on. We want students who can feel identified with the notion of INTERCOMPREHENSION. Thus, personal opinions should reflect with the highest sharpness which the strong points and the weak ones in the project are.

Intermar portfolios are now being used and assessed in Belgium, Finland, France, Latvia, Lithuania, Romania, Portugal and Spain. Their analysis will enable us to reflect on the quality of materials, on the learning processes that students have constructed themselves, on the results they have achieved, on the adequacy of criteria that were designed for assessment, on the very effectiveness of the use of Portfolios. In a way, they will allow a holistic view over all the factors that are implied in a course. and therefore they will solidly ground us a sure and solid way to educational innovation in language learning.

We do not forget Miguel de Unamuno's words: "*el progreso consiste en renovarse*"

References

Capucho, M. F. (2011). Cooperating and innovating – Redinter, working together for the implementation of intercomprehension methodologies. *International Conference "The Future of Education" – Conference Proceedings – Firenze*. Retrieved June 7, 2012, from: http://www.pixel-online.net/edu_future/conferenceproceedings.php

AN INCLUSIVE EARLY CHILDHOOD TEACHER EDUCATION PROGRAM: MEETING THE NEEDS OF ALL

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Abstract

Early childhood pre-service graduates state that they do not feel prepared to work with students with disabilities and their families once they graduate. Yet, every early childhood teacher will have one or more students with disabilities in their class. They need to be prepared to work with students with disabilities before they leave the university. Conversely, pre-service students in early childhood special education state that they do not feel prepared to work with students with disabilities within the general education classroom. In most states, there is an overabundance of licensed early childhood teachers with as many as 200 applicants for one early childhood position. In early childhood special education, school districts are devoid of qualified licensed early childhood special education teachers, a common predicament for all states. In response to this need, Bowling Green State University adopted an inclusive early childhood (dual licensure) program. The issue remains, how can a university prepare candidates to meet the needs of ALL children in the early childhood classroom?

A description of a successful exemplary practice will be discussed in this session, answering the question posed above and providing tools to educators to look at change from a systemic perspective. Presenters will explore lessons learned through the development of a Inclusive Early Childhood (IEC) program. Strategies will be provided to assist others in developing a similar program.

Developing the program included tying together the early childhood program and the special education. Faculty members with no prior collaboration experiences with one another became team members working towards the same goal of designing the IEC Program. This is a undergraduate program with governance shared equally between special education and general education with support from human development and education foundation. The development of the Inclusive Early Childhood Program has afforded teams of faculty the opportunity to design courses which meet two licenses.

Higher education faculty, administrators, P-12 school personnel, and early childhood agency employees will benefit from lessons learned through the development of the IEC program. Children and families benefit by having highly qualified classroom teachers. Program graduates are eligible for both an Early Childhood and Early Childhood Intervention Specialist licenses as well as birth to age three, Early Intervention Certification, giving them enhanced marketability. Graduates of this program would be prepared to meet the needs of each child, birth to age eight.

Keywords: *Early childhood, inclusive, teacher preparation, special education*

1. Challenge

Early childhood pre-service graduates state that they do not feel prepared to work with students with disabilities and their families once they graduate. Yet, every early childhood teacher will have one or more students with disabilities in their class. They need to be prepared to work with students with disabilities before they leave the

university. Conversely, pre-service students in early childhood special education state that they do not feel prepared to work with students with disabilities within the general education classroom. In most states, there is an overabundance of licensed early childhood teachers with as many as 200 applicants for one early childhood position. In early childhood special education, school districts are devoid of qualified licensed early childhood special education teachers, a common predicament for all states. In response to this need, one public university has adopted an inclusive early childhood (dual licensure) program in place of the traditional early childhood (single license) program. Pre-service teachers will gain not only the skills and techniques necessary to effectively assist children with varied degrees of exceptionalities through this program, but also how to help ALL children within the general education classroom, regardless of severity of disability. The issue remains, how can a university prepare candidates to meet the needs of ALL children in the 21st century early childhood classroom?

2. Context

The National Center for Education Statistics (2009) indicates that 68% of public school teachers feel underprepared to work with students with disabilities. Several studies were completed regarding the lack of preparation current teachers experienced in working in the early childhood school setting with children with exceptionalities. Lambe and Bones (2006) conducted a study identifying characteristics that pre-service teachers desired in order to become effective teachers in the inclusive setting. They consider one of many challenges to be that teachers' attention may be concentrated on those who require the most help, therefore decreasing the unmet needs of neurotypical students. Orr (2009) conducted a study involving pre-service special education teachers and their experiences regarding inclusion in the classroom. It was determined that a strong knowledge base was correlated to the successful implementation of inclusion" (Orr, 2009).

In addition to the lack of preparedness, two additional issues are the significant number of early childhood education graduates and the lack of job availability specifically geared for their training. Specifically, according to the Ohio Department of Education, between 2009-2011 one public institution had 592 graduates in their early childhood program, but only 190 of these students were successful in finding employment in an early childhood setting. Yet, there is a substantial need for effective special education educators nationwide and a shortage of students willing to make this their chosen profession. For example, one of the biggest challenges in the field is finding qualified personnel and keeping them in the rural areas. A recent study conducted by the National Association of State Directors of Special Education found: "Ninety-eight percent of school districts list one of their top priorities is to meet the growing demand for special education teachers who, in accordance with the new Individuals with Disabilities Education Improvement Act (IDEA 2004), must now meet the standard of highly qualified" (ASHA, p.1).

3. Process

In responding to the challenges identified above, Bowling Green State University (BGSU) developed an innovative program that provides students with licensure in early childhood and early childhood special education, thereby enhancing pre-service students' marketability. In planning and designing this new Integrated Early Childhood Program, BGSU's faculty consulted with University of North Carolina, Greensboro, an institution with 15 years of experience with a similar program. In trying to meet the growing demands on teachers to include ALL students in the general education curriculum, it proved essential to utilize evidence-based practices, coupled with collaboration from an IHE with expertise in developing and sustaining an inclusive early childhood model.

In an effort to develop a state-of-the-art program, the development team focused on evidence-based practices while embedding family-centered and culturally responsive teaching; co-teaching at both the university and practitioner level; and Universal Design as essential components within this program. An advisory board made up of stakeholders (superintendents, principals, parents, teachers and faculty) was key to the development and implementation of the program. The Inclusive Early Childhood Program's main goal is to, through each course, enlighten and equip candidates with knowledge, strategies and skills, in order to effectively meet the needs of each child in the educational setting. The process of developing the new program mobilized faculty from multiple schools to interact, share knowledge, skills, and expertise in order to meet a goal.

Throughout the process, it was essential to address both systemic and particular issues and concerns. These issues were often complicated by structural and institutional impediments. The development of the program included tying together the early childhood program located in the School of Teaching and Learning and the special education program located in the School of Intervention Services. Faculty members with no prior collaboration experiences with one another became team members working together towards the same goal of designing a program that prepares teachers with competencies to address the needs of all children.

The new Inclusive Early Childhood Program is a four-year undergraduate program with governance shared equally between special education (SIS) and general education (STL) with support from human development (FCS) and education foundations (EDFI). The development of the Inclusive Early Childhood Program afforded teams of faculty the opportunity to design courses which meet two licenses as well as content standards and professional standards (CEC/DEC/NAEYC/ NCATE/CAEP).

4. Outcomes

In terms of benefits, young children and families from a variety of backgrounds benefit from a truly inclusive program. In addition, higher education faculty, administrators, P-12 school personnel, and early childhood agency employees benefitted from lessons learned through the development of a new Inclusive Early Childhood (IEC) program. Among the many changes, faculty members with no prior collaboration experiences with one another became team members working together towards the same goal of designing program-preparing candidates with competencies to address the needs of all children. Program graduates will be eligible for both an Early Childhood and Early Childhood Intervention Specialist licenses as well as birth to age three, Early Intervention Certification, through a state agency, giving them enhanced marketability. Graduates of this program will be prepared to meet the needs of each child and their family, birth to age eight.

5. Conclusions

While this new program is still in its infancy, the first cohort will begin the program in Fall, 2013, there are numerous conclusions about both the process and the curriculum that can be drawn after three years of intensive planning and collaboration. Other institutions considering developing a similar program might find these conclusions helpful.

First, and most importantly, there is little doubt that this program responds to a compelling need, both from teachers' perspectives and from the schools and families they serve. The program is quite rigorous; merging two teacher licenses and a certificate resulted in a significantly increased course load. While some faculty and administrators were concerned that prospective students might be unwilling to enroll in such a challenging program, initial applications, including students currently enrolled in the previous program who have opted to transfer into the new program, indicate that

the program will be in high demand. As the only undergraduate program of its type in the region, it is likely that this level of demand will continue. Additionally, feedback from inservice teachers, administrators, and community members has been consistently positive. Numerous school and agency administrators have indicated they anxiously await the opportunity to hire graduates of the Inclusive Early Childhood Program. The program has also been acknowledged by state organizations as an innovative initiative. Virtually all of the feedback has focused on both the importance of teachers being able to respond to the increasingly diverse needs of their students and the importance of providing graduates with additional qualifications that will make them more employable. Recent emphasis in the United States on early childhood education at the federal level seems likely to increase the profile of the program even further.

While the program has generated considerable interest from external stakeholders, the internal response has been complex. Faculty from all units involved in this collaborative program have been committed to the concept of an inclusive early childhood model and recognized the advantages both for their own preservice teachers as well as for the young learners program graduates would eventually serve. However, the institutional and cultural barriers that complicate interdisciplinary programs proved challenging. At an institutional level, many questions emerged: Which unit would be responsible for scheduling? How would faculty be assigned to teach classes? How would student credit hours be counted? Which faculty member should be responsible for coordinating the program? While on one level these are technical and bureaucratic issues, these questions also illuminate a larger complication regarding how collaboration across units develops. This institution is not alone in struggling to build new relationships for the purpose of developing inclusive teacher preparation programs (Harvey, Yssel, Bauserman, & Merbler, 2008).

A few key elements have emerged that will be essential in continuing to develop and strengthen these collaborations. One essential factor is a committed and flexible leadership team that is able to maintain a focus on the best outcomes for the students and the program. Such a team sets the tone for all of the communication and decision-making. In addition, there needs to be a commitment to providing adequate resources to support the program, especially in the early years. Collaboration is difficult in times when resources are perceived as limited and faculty members are concerned about their positions. Finally, creating a culture of collaboration is difficult. One of the first steps has been to establish structures for ongoing conversations during regular program meetings. Opportunities to share ideas and concerns related to the new program has not only identified issues that need to be addressed, but also helped faculty realized commonalities and develop a shared vision for the program.

In developing this program, faculty and administrators involved in the process have mirrored some of the same challenges faced in P-12 schools. Even when individuals share a common goal, in this case a program that would prepare teachers to meet the needs of all learners, creating a culture and structure that challenges existing barriers to collaboration is not easy. As is the case for colleagues in P-12 schools, however, the challenges are too great and the stakes are too high for remaining static in how and what we teach.

References

- American Speech-Language-Hearing Association. (2005). Shortages in special education and related services focus of new coalition-shortages outstrip those in math, science. Retrieved June 23, 2008 from <http://www.asha.org/about/news/2005/shortages.htm>.
- Chang, F., Early, D., & Winton, P. (2005). Early childhood teacher preparation in special education at 2- and 4-year institutions of higher education. *Journal of Early Intervention, 27*, 110-124.

- Harvey, M., Yssel, N., Bauserman, A., & Merbler, J. (2010). Preservice teacher preparation for inclusion: An exploration of higher education teacher-training institutions. *Remedial and Special Education, 31*(1), 24-33.
- Lambe, J. & Bones, R. (2005). Student teachers' perceptions about inclusive classroom teaching in Northern Ireland prior to teaching practice experience. *European Journal of Special Needs Education, 21*(2), 167-186.
- Murray, M., Curran, E., & Zellers, D. (2008). Building parent/professional partnerships: An innovative approach for teacher education. *The Teacher Educator, 43*, 87-108.
- Murray, M. & Mandell, C. (2006). On-the-job practices of early childhood special education providers trained in family-centered practices. *Journal of Early Intervention, 28*(2), 125-138.
- Orr, S. (2009). New special educators reflect about inclusion: preparation and K-12 current practice. *Journal of Ethnographic & Qualitative Research, 3*(4), 228-239.
- Stayton, V. D., Miller, P. S., & Dinnebeil, L. A. (2003). *Personnel preparation in early childhood special education: Implementing the DEC Recommended Practices*. Longmont, CO: Sopris West.

INCLUSIVE SPORT EDUCATION

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Abstract

The "Inclusive Sport Education" project stems from the idea that physical activity and sport can contribute to social inclusion and well-being of the disabled person. The school is the context in which to operate, because it is the school that can address the child with disabilities towards sport and especially towards the knowledge of the physical, psychological and relational benefits. By cooperating, sport and school steer the whole person, not limiting the intervention to only the cognitive side, but also valuing other functions, such as emotional, social, relational and motor side. The body through movement provides a bridge between us and others and marks the primary relationship that evolves and accompanies man at different stages of growth. This project finds its theoretical justification in the psychomotor approach that defines the movement as a viable educational opportunity thanks to the huge amount of different stimulus situations that it proposes. Objective of the research is to see if the planning of motor activity and a careful analysis of the problems can facilitate the integration of a differently abled person in the school and in the class. In particular, sport will act as a potential source of improvement in the perceptive development of the bodily self, the self in relation to others, self-awareness and self-esteem. The project involved the participation of the fourth Primary class, consisting of thirteen students. Among them, there is a pupil affected by Bethlem myopathy with girdle muscular deficit which, as is well known, involves a general hypotonia, a reduction of movements, rigid mental patterns, low self-esteem and limited perception of the bodily self. It is precisely on these issues that we focused our attention. In order to study these components, besides observation grids and evaluation boards, the questionnaire played a functional importance. This project adopted the PSDQ questionnaire drawn up by Marsh et al. Finally, for the examination of the social and integrative aspects, video analysis was an important tool to assess the behavior of subjects in the different areas of interaction.

The results of questionnaires administered at the beginning and the end of the project showed a real improvement of the students in the different subscales purposely considered by PSDQ. Video analysis strengthened the entire process by providing a positive visual feedback allowing subjects to the consolidation of existing skills and the improvement of general awareness and self-esteem. The results have certainly confirmed the initial hypothesis of this project: physical activity and sport have positively contributed to the social integration and overall well-being of a disabled person within the school context.

Keywords: *Integration, School, Sport, Differently Abled, Improvement.*

1. Introduction

The "Inclusive Sport Education" project stems from the idea that physical activity and sport can contribute to social inclusion and well-being of the disabled person. The school is the context in which to operate, because it is the school that can address the child with disabilities towards sport and especially towards the knowledge of the physical, psychological and relational benefits. By cooperating, sport and school steer the whole person, not limiting the intervention to only the cognitive side, but also valuing other functions, such as emotional, social, relational, and of course the motor side, which continually and inevitably interact with the same intellectual function.

Schools has the opportunity to experiment directly the daily concrete difficulties of students with disabilities and the resources that they are able to make use of if they are placed in adequately structured context. The presence of a disabled student in a school environment usually generates mechanisms of hardship and exclusion from the class group and obviously degenerates the so much desired integration. What is equally important is the preconception that usually accompanies the physical handicap, and the consideration of the person who is the bearer as being different and, above all, as an individual with a generalized automatic defect, although it is not always so. (Cottini, L., Rosati, L., 2008). Dupré, one of the first to demonstrate the importance of mobility as a form of intelligence able to bring out the human potential in the presence of specific deficits, marked a change towards the study of the body, defining a different relationship between the emotional sphere and the corporeality. The body through movement, which is its main form of expression, provides a bridge between us and others and marks the primary relationship that evolves and accompanies man at different stages of growth. (Sibilio, M., 2003). Movement is the main way to express themselves, communicate and understand, and this in the awareness that man does not show his being only through the forms of thought, but always and at the same time, through the modes of movement, sight, perception, action. (Canevaro, A., 2007). Motion is an educational opportunity and, being linked to the experiential dimension of the human being, it can certainly facilitate the hiring of behaviours in which needs and values are integrated; in addition, in the educational form, its main aim is also social collaboration, through which the subjects act not only in a cooperative way, but they relate to each other through a shared and consolidated process. (Gomez Paloma, F., Sgambelluri, R., 2012). Individuals with disabilities, probably even more than the able-bodied, need physical activity as a driving force in their lives; sport is health for all those who, having limits of different types and nature, require a range of care that allows them to improve their physical, mental and social state.

2. Design

This project finds its theoretical justification in the psychomotor approach that defines the movement as a viable educational opportunity thanks to the huge amount of different stimulus situations that it proposes. Physical activity makes possible the achievement of a broad range of goals: it gives the opportunity to educate the child in terms of motor skills, cooperation, respect for rules, but, above all, to promote all those processes of learning, self-acceptance, self-esteem, self-awareness, which otherwise would have no way to emerge and consolidate. Starting from this, it is proposed to dive into the school context to verify if the use of motor activity can be functional to achieve these objectives and how it can pursue integrative purposes referring to a disabled subject within the class group. The research work was divided into several phases within which each member held a role and a function. In particular, the phases have planned the initial process of framing of the setting, the target group and the available resources which is useful in the planning of motor activities, followed by the administration and collection of incoming and outgoing data from the PSDQ questionnaire was effective for the evaluation of the perception that people have of themselves and of their bodies as a result of interactive physical activity. This stage was edited by the undersigned Rio Laura; the following graphical analysis of the results was, however, fulfilled by my colleague Giugno Ylenia. Finally, the contribution of Gomez Paloma Filippo provided essential theoretical, scientific and methodological support.

3. Objective

Objective of the research is to see if the planning of motor activity and a careful analysis of the problems can facilitate the integration of a differently abled person in the

school and in the class. Sporting practice will become a crucial opportunity for social inclusion and will be mainly used as an important tool for growth, appreciation of differences of ability and potential, and achievement of personal autonomy; particularly, it will act as a potential source of improvement in the perceptive development of the bodily self, the self in relation to others, self-awareness and self-esteem.

4. Methods

The project involved the participation of the fourth Primary class of the Comprehensive School "Jacopo Sannazzaro" in Oliveto Citra, consisting of thirteen students (nine males and four females). Among the males, there is a pupil affected by Bethlem myopathy with girdle muscular deficit which, as is well known, involves a general hypotonia, a reduction of movements and difficulty in walking. Besides this, the subject has a slight mental delay, weak memory, difficulty in autonomy, rigid mental patterns, low self-esteem and limited perception of the bodily self. It is precisely on these issues that we focused our attention. In order to study these components, there are several instruments and methods of investigation that may be used in a complementary manner, because they are able to provide information of different kinds. In addition to observation grids and evaluation boards used to monitor the motor component, the questionnaire played a functional importance. This project adopted the PSDQ questionnaire drawn up by Marsh et al. (1994) in order to evaluate how people perceive themselves, their bodies and their motor skills. The full version consists of 70 items to which are assigned a score from 1 to 6, divided into 11 subscales; instead, in our case the questionnaire was simplified reducing it to 20 items and 4 subscales (Bodily Self, Self and Others, Self-Awareness and Self-Esteem), in order to simplify the expendability, while maintaining unchanged the measuring capacity and the validity of the instrument. The items were also formulated in such a way that the responses oriented towards the "True" indicator (4, 5, 6) acquired the positive value of improvement; whereas the answers oriented towards the "False" indicator (1, 2, 3) acquired the negative value of stall or worsening; finally, for the examination of the social and integrative aspects, video analysis was an important tool to assess the behavior of subjects in the different areas of interaction. Watching themselves in action allowed the students to gain greater awareness of their communicative, expressive and relational skills, bringing out and highlight a natural and effective integration of a disabled person within the class.

The research was carried out in 16 meetings divided into three phases, in the period from October to December on a biweekly basis. Each stage had common start and stop times:

Phase I (6 meetings):

- Exploration. This moment is dedicated to the discovery of the surrounding space, its objects and the observation of the subjects in relation to the objects.
- Execution. This moment involved the construction of motor pathways with the following specific objectives: 1) The body and sensory-perceptual functions, 2) The movement of the body in space and time, 3) Body language as a mode of communication 4) Playing and sport with its rules and the concept of fair play.
- Circle Time. Provides an opportunity for verbalization, in which children are encouraged to acquire knowledge and awareness of what has been implemented during the time of execution. Moreover, this moment has the main purpose of improving communication skills and the management of their own and those of others.

Phase II (6 meetings):

- Exploration. Time dedicated to the discovery of the surrounding space, with newly introduced objects and the observation of the subjects in relation to these objects.
- Execution. This moment involved the implementation of sport games in pairs and in teams with the same objectives of the previous phase.

- Circle Time. Involves the same elements of the previous phase.
- Phase III (2 meetings):
- Exploration. In this phase, the moment of exploration is inserted as an opportunity to experiment a new tool: video analysis. Since the first phase, at each meeting, students were filmed during their motor performance and interactions in order to create a visual feedback that allows them to enhance their awareness, self-esteem and their level of integration and socialization within the class.
 - Execution. This moment is dedicated to the screening of the videos shot during the meetings of the previous phases, which highlight the gradual improvement of the subjects in several different areas: mobility, intrapersonal and interpersonal.
 - Circle Time. Even at this stage this moment is inserted as an opportunity for verbalization: students exposed their impressions about the new tool and they became at the same time authors and judges of their experience, evaluating themselves.

At the beginning and at the end of these steps the students were given the PSDQ designed to evaluate the possible differences between Ex and Post ante monitoring. In this way, the pattern of the project was as follows:

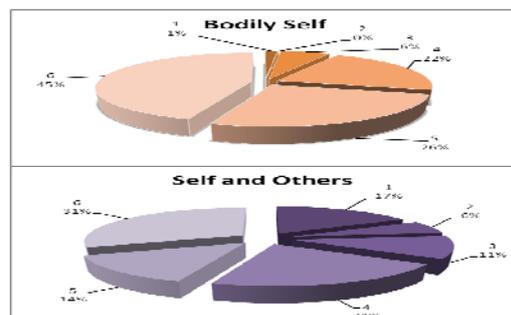
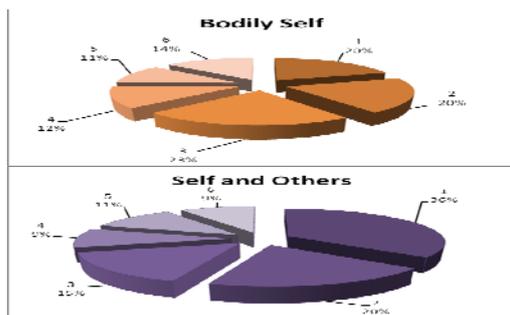
- Administration PSDQ (Ex ante)
- Phase I: - Exploration - Execution - Circle Time.
- Phase II: - Exploration - Execution - Circle Time.
- Phase III: - Exploration - Execution - Circle Time.
- Administration PSDQ (Post ante)

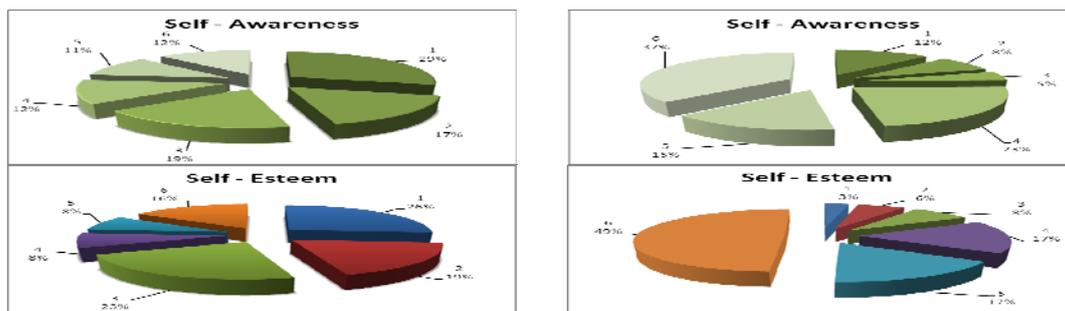
5. Results

The results of the questionnaires administered at the beginning and the end of the steps showed a real improvement of the students in the different subscales purposely considered by PSDQ. The initial negative indicators moved towards the positive ones marking the concrete educational outcome of the motor tool.

PSDQ Ex ante:	1	2	3	4	5	6	PSDQ Post ante:	1	2	3	4	5	6
1. I feel confident when doing coordinated movements.	2	4	2	1	2	2	1. I feel confident when doing coordinated movements.	0	0	0	2	4	7
2. Other people think I am good at sports.	3	3	4	0	2	1	2. Other people think I am good at sports.	2	0	1	3	2	5
3. I am satisfied with the kind of person I am physically.	1	2	4	3	1	2	3. I am satisfied with the kind of person I am physically.	0	0	0	3	3	7
4. I am a physically strong person.	4	3	2	3	0	1	4. I am a physically strong person.	1	1	1	6	1	3
5. I am quite good at bending, twisting, and turning my	2	2	5	1	1	2	5. I am quite good at bending, twisting, and turning my	0	0	1	5	3	4
6. Controlling movements of my body comes easily to me.	2	2	4	3	1	1	6. Controlling movements of my body comes easily to me.	0	0	2	1	5	5
7. Overall, I am smart.	2	2	4	2	1	2	7. Overall, I am smart.	1	1	2	1	3	5
8. I am better looking than most of my friends.	6	3	2	0	2	0	8. I am better looking than most of my friends.	2	2	1	2	2	4
9. I am stronger than most people my age.	5	5	0	2	0	1	9. I am stronger than most people my age.	1	1	1	6	2	2
10. My body is agile and flexible.	5	1	2	1	2	2	10. My body is agile and flexible.	0	1	1	1	2	8
11. I feel that my life is very useful.	5	3	3	0	0	2	11. I feel that my life is very useful.	1	1	0	1	2	8
12. I am overweight.	6	3	1	0	2	1	12. I am overweight.	6	3	1	0	2	1
13. I have good sports skills.	4	2	2	2	1	2	13. I have good sports skills.	1	0	0	4	3	5
14. I am good looking.	3	2	3	1	2	2	14. I am good looking.	1	0	0	5	2	5
15. Most things I do, I do well.	3	3	2	1	2	2	15. Most things I do, I do well.	0	0	1	2	2	8
16. Other people think that I am fat.	4	1	2	3	1	2	16. Other people think that I am fat.	6	1	2	2	1	1
17. Other people think that I am good looking.	5	1	2	1	2	2	17. Other people think that I am good looking.	0	0	2	1	2	8
18. Overall, I have a lot to be proud of.	3	2	3	2	1	2	18. Overall, I have a lot to be proud of.	0	0	0	4	1	8
19. Overall, I am very good.	3	2	2	1	2	2	19. Overall, I am very good.	0	1	1	2	2	7
20. Everything I do seems to turn out right.	4	3	3	0	1	2	20. Everything I do seems to turn out right.	0	1	2	3	3	4

Legend	Bodily Self (BS)	1 False
	Self-awareness (SA)	2 Mostly false
	Self-esteem (SE)	3 More false than true
	Self and others (SO)	4 More true than false
		5 Mostly true
		6 True





The graphs show the following quantitative changes:

- Bodily Self: >9% (4); >14% (5); >28% (6).
- Self and Others: >12% (4); >3% (5); >19% (6).
- Self-Awareness: >11% (4); >5% (5); >22% (6).
- Self-Esteem: >11% (4); >10% (5); >27% (6).

6. Discussion/Conclusions

The orientation of the answers towards the positive indicators showed the obvious improvement of the conception of the body, self-awareness of motor skills, emotional and social skills, relationships with others and sense of self-esteem. At the beginning all of these components seemed limited, constrained, enclosed in a Self that had difficulties in emerging and exposing itself. Also the differently able subject showed a clear tendency of improvement in all these areas, with particular reference to the relation between Self and others: initially, isolation was frequent especially in times of emotional and physical comparison; meeting after meeting the positive consensus from peers after every conquest helped this subject to open himself to dialogue and sharing. Furthermore the video analysis strengthened the entire process by providing a positive visual feedback allowing subjects to regard themselves in action and interaction, encouraging learning and helping them to overcome their limitations with the consolidation of existing skills and the improvement of general awareness and self-esteem. The results have certainly confirmed the initial hypothesis of this project: physical activity and sport have positively contributed to the social integration and overall well-being of a disabled person within the school context.

References

- Bizzaglia, G., (2000). *Lo sport nella scuola*. Roma: Movimento.
- Canevaro, A., Mandato, M., (2004). *L'integrazione e la prospettiva inclusiva*. Roma: Monolite.
- Canevaro, A., (2007). *L'integrazione scolastica degli alunni con disabilità, trent'anni di inclusione nella scuola italiana*. Trento: Erikson.
- Cottini, L., Rosati, L., (2008). *Per una didattica speciale di qualità. Dalla conoscenza del deficit all'intervento inclusivo*. Milano: Morlacchi Editore.
- Gomez Paloma, F., Sgambelluri R., (2012). *La disabilità tra didattica e sport*. Napoli: Edizione Simone.
- Hughes, M., Lipoma, M., Sibilio, M., (2010). *Performance analysis. Elementi di base e aspetti applicativi in campo educativo e integrativo*. Milano: Franco Angeli.

THE WOODCUT (XYLOGRAPHY) AS A METHOD OF AESTHETIC DEVELOPMENT AND SOCIAL INTERACTION FOR VISUALLY IMPAIRED

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Abstract

This Research was developed in the school at the Instituto Federal Fluminense - campus: Campos-Centro as Extension Project, connected to PROEX-PRÓ-REITORIA DE EXTENSÃO by Proclamation 105/2012, in the field of Art and Inclusive Education specifically visual impairment, taking as reference the use of practical activities in woodcut. In this context, we seek to discover ways that experiences in space may represent Woodcut development of sensory and aesthetic experiences in visually impaired students from pedagogical practices that also promote social inclusion. Aiming to understand how the woodcut can contribute to the sensory and aesthetic development, investigating how cultural transformations take place in the face of challenges during the proposed research. The survey uses a methodology based on a qualitative approach, such as reflection and analysis with use of methods and techniques for understanding the object of study in the context of action research and participant observation. The theoretical basis is supported by Vygotsky, Freire, Cauquelin, Silva among others, and the categories researched were: Perception, Aesthetics Training and Social Interaction.

Keywords: *Inclusive Education, Training Aesthetics, Visual Impairment, Woodcut and Art Education.*

1. Introduction

The current scenario of aesthetic debates about the formation of young people for citizenship in social inclusion and promote access to scientific knowledge, arts and culture, mainly by being supported and fomented by the Principles and Guidelines of Professional Education suggests that new parameters appear in school life.

2. Objectives

Understanding how the woodcut can contribute to the sensory and aesthetic development, investigating how cultural transformations take place in the face of challenges during the proposed research.

3. Aesthetic Development

Using the term aesthetic as an area of signification in arts, Cauquelin (2005) divides it into two categorizations: first employed as an adjective, qualifying attributes and behaviors related to artistic activity; On the other hand, the aesthetic noun, leads us to a theoretical corpus that define the specific field of art, proposes studies and works over views of historical periods, assuming aesthetic theories from their own authors.

In our study we chose the first categorization, understanding the aesthetics together with Baumgarten (apud, Cauquelin, 2005) as the essence of sensible thought - "science of the sensible". Seeking the awakening and development of artistic sensitivity in visually impaired students from the woodcut.

Experiments in woodcut searched in plurality, an articulator principle of knowledge, implying means of educational work in diversity. According to Vygotsky (2008), human development is closely linked to learning, which is a major source of concepts and a powerful force that directs the fate of his mental development.

Therefore, experiments in woodcut committed to the aesthetic development of the students, realizing the artistic languages as sensitive forms of creation and expression. This form of aesthetic construction goes in the opposite direction of the practice of education practiced in contemporary society that still prioritizes verbal language to the detriment of other subjective languages.

4. Sociocultural Interaction

The weekly meetings, besides the application of engraving and other artistic techniques, sought to establish a reciprocal relationship between the participants, by a mediating connection between the students and the researcher. So, the researcher directed the activities proposed in the construction of meanings and cultural appropriation.

For Silva (2010, p.211), the teacher who seeks to develop these mediations and cultural appropriation in their pedagogical practice, should formulate basic questions like "what practices operate to favor the interactive construction of knowledge in educational institutions? What situations offer to students?".

According to the author, beginning his action by these questions, the teacher must be clear who is targeting the interactions between students and that they" are not empty glasses that teachers should fill. "As for Freire (2010) who sentences that "(...) teach is not to transfer knowledge but to create the possibilities for its construction" (p.22).

According to the submitted questions, sociocultural interaction desired by the experiences in woodcut, sought reflection, discussion of ideas, exchange of experiences and opinions.

5. Aesthetic and Sensory Experiments in Woodcut

In this particular part of the article, we describe briefly the development, notes the analysis of the collected data and facts experienced during the research, intending to share part of production achieved during the 20 meetings, with each lasting approximately 02 hours to 15 visually impaired students belonging to the High School and Technical from IFF -Instituto Federal Fluminense - campus Campos-Centro in the months of October and December 2012.

The woodcut is a technique that requires manual dexterity. So, by way of introduction, other bases and adapted techniques were created that enabled free speech perception and production of embossed art made by the participants.

Famous art works have been reproduced, noting that all had some of the same visual concept through testimonies of others. Our goal was to contextualize the works, allowing a specific concept of aesthetics of each design submitted. From this understanding, participants began trying to play its own interpretation of drawings perceived and develop their own original works in texture embossed designs.

As a new challenge, was delivered to each of the man array of Wood and gouge tool, a first contact with the production of a woodcut. All had great difficulty and resistance to "groove" the wood. Although some of them could perform the matrices. For the initial difficulty, the original material was replaced by Styrofoam and toothpicks.

The Styrofoam replaced the wood and the stick replaced the gouge, facilitating the production process.

5.1 Collection Plan and Data Analysis

In the search for global understanding of the phenomena, we assume a participant conduct in seeking understanding and social significance in the environment, space and time lived experiences in the development of woodcut, sharing cultural experiences with participants (Chizzotti, 2003,p.82).

We then created a reciprocal relationship between us as researchers and research subjects, which was not undone at any time during the beginning and end of the research. This symbiosis, according to the author, "it is essential to seize the links between people and objects, and the meanings that are constructed by the subjects" (p.84).

After the close of data collection, we began more formal phase of the analysis. Based on a set of descriptive theoretical categories, supported the theoretical reference of the study, was made the first classification of the data, according to the theory of coding Lüdke and Andre (2010). This allowed the division of the material into its component elements, without, however, losing the connection of these elements with others.

5.2 Analysis of Search Categories

Category 01 - The development and use of Perception in experiences in woodcut were observed through: continuous observation of the researcher during the proposed activities; the use of techniques and materials that made possible the realization of relief's indicative forms; the use of sensitivity and expression through different artistic languages; the making of matrices.

Category 02 - Aspects in Aesthetic Training were investigated from the: Discovery of the relations established directly and indirectly with the act of creation from the lucidity; the use of body language; behavior; interaction and identification of participants with the activities.

Category 03 - Social Interaction was analyzed through: compliance with the exchange of experiences during the creative process; the dialogues between the participants; the group activities; cultural exchange among participants; the creative intervention.

6. Final Thoughts

In the analysis of survey results, we found a space transformer in sensory and aesthetic experiences in woodcut, arousing an intertwining of cognitive relations. The woodcut is revealed as an aesthetic language, which uses artistic and sensorial expression, presenting itself as a transforming teaching resource for Teaching Art with visually impaired, able to significantly promote the development of perception, aesthetic and sociocultural interaction of the participants.

References

- Cauquelin, Anne. (2005). *Teorias da arte*. São Paulo: Martins Fontes.
- Chizzotti, Antonio. (2003). *Pesquisa em Ciências Humanas e Sociais*. São Paulo: Cortez Editora.
- Freire, Paulo. (2010). *Pedagogia da Autonomia: Saberes Necessários à Prática Educativa*. São Paulo: Paz e Terra.
- Ludke, Menga & André, Marli E. D. A. (2010). *Pesquisa em Educação: Abordagens Qualitativas*. São Paulo: Editora Pedagógica e Universitária Ltda.

- Silva, Marco. (2010). *Sala de Aula Interativa: educação, comunicação, mídia clássica, internet, tecnologias digitais, arte, mercado, sociedade e cidadania*. São Paulo: Loyola.
- Vigotsky, L.S. (2008). *Pensamento e Linguagem*: São Paulo: Martins Fontes.

THE INCLUSION OF CHILDREN WITH PHYSICAL DISABILITIES IN MAINSTREAM PHYSICAL EDUCATION: THE CHILDREN'S REALITY

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Abstract

At a time when education has to face the challenge of ensuring equal status and inclusive learning there has been much discussed and written, both in the United Kingdom and abroad, about entitlement and the implementation of appropriate policies. This research focused upon the reality of day-to-day experiences in Physical Education for pupils with disabilities. This research examined the gap between the rhetoric of inclusion in schools and the reality of the physical education experience for disabled pupils.

The research sought to illuminate the perception of reality [established through prior research with teachers in schools across London] through direct observations of pupils in two school settings. Initial research established a positive intent to include among staff, inclusive policies and inclusive protocols in schools. This research sought to establish the veracity of meaningful inclusion and the context of successful learning in schools noted for excellent practice. The schools involved exhibited strong characteristics of 'inclusive schools', whereby resources and facilities, staffing and curriculum engaged parents, pupils and staff in an inclusive learning environment. Children with physical disabilities across key stages three and four [years 7, 8, 9, 10, 11] were observed and interviewed to give voice to the reality of their physical education experience. The data indicated that, in reality, social inclusion and successful physical activity were limited. This work revealed the potential for change that existed in individual teachers' practice, while also confirming the difficulty physical education teachers had in challenging the status quo. The findings exposed the inadequacies of teacher training and the exclusionary nature of traditional UK physical education settings and it was apparent that the opportunities for and the experiences of pupils were more reliant upon the quality of individual teachers and learning support assistants than any school or government policy. In addition to highlighting the issues of inclusive physical education, the data also confirmed the commitment of the teachers in this study to inclusive schooling and pupils' own awareness of their opportunities as much as the barriers some of them face in their physical education setting.

The conclusion was that inclusive policy gives a sound basis for inclusive schooling but that policy does not enable or facilitate inclusive practice for teachers and learners in all settings. Greater attention must be given to the training and development of staff and the reality of the learning experience, including social inclusion, for pupils.

Keywords: *Inclusion, teacher behavior, pupil voice*

1. Introduction

Morally, inclusion and the right to participate in the curriculum are seen as the right thing to do. Nonetheless, while the notion of disability de-medicalises social frameworks, for physical educationalists the medical model of impairment still provides the level of understanding many teachers have regarding pupils with physical disabilities. In light of this very traditional model of understanding inclusion, the research centered upon the reality of day-to-day experiences in Physical Education for pupils with disabilities, reflecting the concern that in the UK, debate still vacillates around the efficacy of inclusive learning settings.

The development of Education, Health and Care plans as the platform for educational provision for pupils with disabilities (DfE, 2012) marks another *moment* in the history of inclusive education provision in England (Barton, 2010). The coalition government's educational agenda has reignited the inclusion debate. Inclusion demands equity, yet the questionable confusion between equity and equality muddied the waters of the inclusion debate throughout the 1980s, 1990s and into the 21st century. Equality or sameness of provision is not inclusive, yet many PE teachers understand inclusive learning to be about fitting the child into the same lessons, equipment, tasks and learning outcomes as all other children. Yet research (Goodwin, 2012) warns that including a disabled child in PE lessons takes teachers out of their comfort zone, noting a strong belief among PE teachers that they needed specialist equipment and knowledge to include children with disabilities. Analogously, Fernandez (2000) had found that teachers suggested that they lacked the training to teach youngsters with disabilities and that inclusion would adversely affect the education of other pupils.

Teachers' capacity to effectively include is constrained by their own understanding of success and this is tempered by their acceptance of the traditions of physical education inherent in our national curriculum. The advocacy of Sport Education (Penney and Chandler, 2000) and Teaching Games for Understanding (Griffin and Butler, 2005) models of teaching and learning are gaining credibility. However, traditions of didactic teaching are endorsed by Office for Standards in Education (Gladingbowl, 2013), restraining potential initiatives and reinforcing the notion that a PE curriculum created by the able-bodied and generally taught by the able-bodied, is still the dominant pedagogy. While the national curriculum reinforces the perception that PE is integral to the development of the social skills there is little evidence that this actually happens for children with disabilities (Butler and Hodge 2004). If pupils are not interacting with "*socially competent peers*" as Odom, McConnell, McEvoy, Peterson, and Ostrosky et al. (1999, p.2) suggested they should, can PE be regarded as fulfilling its socialization function? Understanding the social interactions that occur in PE lessons would help teachers ensure that pupils' social as well as practical skills are developed. The challenge for the PE profession is to provide opportunities that give the same high quality physical and social educational experience to all pupils, a reflection that helped provide the context for this research.

2. Methodology

The essential philosophy of the research, social constructionism, encompasses what Crotty describes as "*the whole gamut of meaningful reality*" (1998, p.54). Bassey (1999) suggests that reality cannot exist without the people for whom it was constructed. Therefore, the research, focusing on those delivering PE and those in receipt of it, was located in schools demonstrating commitment to, and exhibition of, inclusive practice. The research instrument, a live observation tool supported with concurrent researcher narrative was developed as an appropriate strategy in the classroom setting (Jorgensen, 1989), sanctioning looking beyond teachers views of events, recognizing that they may genuinely have been unaware of the complexities of the setting. Staff willingness to be observed was the key to accessing the classes and teachers gave full access to their lessons. Throughout three terms, four children were observed each week, representing a full range of curriculum activities and settings.

An important consideration was *what* to observe. Previous research (Goodwin, 2012) suggested that teachers felt pupils experienced success in PE lessons, establishing a locus for the observations. Since inclusive schooling has social inclusion at its heart, this gave a second focus. Reliability and validity were established through extensive pilot projects and while educational research has limited of generalisability, the depth of data gave a comprehensive basis for analysis and conclusion. Accuracy in making observations was vital and the research tool drew upon the categorization

approaches that had been used to good effect by Croll (1986) including non-talk and talk activities, and skills-related activities as well as active and non-active involvement. Further categories were drawn from Curtner-Smith and Chen (1995), who used body position, level of activity, teacher behavior, and lesson context as coding for events in physical education. These social, physical, verbal and non-verbal behaviors were particularly helpful in generating understanding about social interactions in the PE setting. The method of recording the categories utilized an event driven approach taking into account as it did the structure of PE lessons; even using Bloom's taxonomy - cognitive domain learning (Page, 2010) PE lessons still tend to follow the pattern of introduction (knowledge), development (comprehension), consolidation (application and analysis), and closure (synthesis and evaluation). Consequently, the recording tool used a time line based on the traditional structure of the PE setting which was adaptable to lessons ranging in time from 40 minutes to one hour forty minutes.

Observations were analyzed as a percentage of events and interactions. These recordings helped to establish the nature of the PE experience for pupils with disabilities. The ensuing discussion follows the themes embraced by the observations, these being the opportunity to succeed, social interactions and the inclusivity of the experience.

3. Discussion

3.1. Success in PE

Success in PE remains a difficult concept to measure. If, as Wright and Sugden (1999) suggested, teaching children with special needs was "*simply an extension of good practice*" (p.28) then teachers' belief that they gave opportunities for success should have been evident through pupil response to tasks and activities. However, the observation data indicated that pupils were indeed involved, but that they had limited levels of success in many of the tasks. Only 16% of all physically active events noted for all four pupils were those where they were successful in PE tasks or activities. This was disappointing since Robertson (2000) showed that, if learning was appropriately structured, pupils could experience success.

As the activities and tasks became more complex then difficulties emerged. Yet even where pupils struggled - '*gives the appearance of being on task because is active*' - teachers construed this activity as successful. Unfortunately, pupils with disabilities spent a disproportionate amount of time doing other things including watching, waiting, and getting to and from lessons, thereby missing opportunities to learn. Thus pupils using mobility aids found it extremely difficult to establish a role in games' settings and on occasions left lessons without touching the ball and, upsettingly, even in simple rallying games they '*didn't get many goes 'cos out so quickly*'. The amount of time disabled pupils spent not involved in activities should give physical educationalists pause for thought. If we accept Block's (2000) argument that learning in PE was not about the game but about the child then pupils who were always out first or who were never passed the ball because they were less mobile, did not benefit from the setting.

3.2 Social Inclusion

Literature authenticated a focus on how children both worked with and socialized with their peers. While some peers ignored their overtones pupils with disabilities were never placed in the position of the child always picked last (Dodds, 1993). Self-selecting away from disabled pupils was more subtle where '*pupils changed teams around and isolated the 2 SEN pupils*'. It was significant that very few pupil-to-pupil interactions emanated from the pupils' peers. Data suggesting limited reciprocity of relationships also implied that teachers' class management did not address the need for all pupils to experience cooperative and leadership opportunities.

3.3 Teacher based interactions

An equally important component of inclusive PE was the relationship between teacher and learner that [hopefully] enabled pupils with disabilities to develop the self-confidence and self-worth. Teachers explained and reiterated instructions consistently and frequently in all phases of the lessons. Consequently, teacher-based interactions accounted for over a quarter of all events observed, although explanation accounted for a significant proportion (60%) of these interactions. In the introductory phase pupils with disabilities watched or waited for their go for 6% of events. This figure more than doubled and then tripled in succeeding phases of the lesson. Social and physical inclusion could only occur where the tasks demanded pupil involvement and unfortunately the data indicates that this diminished as lessons developed. 85% of observation events involved no interaction, disabled pupils just watched and waited. It seemed that the absence of pedagogy and curriculum approaches that ensured pupils appropriately participated in lessons reflected the traditions of elitist PE.

PE teachers recognize this as an issue that occurs with pupils who are not good games' players, the other pupils do not want them on their team. While Barton (1993) emphasized that expecting disabled athletes to emulate the qualities of physical ableness was insulting, Lieberman, Houston-Wilson and Kozub (2002) suggested that poor planning and program development also put pupils in settings they did not have the skills to manage. Pupils did not overtly reject their disabled peers, but through their play they often isolated them, playing around them and placing them in goal, and physical educators found this lack of equal status relationship difficult to mediate. Vickerman, Hayes and Whetherly's (2003) notion that inclusive teaching is mostly extended good practice and differentiation is a point not yet fully appreciated by teachers.

4. Conclusion

Recognising that teachers may say the politically correct thing but have very different feelings when faced with the reality of including diverse children in their own lessons was the impetus for this research project. Sadly, the data from the study suggests that teachers are not being fully inclusive, although analysis indicates a lack of understanding rather than the lack of intent or desire to include. Two substantive barriers seem to exist; traditional pedagogies that vie with new models of delivery and a lack of teacher awareness of the pupil experience. Teachers need to act upon their intentions if better practice, ensuring locational, social, and instructional inclusion, is to evolve. Teachers already educate the estimated one in ten pupils with dyslexia, asthma and dyspraxia, and either such pupils were not successfully included in physical education or teachers do have the knowledge to include effectively if they had the courage to apply that knowledge to a more diverse population. This suggests a closer examination of Initial teacher education, teacher educators and their advocacy of an inclusive agenda as a tenable way to effect the more consistent approaches. As Oliver (2004) pointed out, teaching was teaching and with the right commitment, teachers could all make their lessons inclusive.

References

- Barton, L, (1993) Disability, Empowerment and Physical Education. In J. Evans, *Equality, Education and Physical Education*, 43-54. London: The Falmer Press.
- Barton, L, (2010). Inclusive and Special Education within the English Education System: historical perspectives, recent developments and future challenges. *British Journal of Special Education*, 37, 61-67.
- Bassey, M, (1999). *Case Study Research in Educational Settings*. Buckingham: Open University Press.

- Block, M.E, (2000). *Including Students with Disabilities in General Physical Education*, 2nd ed. Baltimore: Paul H. Brookes
- Butler, R.S. & Hodge, S.R, (2004). Social Inclusion of Students with Disabilities in Middle School Physical Education Classes. *Research in Middle Level Education*, 27, 69-88. Retrieved January 2005. From <http://nmsa.org/Publications/RMLEOnline/Articles/Vol27No1Article2/tabid/530/Default.aspx>.
- Croll, P. (1986). *Systematic Classroom Observation*. Lewes: The Falmer Press.
- Crotty, M, (1998). *The Foundations of Social Research. Meaning and Perception in the Research Process*. London: Sage Publications
- Curtner-Smith, M. & Chen, M.D, (1995). Health-Related Fitness in Secondary School Physical Education: A Descriptive Analytic Study. *Educational Studies*, 21, 55-67
- DfE, (2012). *Support and Aspiration: A New Approach to Special Educational Needs and Disability. Progress and Next Steps*. London: HMSO.
- Dodds, P, (1993). Removing the Ugly 'isms' in your Gym: Thoughts for Teachers on Equity. In J. Evans, (ed). *Equality, Education and Physical Education*, 28-42. London: The Falmer Press.
- Fernandez, M, (2000). Educating Mary: A Special Education Case Study in One Western Australian High School. *Support for Learning*, 15, 118-125.
- Goodwin, L.J, (2012). *The Inclusion of Children with Physical Disabilities in Physical Education. Rhetoric or Reality?* Lambert Academic Publishing .
- Gladingbowl, M. (2013). Ofsted's new approach to school inspection. Keynote Lecture. May 2013. 32nd COBIS Annual Conference. London.
- Griffin, L.L. & Butler, J. E, (eds) (2005). *Teaching Games for Understanding: Theory, Research, and Practice*. Leeds: Human Kinetics
- Jorgensen, D, (1989). *Participant Observation. A Methodology for Human Studies*. Applied Social Research Methods, 15. London: Sage Publications.
- Lieberman, L.J. Houston-Wilson, C. & Kozub, F.M, (2002). Perceived Barriers to Including Students with Visual Impairment in General Physical Education. *Adapted Physical Activity Quarterly*, 19, 364-387.
- Odom, S.L., McConnell, S.R. McEvoy, M.A. Peterson, C. Ostrosky, M. Chandler, L.K. Spicuzza, R.J. Skellenger, A. Creighton, M. & Favazza, P.C, (1999). Relative Effects of Interventions Supporting the Social Competence of Young People with Disabilities. *Topics in Early Childhood Special Education*, 19, 75-92
- Oliver, M, (2004). Does Special Education have a Role to Play in the 21st Century? In G. Thomas & M. Vaughan, (Eds). *Inclusive Education. Readings and Reflections*, 111-115. Maidenhead: Open University Press.
- Page, B, (2010). 12 Things Teachers Must Know about Learning. *Education Digest*, 75, 54-56.
- Penney, D. & Chandler, T, (2002). Physical education: what future(s). In D. Kirk (ed.) *Physical Education*, 285-306. London: Routledge.
- Robertson, C, (2000). *The Theory and Practice of Inclusive Physical Education*. Presented at International Special Education Congress. 2000. Including the Excluded. University of Manchester. Retrieved May 2000. From <http://www.isec2000.org.uk/abstracts/papers>.
- Vickerman, P. Hayes, S. & Whetherly, N, (2003). Special Educational Needs and National Curriculum Physical Education. In S. Hayes & G. Stidder, (eds). *Equity and Inclusion in Physical Education and Sport*, 47-62. London: Routledge.
- Wright, H. & Sugden, D (1999). Curricular Entitlement and Implementation for All Children. In N. Armstrong, (ed). *New Directions in PE. Change and Innovation*, 110-130. London: Cassell Education.

PHYSICAL EDUCATION IN THE PRIMARY SCHOOL. EDUCATIONAL PATHWAYS TO PERSONAL AND SOCIAL AUTONOMY TO THE BEST QUALITY OF LIFE

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Abstract

The aim of this study is to provide a teaching proposal aimed to the development and promotion of personal and social autonomy of people with or without disabilities, to be used within the framework of primary school. More than 30 years after the entry into force of Law no. 517/1977, nowadays the integration of students with disabilities is an evolving process, which has already brought significant innovations to Italian schools towards a more inclusive system; however, some critical issues still need to be addressed. An illusory integration often takes places, which is based on a static culture of learning and is often inadequate for the students' needs. A better quality of life is a key element towards which teaching shall be oriented, with a specific focus on the acquisition of psychomotor skills aimed at the personal and social autonomy. Physical education plays a key role in the development of these skills, especially during primary school.

The current proposal may be part of the educational planning for the Individual Education Plan, within the broader framework of the life plan of a student with disabilities, on the basis of the conceptual model of the International Classification of Functioning (ICF). Educational motor activities are a fertile ground for the development of inclusive teaching proposals aimed at reaching such autonomy.

The key elements on which these interventions shall be based are the following: a shared educational responsibility among the different players involved in the management of disabled students, a favorable learning environment, inclusive teaching strategies and a careful evaluation of processes, rather than results. The methodology used focuses on the role of the body and movements as a mean to develop basic skills for personal and social autonomy. Motor-sport activities may help anyone, people with or without disabilities, to discover themselves and meet the need of feeling independent and able.

With reference to the present study, after identifying the educational areas of intervention, which are mainly based on the training needs of students with disabilities, a teaching pathway has been drafted aimed at the acquisition of a correct road behavior. The achievement of autonomy by disabled people is a great challenge. The school system shares a huge responsibility with the families and local agencies in the creation of a life plan in which independence and autonomy play a key role in the achievement of a better future for everyone. The teaching guidelines and the methodology used in this study may help teachers to figure out new pathways or new projects that might adapt to specific needs, taking into account the different problems and the different social and cultural contexts.

Keywords: *Physical education, Disability, Primary school, Personal and social autonomy.*

1. Introduction

More than 30 years after the entry into force of Law no. 517/1977, nowadays the integration of students with disabilities is an evolving process, which has already brought significant innovations to Italian schools towards a more inclusive system;

however, some critical issues still need to be addressed (Gomez Paloma, 2012). An illusory integration often takes place, which is based on a static culture of learning and is often inadequate for the students' needs. Significant organizational and teaching problems are often present, which do not always allow the appreciation of human resources. Learning is strictly connected to how activities are organized, and to how planned targets are achieved in the teaching process. It is useless to deny that educational planning and programming for students with different abilities is usually entrusted to the support teacher, who is unfortunately left alone in his/her often-utopian project. Indeed, the other class teachers share this project only on the surface; they do not feel responsible for the educational process of the student with disabilities. The Ministerial Memorandum no. 250/85 states that the support teacher, the class teachers and the whole school community share the responsibility for the integration of students with different abilities (Sibilio, 2003). However, the support teacher is probably the first one who needs integration. Indeed, an accepted practice exists which is not open to change, to the need to cooperate, participate and synergically promote training actions in the educational plan of students. Educational plans shall promote programmed, even though different targets, without excluding the student with special needs from the general class activities. Educational programming shall create integration-promoting situations while meeting the needs of specific organizational and teaching needs.

Disability shall be an opportunity to stimulate the development of teaching proposals that allow the whole class to have a project where knowledge is important and is based on living together; knowledge can become scientific, technical, humanistic knowledge, as well as personal development (lanes, 2005). The student with disabilities or special educational needs shall become a resource, an opportunity for the development of positive social-emotional relations.

A better quality of life is a key element towards which teaching shall be oriented, with a specific focus on the acquisition of psychomotor skills aimed towards personal and social autonomy. Physical education plays a key role in the development of these skills, especially during primary school. From the perspective of complexity, disability has a bio-psycho-social dimension, which requires double attention: both towards the person who has specific needs and towards the physical and social context within which needs are expressed (Carraro, 2005). From the multidimensional perspective of the ICF dated 2001, disability does not only include organic factors, known as 'functions' and 'body structures', but also context-related factors. Indeed, biomedical factors are followed by other difficulties related to personal and social functioning. This new approach takes into account the body, the activity and the participation at the same time, dynamically connected among each other.

The Madrid Declaration of 2002, promulgated on the occasion of the International Year of Disability (2003), highlights the key role that the educational system plays in the creation of a future for everyone, as a place that guarantees personal development and social inclusion. "...Schools should take a leading role in spreading the message of understanding and acceptance of disabled people's rights, helping to dispel fears, myths and misconceptions and supporting the efforts of the whole community...". The goal of education for all shall be met, in compliance with the principles of full participation and equality. Therefore, the school shall be the central place where personal development and social inclusion are guaranteed through targeted educational actions. These teaching pathways are going to allow each child to be independent as much as possible and, at the same time, are going to provide all children, with or without disabilities, with the opportunity to develop their sensitivity and greater respect towards those who are less fortunate. "*The education system is the first step towards an inclusive society*" (From the Madrid Declaration No discrimination, more positive action, equal social integration", held in Madrid in 2002).

2. Design

On the basis of the analysis of some issues in everyday school life about the integration of disabled students in relation to EU regulations, this research group tried to highlight, via the theoretical-argumentative method, the value of promoting autonomy at school. Therefore, some key methodological elements have been identified, which shall be taken into account during the planning of educational interventions.

3. Objectives

The present study has three main objectives:

- Highlighting the value of developing personal and social autonomy of disabled students at school, especially in primary school;
- Identifying the key methodological elements to be taken into account in the planning of educational interventions aimed at developing students' autonomy within the framework of an inclusive didactic environment.
- Proposing new pathways aimed at the promotion of autonomy, putting the role of the body center stage.

4. Methods

In the light of the above considerations based on a concise analysis of the legislative framework and of the several international declarations, this research group felt the need to implement teaching strategies, at school level, which took into account the complex teaching and learning scenarios, in order to provide points of references to implement appropriate and suitable measures, especially when disabled students are involved. In order to meet these needs, scientific evidences from the national and international community were taken into account and then related and placed in the context of the teaching practice, to provide a rationale for its goal as set out in the objectives. The research group has carried out a number of studies in order to identify the most suitable methods to face the critical issues dealt with in the above Introduction and move towards new pathways meeting these planning and teaching needs. Personal and social autonomy of the disabled student is the starting point on which a better future shall be based.

5. Results

"In his development towards a state of autonomy, an infant with a disability encounters two types of difficulty. On the one hand there is the difficulty represented by the child's disability and, on the other, attitudes of fear and the ambivalence of the environment which interfere with the attainment of the level of his or her potential autonomy, although this can nevertheless be reached notwithstanding the disadvantages of the situation. Very frequently parents develop a protective and solicitous attitude towards the child that hinders his acquisition of independence" (Contardi, 2004).

The first methodological element to be taken into account is the recognition that schools and local training agencies have the obligation to facilitate the acquisition of relational methods oriented towards autonomy and to discourage some consolidated practices within the family. The Rome-based Italian Association of People with Down Syndrome (AIPD) has sponsored a three-year study in Italy aimed at the education to autonomy for teenagers with Down Syndrome and intellectual disability. This initiative was carried out with the help of many Italy-based associations and it showed significant improvements of several autonomy-related skills (Contardi, 2004).

The school environment has always been considered as a privileged context of relations. Unfortunately, in the daily reality, these relations are not always positive, and sometimes may trigger a series of chain consequences leading to the exclusion and

marginalization of disabled students. Therefore, new opportunities shall be created to allow disabled students to live in an environment of positive interactions and social-emotional relations, which support them and encourage them during learning.

Motor activities in school are a very favorable setting to create significant learning opportunities. The National Guidelines for the 2012 Curriculum from the Italian Ministry of Education (MIUR) highlight that Physical Education plays a key role in the care for wellbeing, the promotion of cognitive, social, cultural and emotional experiences through comparison with others, sharing group experiences and creation of life experiences. It is about the creation of a positive past, which gives great attention to participation, awareness of personal and motor skills, and promotes new opportunities for cooperation and sharing, using any method to communicate.

Moreover, the MIUR Guidelines (2009) invite teachers to plan specific interventions, together with all the players involved, taking into account the different cognitive styles and attitudes on the basis of a customized teaching approach based on the student's real needs. This teaching approach shall be focused on learning through socialization, interpersonal relations and communication.

This hypothesis leads us to think about the second methodological element in the educational planning: the creation of a favorable environment. Indeed, the creation of a positive human environment is a key element to allow emotional relations to bring about the expected results.

The best support teachers are the schoolmates; they must become aware of the significant role they play towards disabled students in order to become the key players of a horizontal approach, which is more democratic, educational, guiding and creative (Carlini, 2012).

Based on motivation and mutual support within an emotional context producing safety, solace and support, new positive interpersonal relations can be developed, which are able to highlight competences and skills, overcoming deficiencies or limitations.

The third element to be taken into account in the educational planning for an inclusive school is the implementation of strategies and methods that encourage cooperative learning, team and pair work, tutoring, discovery learning and role-play. Educational planning shall be based on the students' personal interests and on their real needs. Activities shall be organized on the basis of their motivation, willingness, preferences and attitudes. Also, it is required to start from real problems, from life problems to be solved out. Knowledge, skills and autonomy shall not be simply transmitted in a passive way, but rather developed on the basis of students' active participation. Action and communication taking place within real experiences may act as a significant stimulus to learning.

Objectives that can be reached through these educational pathways are indeed cross-disciplinary objectives, in view of the fact that the development of autonomy also strengthens language and math skills.

Learning environments shall be characterized by predictability that allows activating accessible and gradual inputs and information, while reducing behaviors that may develop when subjects are more influenced by the expectation of their action rather than by the true content of what is required (Ruggieri, 2010).

Therefore, decoding the environment is a required step; this can be done using materials and tools that can clearly define their function. Stories, series of actions, images, motor pathways shall be studied and targeted, the way deliverables and expectations shall be consistent with the skill to be developed. Inputs shall also be characterized by simple and accessible proposals. Gratification and positive reinforcement coming from these proposals will also enhance students' involvement. Everyone's participation, although with different characteristics for different roles, will facilitate the development of self-esteem. The trust, the appreciation felt by others for their quality of "being capable and autonomous" enhances the acquisition of further skills.

These are the general, basic principles on which the current teaching proposal is based, which aims at defining a methodological approach for the programming of educational interventions aimed at the development of functional skills for a better quality of life.

Several educational areas of interventions may be identified. In the current study, which is mainly related to the educational-motor framework, the areas of road behavior and space orientation are particularly suitable but, of course, there are other areas of intervention on which further proposals might be developed.

6. Discussion/Conclusion

“...Education that helps life is a problem affecting humanity...” (Maria Montessori, 1950). The *modus operandi*, the strategies to be implemented in the everyday life of school is a constant concern for any educator, in any sector. Based on the different problems of each child, every educator aims at reaching pre-set goals and tries to plan and implement suitable interventions. Therefore, it is crystal clear that the methodological principle underpinning suitable educational interventions is “educational co-responsibility”. The awareness that a total synergy between human and material resources is a key element for a better school integration leads to the need to involve the whole school staff. This involvement shall be based on a better knowledge of the different problems involved, and is required to create a new dialogue and a proactive cooperation among the different players involved with disabled students, including the other classmates, the teaching staff, the whole school, the family, the educators, the local training agency, the experts and any other subject involved outside of the school, starting from the Disability Working Groups (MIUR, 2009).

The achievement of autonomy by disabled people is a great challenge. The school system shares a huge responsibility with the families and local agencies to develop a life plan in which independence and autonomy play a key role in the creation of a better future for everyone (lanes, 2005).

The teaching guidelines and the methodological principles used in this study may help teachers to figure out new pathways or new projects which might adapt to specific needs, taking into account the different problems and the different social and cultural contexts.

References

- Carlini A., (2012), *Disabilità e bisogni educativi speciali nella scuola dell'autonomia*, Napoli: Tecnodid.
- Carraro A., Bertollo M., *Le scienze motorie e sportive nella scuola primaria*, Padova: Cleup.
- Contardi A., (2004) *Libertà possibile. Educazione all'autonomia dei ragazzi con ritardo mentale*, Roma: Carocci.
- Contardi A., (2004) *Verso l'autonomia, percorsi educativi per ragazzi con disabilità intellettiva*, Roma: Carocci.
- D'Alonzo L., (2008) *L'integrazione del disabile. Radici e prospettive educative*, Brescia: La scuola dell'istruzione dell'Università e della Ricerca.
- Gomez Paloma F., Sgambelluri R., (2012) *La disabilità tra didattica e sport*. Napoli: Edizioni Simone.
- lanes D., (2005) *Didattica speciale per l'integrazione*, Trento: Erickson.
- Linee guida per l'integrazione scolastica degli alunni con disabilità* (2009), Ministero
- Montessori M., (1950), *La scoperta del bambino*, Milano, Garzanti.
- Ruggieri A., Russo L., (2010), *Faccio io*, Trento: Erickson.
- Sibilio M., (2003) *Le abilità diverse*, Napoli: Ellissi.

UBIQUITOUS LEARNING DESCRIPTIVE AND INFERENCE STATISTICS

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Abstract

Ubiquitous learning (u-learning) enhances learning skills in some students. Personal computers, mobile devices, and the Internet can be used together to encourage and motivate learning wherever and whenever students want to learn. We have developed teaching and learning objects for Descriptive and Inferential Statistics for mobile devices using Android operating system. Several applications have been designed. With these applications students can: *i*) see a histogram, a frequencies polygon, or a bar chart, according to the type of random variable (quantitative or qualitative) that is being processed, *ii*) calculate summary measures like maximum and minimum values, quartiles, deciles, interquartile range, average, median, mode, standard deviation, and variance, *iii*) obtain the Pearson regression coefficient, r , the determination coefficient, r^2 , the linear regression equation, and the corresponding graph, *iv*) calculate Pearson's and Fisher's coefficients of asymmetry, and Fisher's coefficient of kurtosis, and *v*) calculate confidence intervals for both the population's average and proportion, based in either a large or a small data sample obtained from a normal, quasi-normal, or a non-normal population. This work shows the achievements of the Project Statistics-to-Go that we are developing at the Department of Mathematics at the University of Sonora (Mexico). Future work includes the design of different applications to complement the teaching and learning of statistical inference such as confidence intervals for estimating the difference between two means or between two proportions of two populations, confidence intervals for estimating the variance of a population, confidence intervals for estimating the quotient of two variances and hypothesis test.

Keywords: *U-learning, Teaching-Learning Objects, Statistics.*

1. Introduction

In the University of Sonora, all undergraduate students take a required course in introductory statistics. The course's objective is to teach students basic statistical tools and familiarize them with the statistical analysis using statistical software. These software tools run only on desktop computers or on laptops, which means that students must be either in the computer lab or carrying their laptops. Moreover, most of these students have not a personal computer, a laptop, or internet in their homes, and they have difficulty doing his/her homework and practices. However, almost all students have a cellular phone because it is much cheaper than a personal computer or a laptop. In order to give a solution to this serious situation, in September of 2012, we proposed a project named "Statistics-to-Go. Second stage" to the Department of Mathematics at Sonora's University with the purpose of producing tools to accomplish statistical calculations of Inferential Statistics using cellular phones or tablets equipped with Android operating system.

In the first stage of this project [1], we designed tools in order to: *i*) calculate all central (mean, median, mode, and percentiles), dispersion (variance, deviation standard, and variation coefficient), and form measures (asymmetry and kurtosis coefficients), *ii*) Draw circular diagrams, bars diagrams, histograms, frequencies

polygons, accumulative polygons, and dispersion diagrams, and *iii*) Calculate the equation of a linear regression model and determinate the correlation coefficients.

In the remainder of this paper we present the justification and motivation of our research, the definition of mobile learning and its main advantages over other types of learning, the details about Android operating system, and we mention the definition of confidence intervals for the population's mean and some ways to calculate it. Next, we show the results of the *Project Statistics-to-Go Second Stage*. Finally, we present our conclusions and future work.

2. Mobile Learning

Mobile learning (also called m-learning) is the acquisition of knowledge through a mobile computing technology like cellular phones and personal digital assistants. Mobile learning allows a person to learn anytime and anywhere. We believe that in the near future, this type of learning will be used on a daily basis by self-taught people.

The differences between m-learning and other types of learning can be studied from two perspectives: the technological and the educational experience. Regarding technology, mobile learning is distinguished by the use of portable equipment that allows the student to access learning objects anytime and anywhere. With regard to the educational experience, John Traxler [2] defines mobile learning using keywords. In this way, mobile learning is 'personal', 'spontaneous', 'opportunistic', 'informal', 'ubiquitous', 'private', 'context sensitive', 'segmented', and 'portable'. Traxler also remarks that some of these features may disappear as mobile technology progress, but properties such as informality, mobility, and context will remain. From the students' point of view, the main advantages of mobile learning are: 1) Elimination of time and space constraints. This means learning is available anytime almost anywhere and whatever. Therefore, downtime can be used for learning. 2) It allows the communication with peers and with the teacher without physical contact. 3) It allows receiving learning objects that depends on the location (that is, context sensitive learning). 4) It allows receiving instant feedback to homework and exams. 5) It allows receiving learning objects that employ pictures, video, and audio.

3. Android System

Android is an operating system designed primarily for mobile devices such as cellular phones and tablet computers. Initially developed by Android, Inc., which Google bought in 2005, Android was unveiled in 2007 along with the founding of the Open Handset Alliance, a consortium of hardware, software, and telecommunication companies devoted to advancing open standards for mobile devices. The first Android-powered phone was sold in October 2008 [3]. Android-based cellular phones lead the market. According to Tech-thoughts [4], Android has a share of almost 70% in the global smartphone market, while iPhone Operating System (iOS), made by Apple, accounts to about 14%. In fact, Android has the largest share in every developed country, except in the United States and Japan where iOS is the dominant mobile operating system [5, 6]. In the tablet world the story is similar, according to BGR [7] Android worldwide market share grew from 39.8% in 2011 to 42.7% in 2012, while iOS share diminished from 56.3% to 53.8%. Android has many advantages over other operating systems. Here we mention the more important and more congruent with the need of students with low economic resources. In order of importance the advantages are: *i*) it is an open source, integrated software platform. Companies can release updates and revisions which users can download on their own, *ii*) the Android Software Development Kit allows people to create their own applications, because the SDK includes a comprehensive set of development tools like debugger, libraries, handset emulator, sample code, documentation and tutorials, *iii*) Android uses the standardized

and open programming language Java. The emulator of the Android platform has a modern design and is easy to use, iv) the installation of whole environment to develop Android applications is possible on every operating system, and v) Android allows developers to design applications for users based on their preferences. This provides the ability for users to have unique experiences tailored specifically for them. This is possible as Android is highly customizable.

4. Confidence Intervals

In inferential statistic an important topic is the construction of confidence intervals [8]. A *confidence interval* gives an estimated range of values which is likely to include an unknown population parameter, the estimated range being calculated from a given set of sample data. The selection of a confidence level for an interval determines the probability that the confidence interval produced will contain the true parameter value. Common choices for the confidence level, “C” are 0.90, 0.95, and 0.99. These levels correspond to percentages of the area of the normal density curve. For example, a 0.95 confidence interval covers 95% of the normal curve. This means the probability of observing a value outside of this area is less than 0.05 (or 5%). Because the normal curve is symmetric, one half of the area is in the left tail of the curve, and one half of in the right tail of the curve. As shown in the Figure 1, for a confidence interval with level C, the area in each tail of the curve is equal to $\alpha = (1 - C) / 2$. For example, for a 0.95 confidence interval, the area in each tail is equal to $0.05/2$, which is equal to 0.025. In order to determine the two critical points alpha among two (left and right tail areas), we have using the standard normal distribution’s statistical tables [9]. In our system this is not necessary as this value is calculated.

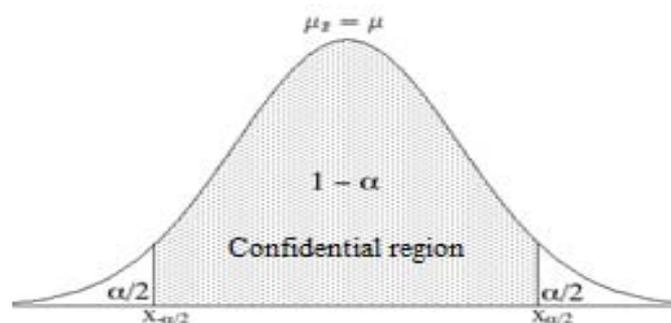
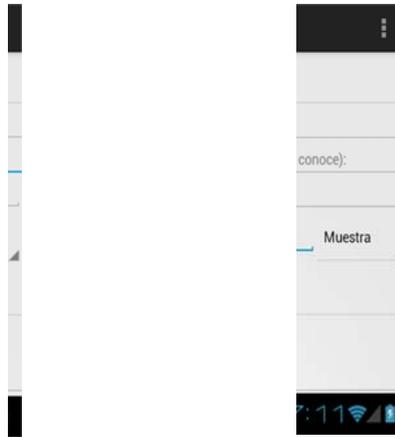


Figure1. Confidence interval for the population’s average

5. Results

In this second stage of our project, we have developed learning and teaching objects for Inferential Statistics. Each one of the objects calculates a confidence interval for a distinct situation. The first object computes confidence intervals for the population’s mean. The application uses one of the following formulas: $\bar{X} \pm z_{1-\alpha/2} \cdot \frac{\sigma}{\sqrt{n}}$ or $\bar{X} \pm z_{1-\alpha/2} \cdot \frac{S}{\sqrt{n}}$, depending if we know or not the value of the population’s standard deviation. In this formula \bar{X} is the sample mean, σ is the population’s standard deviation, S is the sample’s standard deviation, n is the size of the sample, and $z_{1-\alpha/2}$ is the critical value of the normal standardized distribution. Figure 2 shows the output for a sample of $n = 57$ data, with average 7.5, standard deviation of 2.1 and a confidence level of 95%. The second object compute confidence intervals for the population’s average when the size of the sample is less than 30 ($n < 30$), the population has normal distribution, and the standard deviation is unknown. For this case, the Student’s distribution is the preferred way for constructing the confidence

interval for the population's mean. In this case, the system uses the formula $\bar{X} \pm t_{n-1, 1-\alpha/2} \cdot \frac{S}{\sqrt{n}}$ in order to calculate it, where \bar{X} is the sample's mean, S is the sample's standard deviation, n is the size of the sample, $n - 1$ are the freedom degrees, and $t_{n-1, 1-\alpha/2}$ is the corresponding critical value for the confidence grade $(1 - \alpha/2)$ of the Student's distribution. Figure 3 shows the output for a sample of $n = 21$ data, with average of 7.5, standard deviation of 2.1 and confidence level of 95%. The third object compute confidence intervals for the population's average when the population has a non-normal distribution. The Chebyshev's theorem is used to build this confidence interval. The application uses one the following equations: $\bar{X} \pm k \cdot \frac{\sigma}{\sqrt{n}}$ or $\bar{X} \pm k \cdot \frac{S}{\sqrt{n}}$ to calculate the confidence interval depending if we know or not the value of population's standard deviation. In this formula \bar{X} is the sample average, σ is the population's standard deviation, S is sample's standard deviation, n is the size of the sample, and $k = \sqrt{1/\alpha}$, where α is the significance level. The Figure 4 shows the output for a sample of $n = 57$ data, with average of 7.5, standard deviation of 2.1 and confidence level of 95%. That is, $\alpha = 0.05$.



6. Conclusion

We have presented the main achievements obtained after completing the second stage of project *Statistics-to-Go*. We have designed learning objects that enhance the intuitive learning of statistical concepts, exclusively using a cellular phone and taking advantage of the ubiquity of personal technology for educational purposes,

specifically, the possibilities of mobile phones for teaching and learning statistics. These learning objects cover most of the syllabus of the introductory inferential statistics course offered in the first semester at the University of Sonora. We are doing use of cellular phones, taking advantage of the ubiquity offered by personal technology, for educational purposes, and exploiting the potential of cellular telephony to teach and to learn descriptive and inferential statistics, helping by the way those students who do not have possibilities for buying a computer or paying for Internet service.

In the third stage of this project, we will design learning and teaching objects in order to calculate confidence intervals for population's standard deviation, variance's quotients, proportions, and differences between means and/or proportions. Also we will test the efficacy of these objects on the students' mobile devices (cellular phones and tablets), and we will gather their opinion about the usability of our applications.

References

- [1] Tapia et al. Elaboration of Statistics Learning Objects for Mobile Devices. IJIM, may 2012
- [2] Traxler, J.: Defining mobile learning. In: International Conference Mobile Learning 2005. 261-266. Malta. 2005.
- [3] [http://en.wikipedia.org/wiki/Android_\(operating_system\)](http://en.wikipedia.org/wiki/Android_(operating_system)). Last accessed Jan 26, 2013.
- [4] <http://www.tech-thoughts.net/2012/12/smartphone-market-share-trends-by-country.html#.UQRSaL-mz2Y>. Last accessed may 7, 2013.
- [5] http://www.kantarworldpanel.com/dwl.php?sn=news_downloads&id=113. Last accessed May 7, 2013.
- [6] <http://www.kantarworldpanel.com/global/News/news-articles/Windows-sees-strong-European-growth>. Last accessed May 7, 2013.
- [7] <http://bgr.com/2012/12/05/tablet-market-share-2012/>. Last accessed may 7, 2013.
- [8] Triola Mario F. Elementary Statistics with Multimedia Study/Guide, 10th Edition. Addison-Wesley Longman. 2007.
- [9] Neave Henry. Statistics Tables: For Mathematicians, Engineers, Economists and the Behavioural and Management Sciences. College Audience. 2011.

DISTANCE EDUCATION: CONCEPTS AND PRACTICES IN STUDENT GRADING

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Abstract

Student grading in academic courses is always an issue for instructors. Fairness and equity combined with the reality of grade inflation are real issues that traditional classroom instructors confront every year. For Distance Education (DE) courses, the solution may be more complex based on the delivery system of the content as well as the focus on the written word. Thus the instructor is confronted with developing, finding, and choosing student assessment methods that overcome or at least ameliorate the situational issues that are inherent in grading student work during and at the end of a course that is delivered totally online. Some methods to address these issues will be presented.

Keywords: *Distance Learning, Student Grading, Teaching/Learning Methods, Pedagogy*

1. Introduction

According to the American Association of University Professors instructors have the right to evaluate and grade students (AAUP). In February of 2013 a judge took up the case of a graduate student who sued Lehigh University, USA, (without success), for being given a C+. (Laboni, 2013). While this case was in a traditional class, it serves to illustrate that assessing student work during may be controversial and even more so in DE courses. (See Anderson, 2012 & Yang, 2012) A university data base library search for information on grading displayed 10,000 “hits” for relevant documents. The college learning centers “hits” provide a wealth of advice for students, graduate assistants, and professors. For example, the Presbyterian College Writing Center cites Walvoord and Anderson (1998): “*What Purposes Do Grades Serve?*”

- as an evaluation of student work;
- as a means of communicating about a student’s performance;
- as a source of motivation to students for learning and improvement;
- as a means of organizing a lesson, a unit, or a semester.”

In examining the literature, the Walvoord and Anderson book is a good choice for those who are seeking a comprehensive view of effective grading. Specifically the authors suggest: *The primary goal of grading should be to encourage learning and student involvement in a course.* The UC Center for Teaching and Learning at Berkeley (n. d.) reminds the reader that grading is a process and not just used to ascertain a numerical score; it tells instructors they should be:

- Setting expectations
- Designing assignments and exams that promote course objectives
- Establishing standards and criteria for the assignments
- Calibrating the application of a grading standard for consistency and fairness
- Making decisions about effort and improvement
- Deciding which comments would be the most useful to guide student progress
- Returning assignments and communicating major helping points

A place to begin is a specific suggestion to establish a philosophy of grading or how to be effective in the teaching/learning process in grading in the realm of Distance Education. For example: *The Belief: Multiple Chances for a student to be successful in a variety of Postings, Readings, Assignments, Projects, and Test Assessments are essential in determining a fair and consistent method of determining a grade.* What this means is the DE instructor must find, develop, and install a host of ways the student can convey mastery of a subject. A course in which only a mid-term and a final exam are not the answer as most students have learned to “cram” for an exam and perhaps have mastered test taking but not a body of knowledge with application so that a grade may or may not be accurate. Thus grading is indeed a process that starts with the instructor thinking through the entire array of choices in designing a syllabus. For example should grading be holistic or analytic?

The contrast between holistic or analytic appraisal is a proper perspective for a debate. Sadler argues that the holistic approach can incorporate the “nuances of expert judgments” as well as “represent the complex ways in which criteria are actually used [if] properly done” (Sadler, 2009, p.177) Since the purpose here is not to test a theory but rather to provide specific suggestions to the instructor, what is proper will have to rest with others. This presentation could include the debate on the realities of grade inflation – does it really exist? Some authors say yes while others say no given the parameters of the studies. *The Economist* report is consistent with the principle set forth here: “A remarkable 43% of all grades at four-year universities are As, an increase of 28 percentage points since 1960. Grade point averages rose from about 2.52 in the 1950s to 3.11 in 2006.” (Higher Education, 2013) (See also Barrigo, 2008.)

2. Setting the Tone

Since feedback in Distance Education courses is largely through written communication, the first communication is critical. The instructor should write a candid letter to prospective students that can be incorporated into a syllabus; it may be more useful to actually send an e-mail letter to enrolled students even before the course officially begins. Such a letter can communicate expectations and set a tone that helps the students decide to pursue or not to pursue the course. Research studies report that DE students have a higher course drop rate than traditional students. Studies conclude that self-motivation and time management are central to this drop-out rate. If the instructor believes that grade inflation is real and that A is for excellence, a tone of standards can be conveyed to the students at the start of the course.

3. Syllabus

A college syllabus should include a section on how the instructor arrives at a grade. The formula should also be realistic. In a very recent case, a Professor at Johns Hopkins had a grading policy based on a grading curve in which a highest grade (in an exam) would count as 100 percent and all other students would receive a grade relative to the highest grade as in a curve. In December of 2012, all the students conspired successfully *not to take* the final examination and thus rather than a 0 based on the policy all students were given a 100 percent. (Budryk, 2013).

One advantage of a DE course that uses a template is that the instructor can provide the details of the entire course before it even begins. When students know the general work load, the due dates, and the weight or worth of each of them at the start of the course, they can plan their own schedules that can prevent many problems later within a course. A Philosophy of grading can make a difference to student behavior; are deadlines fixed or suggested; are points deducted for late submissions or is the focus on completing the work within the class schedule that remains flexible. Although the terminology for evaluation in a DE course may vary and be weighted differently, the general headings are Readings, Postings, Assignments, and Examinations.

4. Readings (including Power Point)

Reading assignments are not always a priority for classes that do not require weekly input from students. In DE courses, it is incumbent on the instructor to set the parameters as well as require regular if not weekly reading requirements. How does the instructor determine what reading, if any, has been done? Postings can require responding to both specific questions and general questions. General questions may require integration of the reading and application to problem solving including problems that may have multiple solutions. Analysis of case studies may require even more sophisticated reading and writing.

5. Postings

Postings are the most visible part of the course for all participants to read. Some instructors evaluate all Postings individually while others provide a grade for the totality of the effort. When the course design requires 75-100 Postings from each student and a total number of Postings for the course in the thousands, an individual score for each Posting is too time consuming.

The Syllabus can stress that the Posting Board is the center of the class replacing traditional instruction; it should be viewed as the place for listening and commenting from both the students and the instructor. Just as engagement in a traditional face-to-face class, the Posting Board is the venue in DE. When the DE course requires multiple Postings, the instructor can quickly obtain a grasp of the quality of thought and detail of the Posting contribution of each student assuming the class size is not excessive. Nevertheless the instructor must be clear to the student that this approach to assessment of the Posts is a subjective part of the grading process. Binti and Mohamed (20130) suggest a positive correlation with the amount of student participation and final course grades which is encouraging.

6. Quizzes and Exams

Quizzes can range from simple to complex. They can be a check on reading, a check on staying with the course schedule, and a way to encourage independent learning. Software can provide quizzes taken per the schedule of the student with a due date; it can correct answers and provide scores immediately as well as provide details on the rationale for the answer. The software can provide feedback to the instructor as to which questions appear to be the most difficult for the student which suggests that the question or the concept is not clear and in need of clarification or editing. See Foasberg (2012) for example, on details for using computers to enhance tutorials for self-paced instruction as well as Memmott and deVries (2010) using Google software for systems support. If course goals are to encourage group decision making and collaboration, a timed small group examination is one way to address the issue, particularly if complex essay questions and group participation are important to the instructor. Such an examination enables students to determine division of labor and division of expertise among students.

7. Assignments

The first graded assignment should come very early in the course, even in the first two weeks. Assignments are building blocks that should move from simple to complex. For example the first assignment may be one of entering a university online library and retrieving information from refereed journals within a given major followed by providing a précis of the material garnered. Particularly in technical courses, this skill is one that will be beneficial throughout life as well as to ensure the student understands the benefits of using a closed search system in contrast to one that is

open. Each subsequent assignment may build on the previous one starting with one page, growing to 2-3 pages and perhaps ending with an individual or group project. Viewing of lectures on Web sites, viewing of videos, and reading of case studies with supportive videos are examples of building blocks that are beneficial to providing a variety of types of assignments. For example five or six graded written assignments over the course of a semester along with Postings provide the instructor with an array of written words and thought processes that add to multiple inputs. For these to have the most benefit, Rubrics are useful as Walvoord and Anderson (1998) and many others have argued. *What are rubrics?* Rubrics are scales in which the criteria used for grading or assessment are spelled out. *Analytic Rubrics:* Separate scales for each trait, or learning outcome for each student work (e.g., separate scales for "Argument," "Organization," "Use of Evidence") *Holistic Rubrics:* A single scale for the assignment considered as a whole. (e.g., one scale describing the characteristics of an "A" assignment, a "B" assignment, or a "C" assignment)

7.1 Security and Honesty

While logins and passwords are a barrier to plagiarism and dishonesty, they are not foolproof. Students can figure out ways to overcome both online quizzes and written assignments. However, as proposed here, a variety of assessment tools as well as the weighing of the multiple inputs means that a student would have to work really hard to overcome the checks and balances that are inherent into multiple types of assessment. For example, Quizzes can be forced time completion, Postings may require weekly inputs and each one provides the instructor with a sense of the capability of each student. When a written Assignment is submitted that appears to be at a higher written level than forum work, it is not difficult for the instructor to check for originality and citations using extant software. (See Crippen, 2003, for a variety of suggestions on accountability.) For software see *Turnitin*, the leading academic plagiarism detector.

8. Summary

Kim (2008) posits that any grading scheme is best when an array of opportunities are presented and submitted by students. The suggestions presented earlier are not exclusive. The instructor must develop a course list related to the subject and personal design preferences using a variety of delivery methods. Sadler argues that the holistic approach can incorporate the "nuances of expert judgments" as well as "represent the complex ways in which criteria are actually used [if] properly done." (2009, p.177) Self-assessment is also a real test toward realism, an important learning experience for all students. Boyles (2011) submits that as colleges and universities develop new strategies of both curriculum and assessments, more training is needed for the instructors. This is consistent with Howell and his colleagues (2003) who make 32 recommendations with the *final one* addressing teaching and learning about the capabilities of technology to address the future of DE. As a final note and a challenge to those who are involved with research studies in the future Dahlgren and his colleagues suggest "the time has come to include the structure of grading systems more systematically." (2009, p. 194)

References

- AAUP (n.d.). Grading. Web. 20 March 2013. <www.aaup/issues/grading>
 Anderson, J. Q., Boyles, J. L., & Raine, L. (2012). The future impact of the internet on higher education. *Pew Internet & American Life Project*. Web. 15 March 2013 <<http://eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED534048>>

- Assessing a high-enrollment online course (2004). *Online Classroom*, June, 6-8. Web. 20 March 2013. <<http://www.csupomona.edu/~dolce/pdf/beattie.pdf>>
- Bender, D.M., Wood, B.J., & Vredevoogd, J.D. (2004). Teaching time: distance education versus classroom instruction. *AmJDE*, 18:2, 103-114.
- Binti, B., & Mohamed, V. K. (2013) Student participation and grade performance 20 March 2013. <<http://eli.elc.edu.sa/2013/sites/default/files/abstract/rp48.pdf>>
- Boyles, P.C. (2011). Maximizing learning using online student assessment. *Online Journal of Distance Learning Administration*, 14:3.
- Barriga, A.Q., Cooper, E.K., Gawelek, M.A., Butela, K., & Johnson, E. (2008). Dialogue and exchange of information. *College Teaching*, 56:4, 201-209.
- Burdryk, Z. (2013). Dangerous curves. *Inside Higher Ed*, Feb. 12. Web. 20 March 2013. <<http://www.insidehighered.com/news/2013/02/12/students-boycott-final-challenge-professors-grading-policy-and-get>>
- Chetwynd, F. & Dobbyn, C. (2011). Assessment, feedback and marking guides in distance education. *Open Learning* 26:1, 67-78.
- Crippen, K. J. (2003). Rethinking course assessment: creating accountability with web-based tools. *Journal of Science Education and Technology* 12:4, 431-438.
- Dahlgrens, L.O., Fejes, A., Abrandt-Dahlgren, M. & Trowalds, N. (2009). Grading systems, features of assessment and students' approaches to learning. *Teaching in Higher Education*, 14:2, 185-194.
- Foasberg, N. M. (2012). Taking instruction to the next level: creating evaluations to assess student learning online. *J of Electronic Res. Librarianship* 24: 4, 322-324.
- Higher education: Not what it used to be - American universities represent declining value for money to their students (2013). *The Economist*, Dec. 1. Chicago. March 2013. <<http://www.economist.com/news/united-states/21567373-american-universities-represent-declining-value-money-their-students-not-what-it>>
- Howell, S. L., Williams, P.B., & Lindsay, N.K. (2003). Thirty-two trends affecting distance education: an informed foundation for strategic planning. *Online Journal of Distance Learning Administration*, 6:3.
- Kim, N., Smith, M.J., & Maeng, K. (2008). Assessment in online distance education. *Online Journal of Distance Learning Administration*, 11:1, 2501-2508.
- Laboni, R. (February 14, 2013). Judge rules against Lehigh University. <<http://schoolsofthought.blogs.cnn.com/2013/02/14/judge-rules-against-raising-lehigh-university-grad-students-c-plus-grade/>>
- Memcott, S., & deVries, S. (2010). Tracking the elusive student: opportunities for connection and assessment. *Journal of Library Administration*, 50:7/8, 798-807.
- Sadler, D. R. (2009). Indeterminacy in the use of preset criteria for assessment and grading. *Assessment & Evaluation in Higher Education*, 34:2, 159-179.
- Sapp, D. A., & Simon, J. (2005). Comparing grades in online and face-to-face writing courses. *Computers and Composition*, 22:4, 471-489.
- Smith, G.G., Ferguson, D., & Caris, M. (2001). Online vs Face-to-Face. *T H E Journal* 28 : 9, 18-24.
- Smith, G. G., Passmore, D., & Faught, T. (2009). The challenges of online nursing education. *Internet and Higher Education*, 12, 98-103.
- Teaching Guide for Graduate Student Instructors, University of California, Berkeley. Web. 13 March 2013. <<http://gsi.berkeley.edu/teachingguide/grading/index.html>>
- Wu, Y. B., & Chen X. (2008). A tool for assessing student learning in computing sciences distance education classes. *Journal of STEM Education* 9:1-2, 5-13.
- Walvoord, B. E., & Anderson, V. J., (1998). *Effective Grading: A Tool for Learning and Assessment*. San Francisco, CA: Jossey-Bass. Web. 16 March 2013. <<http://cft.vanderbilt.edu/teaching-guides/assessment/grading-student-work/#purposes>>
- Yang, C-H. (2012). Fuzzy fusion for attending and responding assessment system of affective teaching goals in distance learning. *Expert Systems With Applications* 39:3, 2501-2508

INCREASING ENGAGEMENT AND ACHIEVEMENT: THE IMPORTANCE OF YOUNG PEOPLE'S VIEWS

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Abstract

Increasing the achievement of disadvantaged young people within schools is a matter of international concern. Despite the adoption of a wide range of strategies, results have been mixed, partly because the reasons for many young people's underachievement have not been identified. The research study investigated the experiences and aspirations of a group of girls living in an area of high social deprivation. Their interviews were analysed to identify factors affecting educational success and make recommendations for schools to use to increase achievement. The study identified the importance of using individual young people's experiences to tailor strategies for specific needs and maximized success.

Keywords: *Achievement, engagement, disadvantage, voice.*

1. Introduction

The underachievement of disadvantaged young people within schools is a matter of international concern (UNICEF 2007). Despite governments' attempts to address this underachievement with a range of strategies, success has been mixed (Cummings *et al*, 2012). This is partly due to a lack of clarity about the reasons for many young people's underachievement, despite significant research studies (Goodman and Greg, 2010) and also because strategies have not taken account of individual young people's experiences (C4EO, 2010; EHRC, 2009).

The U.K's inspectorate for schools, the Office for Standards in Education (Ofsted) and Department for Children, Families and Schools (DCFS) identified a link between young people's underachievement and their engagement with school (Ofsted, 2013; Callanan *et al*, 2009): where young people were disengaged, this negatively affected their aspirations and achievement by triggering a complex set of interacting factors. Ofsted also identified the effects of disadvantage in its report on '*Narrowing the Gap*' (2007), highlighting the inequalities in achievement and outcomes between young people of different backgrounds and heritages.

The research study is set within this context of 'narrowing the gap' and reducing disadvantage. A Local Education Authority had identified a school where girls were significantly underachieving, although their male peers were achieving well. This led to an investigation into the experiences and aspirations of these girls to identify barriers to their educational success and make recommendations to address disadvantages.

2. The context

Despite many developments within schools to increase young people's achievement and engagement with learning, some learners are still vulnerable to underachievement (Ofsted, 2007; National Audit Office, 2008). What constitutes 'vulnerability' may differ across schools but typically includes young people who are in care, disabled, from some minority ethnic backgrounds, young offenders and refugees (C4EO, 2010). In particular, a 'working class' background has been identified by the

Equality and Human Rights Commission (EHRC, 2009) to link with low achievement in schools, with girls from this group most vulnerable to underachievement, due to a greater fear of failure than their male peers. This vulnerability was compounded by stereotypical subject choices and career guidance that limited their options: many girls tailored their aspirations to avoid failure and meet family approval.

The inter-relationship between achievement and engagement can create a significant impact on aspirations. Callanan *et al's* national study (2009: 2) reported that, young peoples' experiences were complex, triggered by multiple factors that impacted upon one another and resulted 'in a downward spiral'. In particular, it identified features of girls' disengagement that affected achievement, describing the 'silent girls who mentally truant' – those who sit quietly in class, not contributing, but not causing any trouble. Disengagement can be exacerbated when young people feel marginalised. Messiou (2012: 30) argues that 'marginalisation is complex and can appear in many subtle forms within schools'. Despite this subtlety, young people quickly pick up messages from school experiences about their 'value', affecting their engagement.

Powerful social influences can also affect young people's aspirations, engagement and achievement. The UK's Centre for Longitudinal Studies (2010) identified an increasing impact of parents' social class on their children's achievement and the studies of Clark and Paechter (2006) and Jackson (2006) show young people succumbing to peer pressure to be 'cool' and striving for acceptance by hiding their academic success. Plummer's study (2000) of 'working class' girls' achievement linked different social factors. She found that although girls viewed educational success as an opportunity to escape from their home environment, they feared being seen as getting 'too big for their boots' (p.146) and losing friends and family. Girls often accepted a future set within their local community as inevitable, but took a defiant stance that sought social rather than academic esteem, rejecting their communities' stereotypical gender expectations, replacing those with swearing, smoking and early sexual activity. Such contextual influences played a significant part in the lives of the girls who took part in the research study. Peer relationships, family situations and school experiences had an impact on their aspirations and engagement with school, with self-esteem and feelings of being valued affecting their decision-making and plans for the future.

3. The Research Study

The aim of the research study was to explore girls' aspirations for their future within a context of one secondary school's concerns about their educational achievement. The school wanted to understand the barriers the girls experienced and provide support to increase achievement. In this school, the boys' achievement was comparable to national standards and the reasons for girls' underachievement were unclear. The catchment area of the school (referred to as SS1) was an ex-coalmining community, based in an area of high social deprivation. Another secondary school (referred to as SS2) provided a comparison of girls' experiences: it was sited in a more affluent area, but took some girls from the same geographical area, achieving excellent results with them. All of the girls available within the two schools were interviewed. This involved 36 girls in their final year of compulsory education. Unstructured interviews were carried out with 17 girls in SS1 and 19 in SS2, focusing on their post-school aspirations and the impact of their families, peers and school on these. The girls were interviewed in self-selected small groups, with each set of interviews taking approximately an hour. Following these, six of their teaching staff were interviewed about girl's aspirations in general and local community influences.

4. Findings

The interviews provided very different perspectives between the two schools. The SS1 girls described selecting exam subjects because they liked the teachers that

taught them, while the SS2 girls made their subject choices based on career aspirations. Planning for the future also differed significantly. The aspirations of the girls in SS1 were often not linked to their expected GCSE exam results. Five girls who were predicted to achieve 8-12 GCSEs were unsure of what to do when they left school: three were interested in going to university but were not clear about what they would study or how this led to a career and another was considering becoming a hairdresser because her mother had suggested it. Several girls who were expected to achieve few GCSEs also spoke about going to university. One girl was interested in veterinary science and had decided to study biology, chemistry, maths and IT 'A' levels. She reported that she had discussed this with her teachers and parents, but as she was not expected to pass these subjects at GCSE, it was unclear what guidance she had been given. Another had wanted to be a vet for a long time and needed Psychology 'A' level for the university course. Psychology was not available at her school and as she did not want to study anywhere else, her plans had now fallen apart. Most of the other girls had decided to look for jobs familiar to them because of family connections such as hairdressing, beauty therapy, childcare and tourism. Three girls described liking nothing about school other than being with their friends and had no idea about what they would do when they left. All the SS1 girls spoke of parental support, although this ranged from active encouragement to benign comments such as "Good idea" and "Go for it". Few had discussed their career plans with teachers.

The responses of the SS2 showed that they had a far more informed perspective of opportunities available to them, and having researched university requirements and attended career events were now intending to study for a wide range of careers in law, medicine, English, graphic design, midwifery and fashion. All were predicted to achieve good GCSE results and had taken relevant work experience and extra curricula activities to increase their CVs. Every girl described the support and guidance they had received from their parents and other 'family connections'.

Pressure was a topic that most of the SS2 girls discussed. Despite their appreciation of support from school and parents, they also felt that this was accompanied by intense pressure to succeed. One girl described this as, "Sometimes it's like you're just learning for exams. Isn't it just down to what jobs parents do? They don't expect us to have a life", whilst others talked about their initial shock of the high expectations experienced when first joining the school, but had now "bought into it". A few girls were acutely aware that their teachers viewed them as less successful and treated them differently, stating, "If teachers don't believe in you it gives you no hope at all" and "Teachers are more interested in our grades than what we do with them".

When asked about their greatest 'hopes and fears' for the future, the responses differed between the two schools. Most SS1 girls hoped for a "happy family life" with a "nice house and children": only four girls mentioning success in work. Their greatest fears involved being in debt, being alone and 'failing'. One girl described this as "Ending up living in a council house, no money, no kids and parents aren't pleased with what I have become". In contrast, the SS2 girls linked happiness with having a successful career and a great social life that included international travel and financial independence. One girl described this as, "I want to be happy, financially and emotionally, waking up each morning and loving my life". They also expressed concerns about failure: "I fear that I won't succeed in life and I will never get the qualifications I need and that I will never live my life to its full potential" and "I fear being unsuccessful because I would live life always regretting I could have done more".

The teachers all described the strong influences of family and the community on girls' aspirations. Those at SS1 stated that many girls did not go on to university because their families saw this as expensive and were concerned about debt: some parents were reported as telling their daughters that "our sort don't go to university". A few girls did go to university, but usually studied locally and lived with their families, taking on part-time employment. This prevented their immersion into university life and created tension between the two different lifestyles. Other girls sought local

employment in shop work, hairdressing and manufacturing or were unemployed and then quickly become pregnant because the teachers felt, “*aspiration was taken away from them*”. These teachers also spoke about changes after local coal mines were closed, with increased unemployment and family breakdown affecting the traditional gender role expectations within families. There had been a recent growth in service industries in the area which had provided new employment opportunities for women, who were increasingly the main source of family income. Despite these changes, the teachers still felt that the school was functioning within a male dominated community with parents having higher aspirations for sons than daughters. Many girls were strongly influenced by their mothers, who had generally left school at sixteen and not held professional jobs. This, the teachers suggested, resulted in girls not continuing in further education despite good GCSE results, and “*lacking the hunger to do well*”. The insularity of the community also had an impact on employment opportunities, people rarely left the village even to shop in a local small town, so this restricted where many would look for work or take further study. The school had tried to support the girls through mentoring and career guidance, but the success of this was unclear as it had not been evaluated or linked with subsequent destination data.

The teachers at SS2 described their school as highly academic with parents who shared these aspirations for their daughters. Teachers described most girls as expecting to “*work, have decent holidays and decent cars*”. The school had developed very successful academic guidance skills in supporting girls’ applications to universities throughout the country. The school provided vocational courses to widen students’ skills, although these were usually seen as a supplement to academic study rather than replacing it. The school had analysed a range of school data according to gender and this had resulted in targeted strategies for raising girls’ aspirations.

5. Discussion

The girls had very different perspectives and school experiences. Many of the SS1 girls seemed unprepared for the future, despite the imminence of examinations and leaving school. Their aspirations often did not match expected exam results and many were uncertain as to how they could achieve their plans. These had rarely been discussed with teachers and most ‘career’ guidance appeared to be limited to advice from family and friends. Confidence was an issue, with important decisions based on liking teachers and staying within familiar surroundings. Although their parents were supportive, most lacked the knowledge to translate this into action to support their daughters. In contrast, the girls from SS2 were highly motivated towards a career and knew how to achieve this. They benefited from strong parental support that provided authoritative academic guidance, which led to an enthusiasm for new opportunities.

The school contexts had an impact upon the girls’ aspirations in both schools and this appeared to increase as the girls became older. Staff from SS1 attributed the male dominated environment and the insularity of the local community as highly significant in restricting girls’ aspirations. SS2’s success was based on its ethos of high achievement, detailed analysis of pupil progress and skilled academic guidance. This did however create pressures for the girls, especially those who felt their teachers viewed them as ‘failures’. The use of school data on pupil achievement and destinations was important. Both schools had used different strategies to support girls’ aspirations but only SS2 had analysed the results of these to focus action.

6. Conclusions

Although the study focused on a specific group of girls, the findings have relevance for any school attempting to increase the achievement of disadvantaged pupils. The study identified two key considerations for schools. Firstly, the girls had much to say about their school experiences and future plans. They provided extensive

information to the researchers, but had not shared this with their teachers: a considerable number were seen as participating in school life but were not actually engaging in school guidance processes. Teachers would be able to support all young people's aspirations and achievement in a far more targeted and meaningful way if more was understood about their 'world' and the barriers that they face. Schools should consider how time to do this could be accommodated and which staff would be the most effective to involve. This knowledge could then fill the 'gaps' of what teachers already know from scrutinising school data, individualising strategies and challenging assumptions about lack of ambition. Secondly, it is important to build pupils' resilience skills as well as their academic skills. If this is linked to teachers working in partnership with parents, this can provide support to face new challenges with confidence. Schools may also need to work closely with parents to understand their concerns and the barriers families face. Without taking account of these, initiatives to increase outcomes for vulnerable young people, however well intentioned, may not succeed and result in increased disillusionment and disengagement.

Aspirations are important. These can be inspirational and lead to increased achievement, but they can also be a source of demotivation when dreams seem unobtainable. When young people are motivated, they engage more and optimise opportunities for success. If schools and their teachers take the time to understand what young people really want for their lives and what influences affect them, they can be pivotal in 'closing the gap' and achieving dreams.

References

- Callanan, M., Kinsella, R., Graham, J., Turczuk, O. and Finch, J. (2009). *Pupils with declining attainment in Key Stages 3&4*. London: Department for Children, Schools and Families
- Centre for Excellence and Outcomes in Children and Young People's Services (C4EO) (2010). *Narrowing the gap in educational achievement and improving emotional resilience for children and young people with additional needs*, London: C4EO
- Centre for Longitudinal Studies (CLS) (2010). *National Child Development Study*. London: Institute of Education
- Clark, S. and Paechter, C. (2006). *'What she said': how girls mobilize power and knowledge in classrooms and playgrounds*. London: ESRC Seminar 2
- Cummings, C., Laing, K., Law, J., McLaughlin, J., Papps, I., Todd, J. and Woolner, P. (2012). *Can Changing Aspirations and Attitudes Impact on Educational Attainment? A review of interventions*. York: Joseph Rowntree Foundation
- Equality and Human Rights Commission (2009). *Staying On*. London: Equality and Human Rights Commission
- Goodman, A and Gregg, P. (eds) (2010). *The importance of attitudes and behaviour for poorer children's educational attainment*. York: Joseph Rowntree Foundation
- Jackson, C. (2006). *Lads and Ladettes in School. Gender and a fear of failure*. Maidenhead: OU Press
- Messiou, K. (2012). *Confronting Marginalisation in Education. A framework for promoting inclusion*. London: Routledge
- National Audit Office (2008). *Widening Participation in Higher Education*. Statement (25/06/08)
- Ofsted (2007). *'Narrowing the Gap: the inspection of services'*. London: Ofsted
- Ofsted (2013). *The Pupil Premium. How schools are spending the funding to maximise achievement*. Manchester: Ofsted
- Plummer, G. (2000). *Failing Working-class Girls*. Stoke-on-Trent: Trentham
- UNICEF (2007). *Child poverty in perspective: an overview of child well-being in rich countries*. Florence: UNICEF

VIOLENCE AND INDISCIPLINE: A BIDIRECTIONAL AND BIOECOLOGICAL BRONFRENBRENNER'S PERSPECTIVE FOR THINKING ABOUT HUMAN DEVELOPMENT

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Abstract

This article aims at presenting the results of the studies that have been developed by a continuing education program for teachers by the Department of Education of the State of Paraná (SEED/PR) – Brazil. It refers to the violence within and outside school as well as its impact on education. The methodology used for this teaching intervention was an action research approach as a way to encourage the engaged involvement of various professionals to understand the importance of learning about learner & parent's life history. About ten teachers working in regular schools, three teachers from the APAE the Association of Parents and Friends of Challenged Children, who work in the care of students with PDD - Pervasive Development Disorders, three assistant managers, four support officers, two principals and some parents have collaborated with the Study Group, whose meetings were held in a public school located in the city of Colombo/PR, in a Curitiba Metropolitan area, which has been considered one of the most violent cities of this State. The stakeholders have elaborated pedagogical materials for application inside and outside the classroom, teaching extra classes, parents' meetings and other events. It has been focused on the sixth and seventh grades of elementary school, and it has comprised about two hundred children and adolescents aged ten, twelve or older. Some vulnerable children who are at risk conditions require the engagement of everyone in effective actions. The activities purposed aim at promoting the understanding from parents, mothers as well as the children's history, the way their subjectivities have been built according to the multiple determinants of the environment. Indeed, the approach is based on some ideas proposed by Bronfenbrenner about the importance of thinking the human development by focusing the analysis not only on children or students, but also on the developmental processes of adults, parents, teachers, and other people with whom the interactions occur into human relationships. Besides that, they will probably be representing a risk for society once the background from where they come and the various microsystems that compose their bioecological contexts can induce most of them to drop out of school too early due to many reasons. In order to understand the phenomenon and propose possible practical actions, some proposals will be presented to broaden the view of the educational field and show some strategies that may bring about efficient methods to promote the reduction of violence and allow reframe the glance at formal education as a possibility of bio-psycho-socio-cultural transformation.

Keywords: *Education, Disruptive behavior, Violence, Bioecological perspective.*

1. Introduction

The intrapersonal and interpersonal conflict is inherent in human relations in interpersonal everyday, whether established between two people, between groups consisting of multiple subjectivities, by individuals with their idiosyncrasies whose peculiarities can be ethnic, racial, religious, sexual, economic, political, social and cultural. The school must be considered as a privileged space for promotion of culture,

as responsible to develop the art of cultivating beliefs, habits, moral and ethical values considered legitimate and valid by the ancestors, the people who have more experience of life and the education professionals, since these sets principles are aimed at the preservation of life forms which are bio-ecologically healthy for the individual and collective, and focused on building a culture for justice, peace and respect for human rights (Milani, 2002). Due to the heterogeneous concentration of people from different backgrounds, the school reflects into a more evident way, attitudes of intolerance and disrespect for diversity, generated by the misunderstanding of polidependency of the phenomena's interwoven in the development of the human person, the lack of self-knowledge and knowledge about how subjectivities have been built from the perspective of multiple dimensions such as affective, emotional, cognitive, ethical, moral and biological. The bioecological paradigm of human development proposed by Urie Bronfenbrenner (1977, 1979/1996), brings great contributions for understanding the influence of interaction between people, and how these interactions contribute to form a dyad ... a triad ... tetrads, and so forth. Draws attention to the fact that there are few studies whose focus stands on the development of parents, teachers, adults interacting with children, adolescents and their peers. The author proposes a deep reflection on the ecological transitions that occur in the person's interactions with the contexts in a certain period of your life and the lives of others involved in the act and interactive environment where relationships are inter-affected bi-directionally. In its proposal about the Ecology of Human Development (1979), Bronfenbrenner shows the dynamics of relations between the developing person, the developmental process in which are interwoven many factors that may be favorable or not, the immediate context and the impact of *micro*, *meso*, *exo*, *macro* and *cronosystem*. The latter came to be considered more thoroughly later when posting "Bioecology Human Development, which brings more forceful issues concerning on temporal juncture. *Microsystem* defines as "the complex relations between the developing person and the immediate environment in which it is contained" (Bronfenbrenner, 1977, p. 515). Thus, people construct a semiotic representation of the phenomena of human existence from experience where the interactions with the physical and social nature. The considerations for these study proposals emerge from the need to think about the reasons why so many disruptive behaviors reinforce indiscipline and they are so disruptive for the educational environment, and how they have caused numerous concerns from educators. The discussions on the subject lead to realize that conflict situations can be considered as a possible intervention formative and transformative, when actors engage and joint to build mediation practices that are effectively democratic, in the sense that those involved in the educational process understand the importance of developing the habit of hearing the anguished voices, not silence and smother them. In this proposal, the dissonances and conflicts of ideas generating the conflict can earn a positive character. Indeed, it helps to widen the debate about understanding the world. One has to consider the multi conditionings in the processes that lead individuals to have representations as diverse in terms of values and ideological positions grounded on value judgments, one-dimensional perspective, fragmented and dogmatic, while exclusionary and discriminatory attitudes reveal the tensile strength paradigms and understanding of otherness.

2. Method

In order to get near the community strategies to minimize the occurrence of violence, be it physical, psychological, verbal, gestural, symbolic, the Study Group came with the purpose of drawing up a chronological record map to know the life story of the students and the nearest relative with whom they mutually have been building a dyad. The participants considered very important the knowledge about the student's background and experience they have been living in the various Microsystems by

which children pass as well as the impact of Macro system. All these dimensions contribute to think on sustainable interventions that may occur effectively, aiming at the transformation of the lives of children and adolescents at the individual and collective plan. For the implementation of this project, a Study Group was organized. All the participants received a certificate from the Secretariat of Education in Paraná (SEED / PR), expressing 40 hours of studies and researches, which counts for progression in the career plan. The study gathered ten teachers working in primary and secondary school, three teachers working with exceptional children in an institution in Colombo / PR, three administrative assistants who assist the teaching staff and constantly interact with students, four support officers whose duties are articulated the training of students, because they act as "provincials", two auxiliary directors, two educators and approximately 100 students in the classes of sixth and seventh years of the State College, located in the city of Colombo / PR. We developed a table entitled "Telling my story - Timeline" in which the student received two copies, one for him (a) and one for the closest person who lived with the family, so they were oriented to write some historical events which has marked their lives, the ones that they consider extremely important over the past twelve years. In each column there was an indication of the year and about 10 lines for them to write their recorded narratives.

3. Results and Discussion

From the analysis of the narratives, one of the reports that it is worth mentioning refers to the case of a student in the 6th grade. In the column concerning the most notable achievements in 1998, she writes: *In 1981 I was 3 years old and lived with my father and stepmother, but because my true mother had died by that year. In 2002 my father died and it was the worst thing for me and I had to live with whom I would not want to live with. In 2003 I lived with my sister and time passes and I suffered a lot because she used to take drugs. In 2008 my sister hit me and left me all injured and I moved in to live with my stepmother. (...) In 2009 I met Marcelo, the Brenner and Monique and I like them a lot and many things happened in my life.* (VHS)

The narrative of the life history of V. H. S. shows that she stayed for six consecutive years developing herself at an extremely aversive environment whose contingencies were against a healthy and biologically purpose for human development. She had to live under the responsibility of an addicted sister, who also needed effective actions by people around, who could direct them to look for helping at some scaffolding institutions. It can be seen in the narrative itself that occurred a clearly omission by all the people with whom they interacted, because neither relatives, nor neighbors or teachers positioned themselves in order to hold their case. V.H.S.'s addicted sister visibly needed the involvement of engaged and helpful people who had the knowledge about where, how and how effectively interfere to help them. The omission and silence are noticeable in the attitude of people who see situations like this and cannot be able to perceive small interceptive actions that can support and contribute to human whose development always goes building interlaced through interactions. Assisting anyone with problems is the duty of all everyone, including neighbors, teachers, relatives and anyone in front of their similar situations of vulnerability, suffering from all forms of violence. The absence of discussion and dialogue as a peaceful solution of the conflict is a symptom which may create more violence, especially into relationships where there are attitudes of authoritarianism, when ones wants to superimpose their vision as if it were the only true on the others. The anguish of the people involved tends to intensify itself and all the anxiety may be risen up to the point that it might become into a tragedy, which could be prevented if the mediation strategies were appropriate to appease the conflict. In addition to that, when people act with authoritarian managerial positions, anxieties and disagreements can be temporarily suppressed due to some power relations, but it is likely that some of the people that live the aversive situation is vulnerable to get psychosomatic symptoms, as they are victims of symbolic violence,

and this may affect themselves physically and psychologically. As a consequence, some of them fail at their professional and academic lives. At schools, some students who suffer from symbolic violence can dropout and some discriminating attitudes increases the rates of different health problems. When a repressed anger comes to be externally expressed, it usually occurs in the worst possible way, through contestations of authority that can reflect on the several ways of vandalism, graffiti, verbal and physical aggression to peers and educators. Overcoming dichotomous segregating the holder of knowledge on one side and the other student is essential for the establishment of a dialogical relationship in which both share the interest in assimilating and reframe the knowable object. Reciprocity in inter-semiotic formative role in the production of meaning implies dialogue, indispensable to the "know ability of knowing subjects in the act of formation, an epistemological situation." (Freire, 1983:78). The hierarchy and imposition of force by means of vertically integrated power relations, as well as the lack of education that question all the overlapping phenomena and position the subjects as able to make inferences, produce and reflect opinions, all of those evasive behavior may be factors that intensify the symbolic violence (Bourdieu, 1997) and its repercussion. This analysis is confirmed in various actions that constitute the recurring bullying increasingly frequent in and out of schools. Due to the lack of tools to confront the various manifestations of violence (Milani, 2002) it is common among many educators' misconceptions, including the criminalization of indiscipline, when they resort to other professionals working into different Microsystems, for instance, the security area, in order to solve disciplinary matters that could have been resolved by the pedagogical stakeholders with the support of the family. Assineli-Luz (2011) in her concerning about bullying warn about the complexity of the matter, "which occurs not only in school, involves many factors and should not be read linearly," though the term seems to be new, the 'bully' the individual "aggressive, provocative and troublemaker have been always existed." She also draws attention to the importance of considering the seriousness of the actions of bullying. "In Paraná, some school workers often ask a help for the School Community Patrol Battalion (BPEC), which was created to provide the school communities with the School Community Patrol Program (SGP) and Educational Program of Resistance to Drugs and Violence (Proerd). According to a head school assistant who had attended the Study Group, in a lecture delivered by police officers working in patrol, is the applicant a warning to education professionals seek to resolve acts of indiscipline in educational and not as infractions. The noticeable symbolic violence (Bourdieu, 2009) present in the cultural signs and symbols that occurs within schools is not perceived as such. Besides that, it acquires a status of legitimacy from the tacit acknowledgment of who has authority, prevents the emancipation and violates human rights. It must not be understood as something natural and not individually, but as a reflection of structural violence inherent in the capitalist mode of production and that tends not infrequently to criminalize poverty as generating violence and consequently terming the youth and adolescents, especially the ones who live suburbs as dangerous classes, (Bode, 2006), thus giving them a more repressive, especially in police approaches. Some educators also end up having a more repressive and disciplining youth. Such attitudes show a need to reframe the educational system of education, enhancing public policies aimed at continuing education, clearly demonstrated the lack of knowledge of the laws and principles of education. Nelson Mandela has already warned that "No one has been born hating another person by the color of their skin, by origin or by their religion. To hate, people need to learn, and if they can learn to hate, they can be taught to love!"

4. Some Final Thoughts

In order to protect and taking action is a fundamental constant articulation between schools with communities, the Guardianship Councils, the Public Prosecutor, the Public Ministry, Departments of Children and Youth and all the institutions that are

part of the Integral Protection Network Children and Adolescents. At school, emerges the need to work the life history of these children to offer psychosocial interventions, seeking awareness of everyone in the building a different society. Finally, the idea is that from the moment in which the discriminatory phenomena cease to be silenced and come to be discussed in collective attitudes of criminalization of indiscipline that end up being re-signified by educators in schools and repressive practices, exclusionary and punitive win a new perspective toward a broader understanding of the economic system, political, social and cultural, as relevant and macro structures of the constitution of the subject. Because of this, should be considered when thinking about the curriculum to be implemented in practice teaching in an effective, productive and meaningful way to contribute for education. In proposing future prospects for the bioecological model, proposes Bronfrenbrenner planning "public policies and effective social programs that can counteract the disruptive influences emerging development." (Id, p. 51) For excellence, the school, the family and society have a moral and ethical responsibility to get together and make everyone to feel self-efficient and empowered for interception actions that will transform a culture of violence into a culture devoted to peace between human beings.

References

- ASINELLI-LUZ, Araci apud D'Alama, Luna. Psicóloga da UFSCar propõe material contra o bullying para o MEC. G1 Educação. 12/07/2011 07h16 Atualizado em 13/07/2011 Disponível em: <http://g1.globo.com/educacao/noticia/2011/07/psicologa-propoe-cartilha-contrabullying-para-o-mec.html> (Acesso em 21/03/2013)
- BOURDIEU, P. (dir.). A Miséria do mundo. Petrópolis-RJ: Vozes, 1997.
- BOURDIEU, Pierre. A Reprodução: elementos para uma teoria do sistema de ensino. Tradução: BAIRÃO, Reynaldo. 2. ed. Petrópolis: Vozes, 2009.
- BRONFRENBRENNER, apud LERNER, Richard M., in Bioecologia do Desenvolvimento Humano: tornando os seres humanos mais humanos; tradução: André de Carvalho-Barreto; revisão técnica: Silvia H. Koller. – Porto Alegre: Atmed, 2011. 310 p.: II; 23 cm.
- MORAES, Pedro Rodolfo Bodê. Juventude, Medo e Violência. Disponível em: http://www.ipardes.gov.br/pdf/cursos_eventos/governanca_2006/gover_2006_01_juventude_medo_pedro_bode.pdf (Acesso em 21/03/2013)
- FREIRE, Paulo. Pedagogia do oprimido. 12ª edição. Rio de Janeiro: Paz e Terra, 1983.
- KOLLER, S. H. (org). Ecologia do desenvolvimento humano, pesquisa e intervenção no Brasil. São Paulo: Casa do Psicólogo, 2004.
- MILANI, F. "Tá combinado?". PEA Gráfica e Editora. Salvador/BA, 2003
- SEED/PR. Programas e Projetos - Patrulha Escolar. Disponível em: <http://www.gestaoescolar.diaadia.pr.gov.br/modules/conteudo/conteudo.php?conteudo=73> (Acesso em 20 de março de 2013)

TRAINING TO DECISION MAKING IN THE CONDITIONS OF UNCERTAINTY WITH BUSINESS GAMES

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Abstract

Thanks to developing technologies society has changed. Most of these changes connect with increasing information volume. Person who makes decision needs to take into account huge information flow. As a rule it is not possible according to human being opportunities. We can add that enormous information field creates uncertainty conditions for person who makes decision. That's why it is necessary to use special technologies for it and such technologies are business games.

Keywords: *Business games, social system, interdisciplinary approaches, computer modeling, mathematical modeling, risk management, forecasting, strategic planning, developing systems, order parameters.*

1. Introduction

One of the most impotent problems of modern society is an irrepressible and uncontrolled growth of information and knowledge dimension. It characterizes on one hand civilization itself and on the other hand every individual sphere of knowledge. In this case (when we have to process too much information) the necessary information and knowledge volume for effective action can be neither obtained, understood no used. So we need new technologies for receiving information and definite order parameters.

Primary we want to discuss that the social processes are changing in a modern society with the new scales of social interaction are becoming more and more common in a century of globalization. With the increasing number of people being involved in and affected by the new forms of social interaction, the changing social processed demand especial attention and require a greater understanding. In a modern society social epidemics spread more and more widely. They can be considered as quintessence of a social problematic. To manage of epidemic process is difficult but more difficult to teach does it.

2. Tools

There are tools such as research in connection with educational policy documents, results of mathematical modeling of social processes, and mathematical modeling of epidemic situation. We use multiagent model to represent epidemic situation.

The discussion is constructed on the basis of the implementation of this approach for business games.

3. Resources

This investigation was undertaken with our colleagues under the auspices of the Russian Presidential Academy of National Economy and Public Administration (Department of Anticrisis governance) in cooperation with the President of the Russian Federation and on the basis of Keldysh Institute of Applied Mathematics the Russian Academy of Sciences (Department of modeling of nonlinear processes).

4. Background

Study and modeling of the social processes for designee business games was conducted over last 10 years. Using methodology developed for the newly created areas of science of synergy (created by Hermann Haken) [1] with interdisciplinary approaches has been effective with respect to modeling of social processes. The mathematical and methodological basis for the project is the theory of self-organization, or synergy [2]

To make education more effective in preparing future specialists for society, we need to find and adopt new technologies for education. A new approach to education in this respect has been developed in Russian Academy of National Economy and Public Administration under the President of the Russian Federation in Moscow. We explore and analyze the situation in the social arena in accordance with a set of factors in the social environment of increasing complexity. More specifically, we use self-organization in educational process in order to select some parameters of how to order each member of the set.

It allows us to define crucial steps the social process should include. As a result we can create a model of the process, see tendencies of results of different decisions and attain good results.

A common understanding of the situation has to be based on specific models and evaluations obtain in monitoring of social systems. Scientists and experts play a significant role here. So we have an example of research that could delineate the contours of the future, and we do it every game with our students.

We can point to example of social modeling of research underway at the Institute of Applied Mathematics M.V. Keldysh of the Russian Academy of Sciences under the leadership of the Rector of Moscow State University named after M.V. Lomonosov, Academician V. Sadovnichy. [3]

Our experience is related also to systems analysis on the macro-level base of the state, system trends and problems in social dynamics. These studies were carried out by the PROON Programs in Russia and by the International Bank for Reconstruction and Development (IBRD or World Bank). One of our results is the system of mathematical models which describes behavior social system during epidemic processes in Russia.

5. General Aims

The aim of this paper is to analyze new approaches in education connected with the interdisciplinary context and self-organization in the business games for making decisions.

6. Specific Aims

We explore some mathematical modeling of social reality and social dynamic. Since humanity is currently undergoing a significant turning point (point of change in historical processes), changing the educational process becomes a subject of investigation. We want to find ways to describe features of the new education and how it is linked with a changed society. We suppose it is connected with the increasing

complexity of the social factors. That is why a multidisciplinary approach is necessary. We suggest some mathematical modeling of human beings connect with destructive social processes. We consider innovations in methods for designing this process. We will show using self-organization in educational processes, in order to explore and analyze the situation in the process of business game. We try to formulate some ideas and proposals for changing educational approaches in the hope that this will be of use with regard to future needs.

7. Special aspects of the experiment

This situation arises particularly frequently in the process of concurrent optimization, using a number of criteria, or while searching for a compromise. In this case simulations or team-based computer games are helpful. They are indispensable in the process of designing complex systems and/or reaching critical management decisions. [4]

This was first understood in the design of military equipment. A modern fighter plane entails a rational choice of over 1500 separate decisions. This is beyond the capabilities of one person, but is possible for a trained team.

Here a simulation makes it possible to demonstrate to the team what happens as a consequence of the decisions it makes. What will the performance of the “virtual fighter plane” they design be in a battle with other machines [5] Later this experience was expanded to training for decision-making.

During the training of government officials it is possible to use different models and organize the work in a situational or cognitive center. This normally enables all the participants in the simulation, including the teacher or facilitator, to gain a better understanding of the problem situation and try on different roles in order to better understand one’s true objectives, capabilities or limitations. It is much easier to make mistakes and correct them while ruling virtual cities and countries than make errors in the actual running of the country.

8. Main point

A new innovation’s technologies let us create special educational environment and complexes for teaching of management of social epidemics processes throw business games and mathematical modeling of epidemics. We are designing business games for decisions making in the conditions of uncertainty in cognitive center.

In Russian Academy of National Economy and Public Administration we design a row of business games devoting to management of social-epidemic process such as demography, alcoholism, drug addiction and Aids epidemic thanks to revealing of latent factors of influence on epidemic process. All latent factors are connected with social behavior.

In the process of business games students fined that the preventive measures which aim to lessen the spread of the disease, should be focused on a formation of a variety of social strategies and conditions for at risk groups and a number of administrative measures. A system approach is needed which involves all stakeholders interested in the solving and monitoring of the spread of the epidemic in the interests of the public health and safety. But at present we can conclude that we see a continuation of the not only the spread of HIV/AIDS in Russia, but rather the growth of the social epidemic, simply because the disease is connected with a wider array of complex of social processes. Among these are the increase in the number of drug addicts, alcohol dependency, the increase of the number of people involved in prostitution and the decline in living standards to mention a few. All these require that the urgent social measures are taken to prevent further spread of the epidemic.

9. Strong points

The idea of group work in the process of education can be very productive. We can see this with the implementation of new educational approaches and technologies, such as brainstorming and business games. The organization of the learning process by team competition, in which students solve a common problem, can significantly increase the general effectiveness of the process. Friedrich Hayek, the Nobel Prize-winning economist, wrote: ""The curious task of economics is to demonstrate to men how little they really know about what they imagine they can design." [6] The current situation demands skill in teamwork from our children, our youth, scientists, engineers and managers. They must learn to organize common efforts for solving general problems. Countries and civilizations such as China, Singapore, South Korea and India that are able to study and learn these techniques have become opposed to individualistic West. They have achieved remarkable success in a number of areas of high technology. Perhaps it is a paradox, but we need to prepare ensembles, groups, brigades, teams and crews with creative members complementing each other.

10. Solutions and Recommendations

As the social situation in the world has changed, we have to modify traditions as well. This "fast" world needs new educational approaches, the new education and science must be different from that which came before. We propose changing narrow education into interdisciplinary education. A lot of problems and risks of contemporary civilization enter the interdisciplinary field, and demand corresponding specialists for solving.

We recommend successfully solving new human problems in the new world by applying new educational technologies with applying mathematical modeling and cognitive centers. What form of education will be necessary in the future? Now we have a new approach in this direction. Using self-organization in the educational process it is possible to select some order parameters in order of the business games and create a new educational and social technology.

11. Direction for Future Research

We need to change our educational methodologies in such a way as to connect with the needs of the future. The basis for this new education could be the interdisciplinary context and the self-organizational approach. [7] Despite the increase in the quantity of information, we can use the way of self-organization — Plato's "king's method" of education — and use the laws of the existence of complex social systems to achieve the best educational results.

The proponents of this new approach are posing the comprehensive goal of discussing at a systemic level a broad spectrum of issues related to long-term use. A new vision of goals is needed in order to find an acceptable solution, taking into account the new situation in the world. Focus on interdisciplinary processes in modern education allows us to see new goals and tasks for the educational process. Conventionally, new education could be called multi-disciplinary or synergistic.

12. Conclusion

The paper concludes that the new aim for education is to prepare staff for solving new problems facing mankind in the twenty-first century. These problems have an interdisciplinary character, and so education will have to develop an interdisciplinary character.

We conclude when students are studying social behavior they find management factors for social-epidemic process and receiving a new technology for making management decision.

In this paper we argue that the goals of education should be changed according to the strategic goals set for the society. Meanings, values, and the shared vision of the future have acquired fundamental importance. They are increasingly influenced by decisions made in the field of politics and economics.

The human being of the future must be a creator and not an appendage to a computer or some other machine. "The Human Use of Human Beings", father of cybernetics Norbert Wiener said [8]. Now we have to convert this challenge into reality.

References

1. Hermann Haken Information and Self-Organization: A Macroscopic Approach to Complex Systems (Springer Series in Synergetics) Springer –Verlag, Berlin, Heidelberg, 1988, 2000
2. Малинецкий Г.Г. Математические основы синергетики: Хаос, хаос, структуры, вычислительный эксперимент. Москва : Книжный дом ЛИБРОКОМ», 2009 – 312 с.
3. Сценарии и перспективы развития России. / Под ред. В. А. Садовниченко, А.А. Акаева А.В. Коротаева Г.Г. Малинецкого, М.: Ленанд, 320 с (Будущая Россия), гл.1 и гл. 3.
4. Взаимодействие органов власти с институтами гражданского общества. Под общ. Ред. Л.А. Василенко М.: Изд-во «Проспект», 2010. – 280 с.
5. G.G. Malinetskiy, O.N. Kapelko Changing of educational approaches with changing of social and economic structures //The Challenge for Graduates in a Changed World, Dublin All Ireland Society for Higher Education Dublin City University, 25th and 26th August 2011 p.76
6. Friedrich Hayek The Fatal Conceit: The Errors of Socialism (1988), p. 76
7. Н.Н. Моисеев Математика ставит эксперимент – М., «Наука» 1979. – 223 с.
8. Norbert Wiener The Human Use of Human Beings. The Riverside Press (Houghton Mifflin Co). 1950

THE SLOW IMPROVEMENT OF SOUTH AFRICAN TEACHER PRACTICES: A CASE STUDY OF TEACHER LEARNING UNDER THE GAUTENG LANGUAGE STRATEGY

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Abstract

Instructional reforms have been the subject of extensive studies to understand the kind of support and pressure which work at changing positively teacher. This article argues that the meaning, form and implementation of quality support and acceptable pressure to improve teacher practices are always context-specific. It examines how the 2010 Gauteng literacy strategy conceptualised and implemented its multi-pronged teacher support and accountability for poor performing schools in South African school education. It argues that this program is conceived with a well calibrated fusion of appropriate support and pressure with a relatively effective implementation and impact by aiming at the building of instructional capacity. It could be improved with more learner-centred material for schools with poor social resources and multilingual classrooms. By showing that the fusion of appropriate support and productive pressure takes different meaning depending on teachers' context and needs, it is hoped to add to the change knowledge.

Keywords: *Teacher change, appropriate quality support, effective pressure.*

1. Introduction

The change knowledge literature has long established in its research of school reform interventions the importance of combining support and pressure tools to improve school performance and teachers' practices. The debate among scholars (Darling-Hammond, 1989; Villegas-Reimers, 2003) revolves around various capacity-building and accountability models, their suitability for teachers, advantages and disadvantages in bringing about teacher change in specific education systems. Elmore (2008) contend that teacher support interventions have to focus on the instructional core to impact positively on learners' outcomes. He also emphasizes the need for TD to influence teacher knowledge and skills, the level of work and active student learning.

At the turn of the century, system-wide instructional reforms, based on prescriptive syllabi and standardized assessment practices, were introduced for high quality and high equity in the UK, Ontario, New Zealand and Australia. Research, studying the effectiveness of these prescriptive reforms, reveals improved teaching and learners' outcomes (Fullan, 2009). However, prescriptive reforms were criticized for undermining teacher autonomy over what and how to teach and for de-professionalizing teachers' work, given that most teachers came from Hargreaves' (2000) collegial professional age. A counter-response is that informed prescription does not exclude informed professionalism as teachers can interpret syllabi, and do local curriculum adaptations (Luke, Weir and Woods, 2008).

This article argues that it is high time to replicate these studies on prescriptive instructional reforms in developing countries with specific education histories and resources. Using Hargreaves' distinction, teachers belong to the pre-professional or autonomous professional age in terms of knowledge, competences, status and control over their work. Does this mean that other support and pressure forms are needed?

This article examines in the context of post-1994 South African school education the meaning of Barber and Phillips' (2000) argument that the successful use of accountability and support depends on how these are fused and balanced effectively against one other. It researches a promising intervention to build instructional capacity for poorly performing schools, the Gauteng Primary Language and Mathematics Strategy (GPLMS) and how support and pressure measures were given appropriate meanings and relevant forms to match teachers' realities and needs. It then examines how these were implemented and their impact on teacher learning and practices.

2. Methodology

The research collected perceptual data from purposefully selected representatives from groups involved in the GPLMS, who could give rich information and allow data triangulation. Semi-structured questions elicited views of 30 participants (3 GDE staff, 5 GPLMS and NGOs managers, 8 supervisors and coaches, 6 HoDs and 8 teachers in 3 differently performing schools) on the effectiveness of the GPLMS conceptualisation, implementation and impact on teacher practices and attitudes, with a special emphasis on its support and accountability instruments.

Data analysis went through the development of thematic constructs, their indexing and piecing together of the whole picture by referring to the literature on these issues. Data collection and analysis was a cyclical process, as data from the first interview transcripts were analysed and used to add some questions to later interviews.

3. Research Findings

The GPLMS program is the Gauteng MEC for Education project, run by a core planning team that has to report directly to the MEC and a deputy-director general (DDG). The MEC wanted to use extra human and social capital and decided that the core GPLMS team, consisting of two GDE middle managers and four outsiders, had managing and coordinating powers and worked parallel to GDE structures (GDE, 2011). It had to respect district curriculum authority and monitoring powers, follow formal GDE channels and refer to districts problematic school issues. The MEC asked the GPLMS team to partner with language and maths NGOs to hire and supply coaches with teaching expertise (470 by 2013) to 792 primary schools (GPLMS staff).

3.1. Appraisal of GPLMS conceptualisation of teacher learning

The GPLMS aimed to bridge the gap between the curriculum framework and the way most teachers operated. It was interesting for its multi-pronged support and pressure which were more relevant and appropriately calibrated than previous interventions.

The GPLMS decided to go back to basics and structure more tightly the teaching material and activities to support teachers; lesson plans were drawn with time frames and a weekly routine for structured tasks and activities to guide more explicitly teachers who had been left for too long to their own devices and were teaching literacy and numeracy in an unstructured, un-sequential and ineffective manner (GPLMS and NGO staff). A criticism voiced by teachers and NGO staff was that this standardized teaching assumed that underperforming schools had similar poor learners and similar teachers with comparable needs for basic foundation knowledge and competences to teach better literacy (NGO 1 and School 1 and 2). Many teachers mentioned that lesson plans were too rigid and "pacy", especially FP teachers who faced increasingly diverse multi-lingual classrooms: "the GPLMS was not learner-friendly because our learners have changed a lot since 1994", as many township children with no pre-schooling and various learning barriers were being taught in a medium of instruction which they did not speak at home (School 1, 2, 3).

They wanted the GPLMS material to recognize the need to make space for additional support program for learners who don't know the medium of instruction so as to understand more quickly teachers and remember from one term to the next. Also more remedial teaching strategies were requested (NGO 2 coach; School 1, 2, 3).

Of course, poorly performing teachers in the worst ranked schools would find the curriculum pace heavy to follow, compared to what they used to do. But, as Pritchett and Beatty argue (2012), overambitious curriculum frameworks create learning gaps for poor learners, leading to shallow learning outcomes from curricular paces moving faster than the pace of average learning. The challenge for the GPLMS mediation program was to convince teachers that they could change their practices by learning how to structure better their lessons and work harder to go faster and engage learners better than before, without losing the majority.

Beyond the support material, the GPLMS provided other forms of interactive support. Coaching was extensively used, as, even though it was an expensive labour-intensive form of TD, it yields good results in changing teachers' beliefs and practices (Scott, Cortina and Carlisle, 2012) if there is a conducive environment. Coaching in the GPLMS was specific to its context and purpose. Teachers were to be given scripted lesson plans, readers and posters and the work of coaches was limited to mediating these in teachers' classrooms. They had to assist teachers with technical planning and preparing already existing lessons and activities (while supporting teachers with the inevitable stressful change process) (NGO 1 and 2 coaches). Coaches were trained to build trusting relationships with teachers by listening, understanding their needs and giving them support to change their practices, as opposed to making teachers comply with lesson plans (NGO 1 coaches). They had to earn teachers' respect and trust.

In addition, there were Professional Learning Groups (PLGs) organised by the NGOs and their coaches, assembling their teachers to learn from each other about common challenges or issues of concern (GDE, 2011). Coaches had to look out for teachers who could master one specific issue and ask them to model concretely to their peers their best practices (NGO 1 coaches). Otherwise, other workshops were organised with experts on commonly difficult issues, such as learners' barriers, multi-grade teaching, classroom management etc. (NGO 1 manager).

Thus, the GPLMS conceptualised the learning process for poorly performing teachers as needing mutually reinforcing forms of quality support, including material, coaches and collegial teacher groups. It was more concerned with aligning the teaching of these schools with what was required by the official curriculum than training teachers to face diverse learners' abilities and prior knowledge with poor social resources. As a result, the GPLMS lost some teachers who reverted back to their own ways of teaching and did not improve their learners' learning.

The GPLMS chose instruments that fused pressure and support. The MEC ensured that schools and teachers were support by the GPLMS intervention while making sure that teachers followed these instructions and reported back to her during her road shows. Coaches were supposed to combine simultaneously genuine support and gentle pressure (a form of professional accountability where support and pressure are two sides of the same coin) (Darling Hammond, 1989). Coaches had to act as critical friends and ensured teachers did not put them in the same category as previous circuit inspectors with their fault-finding punitive mind-sets (GPLMS staff, NGO 1 and 2 coaches). The MEC wanted coaches to inverse the support/monitoring balance of 20/80 practiced by districts (GPLMS staff). PLGs were another form of professional accountability, because teachers tend to respond well to pressure from their peers when they work together, as competition develops and pushes struggling teachers to work hard to avoid being left behind their colleagues (NGO 1/2 coaches).

3.2 GPLMS implementation: teacher learning

Material, lesson plans, coaching: how appropriate for teacher learning?

The teaching material was welcomed by most coaches as more appropriate as it guided teachers and made their work easier (NGO 1 and 2 coaches). Teachers mentioned how scripted lesson plans pushed them hard and acted as a 'yardstick' (or pressure) to prevent them from falling behind the curriculum coverage. Any new regimented program of scripted lesson plans was bound to cause tensions with some teachers. Most FP teachers complained that the fast pace of the material for large classes of learners, most of whom (85%) hardly spoke the medium of instruction. Many mentioned that the material was not designed with, in mind, learners from different socio-linguistic backgrounds, learning at a slower pace (NGO 2 coaches, School 1/2). More time and different material were needed, including special support program.

NGOs admitted that the quality of coaches was uneven as they had to look for many coaches to support mother tongue literacy teaching (NGO 1 and 2 managers). They tried to hire former teachers or HoDs of language but often had to hire ordinary teachers with limited content and pedagogical knowledge, because salary conditions were not good or permanent.

Coaches explained that their first challenge was to create trusting social relationships by being sensitive to teachers given their disempowering experiences with the unrealistic curriculum changes (4 in 10 years!) and fault-finding district supervisors. Once coaches were trusted as critical friends, they worked with teachers and demonstrated how to follow the GPLMS material while monitoring them directly or through their learners' books. So, coaching was a form of professional accountability, which Darling Hammond (1989) argues was also effective collegial support.

Coaches mentioned that teachers responded differently, depending on who they were, which school culture or ethos they came from and which learners they worked with. That is also why several strategies were developed for different teachers.

Different support and pressure strategies.

The most resistant teachers disliked observation, following scripted lesson plans and new ways of teaching. According to coaches, these teachers had many invalid excuses. Coaches gave them more individual sessions to discuss how to improve their planning and lesson preparation. They asked them to bring their own lesson plans and compare these to the GPLMS material to show how learners could learn better and benefit from the material. With the worst resistant teachers, coaches mentioned tidying up their desk, classrooms, files and learners' books. They then offered to take over the class for one week to demonstrate how the new practices worked concretely and impacted on learners. They explained that they were former teachers and were also gradually won over to these new practices. They were careful to praise them on whatever small changes they produced as encouragement was necessary to build their confidence. However, there were teachers with legitimate reasons, arguing that the GPLMS teaching was not appropriate to their multi-lingual learners and that their ways worked better with their learners: "the GPLMS does not fill a gap in the curriculum framework for us but it creates further gaps for learners by not being friendly to our learners" (School 1). They felt coaches did not want to hear the problems learners had, preferring to continue pushing for the inappropriate GPLMS material. Coaches told these teachers they would be back to check on them and their learners' books. The worst resistant teachers compared coaches to district officials who were more concerned in recording how the material was followed than in listening and assisting teachers on what they needed (i.e., remedial teaching). Coaches replied that, behind poor attitudes, these teachers were confounded by the structured GPLMS material and its routine teaching which required more preparation which they never did. They did not want to change but, according to coaches, "they should never be teachers in the first place and it is them who need remediation".

Average teachers struggled for a while with the GPLMS practices and the pacing of lesson plans and activities (School 2). Coaches attributed this to their poor classroom management skills or because they did not fully understand how to adapt the GPLMS material to their classrooms. Some had never been taught phonics or

followed a tight developmental sequence of teaching themes which reinforced one another. However, these teachers didn't have negative attitudes and welcomed learning new teaching and time management skills even though it involved harder work (School 1 and 2). They started to experience how the new practices worked better with learners and became eager to work harder and assist colleagues who struggled through PLGs. Their professional competences, knowledge and engagement with work and colleagues improved gradually.

NGO coaches agreed that there were slow improvements of teaching practices to a basic level and recommended "continuous incentives and monitoring to keep teachers motivated and on their toes" (School 2). If coaches were to be phased out in future, the HoDs should take over but have to be supported now for them to change and adopt new instructional leadership roles (NGO1, 2 managers and coaches).

4. Conclusion

This article argues that prescriptive instructional reforms in South Africa is a required step for many teachers who need a carefully calibrated fusion of support and pressure, which are appropriate to improve teachers' instructional capacity given their poor knowledge and competences, under-resourced context and ambitious curriculum framework. The support has to include detailed lesson plans supported by coaches and PLGs to ensure that teachers become more organised in delivering competent literacy teaching. This does not de-professionalize teachers but is a vital capacity building step. The next step is to improve school organisational capacity and instructional leadership.

There are three lessons to the GPLMS: 1) there should be a fusion of quality support and acceptable pressure measures; 2) quality assurance systems are needed to ensure quality material, readers and coaches and 3) an additional support program for teachers dealing with diverse slow learners to convince them that the new practices will reach most of the poor learners of their multilingual and multi-racial classrooms.

References

- Barber, M. and Phillips, V. (2000). Should large scale assessment be used for accountability: the fusion of pressure and support? *Journal of Educational Change*, 1 (3), 277–281.
- Darling-Hammond, L. (1989). Accountability for professional practice. *Teachers College Record*, 91 (1), 55-80.
- Elmore, R. (2008). Improving the instructional core. Retrieved on 15th January 2013 from mountaintopleadership.wikispaces.com/.../School+Improvement+Elmore...
- Fullan, M. (2009). Large-scale reform comes of age. *Journal of Educational Change*, 10:101–113
- Gauteng Department of Education (2010). Gauteng Primary Literacy Strategy 2010-2014, 6 March.
- Hargreaves, A. (2000). Four ages of professionalism and professional learning. *Teachers and Teaching: History and Practice*, 6 (2), 151-182.
- Luke, A., Weir, K. and Woods, A. (2008). Development of a set of principles to guide a P–12 syllabus framework. A report to the Queensland Studies Authority, Australia.
- Pritchett, L and Beatty, A. (2012). The negative consequences of overambitious curricula in developing countries. Working paper 293. Centre of Global Development.
- Scott, S., Cortina, K. & Carlisle, J. (2012). Understanding coach-based professional development in Reading First. *Literacy Research & Instruction*, 51, 68-85.
- Villegas-Reimers, E. (2003). *Teacher Professional Development: an international review of the literature*. Paris: International Institute of Educational Planning.

A CONCEPTUAL MODEL FOR TEACHING CRITICAL THINKING

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Abstract

There is evidence, both from research and considerable anecdotal evidence that teachers in public schools in the MENA region and India do not effectively teach children how to think critically, how to ask questions, how to search for answers on their own rather than to simply memorize what they are told or what is in their textbook. The use of rote memorization is predominant in this region, yet the development of world class schools for the knowledge economy requires that students be able to use reasoning to think critically.

Critical thinking, viewed as rational and analytic thinking is crucial for participation in a knowledge economy and society. This presentation first provides results from a case study of teaching critical thinking. In a highly regard public school teachers were asked their opinions about teaching critical thinking. All were in favor and claimed they taught thinking. Systematic classroom observation with a checklist showed that almost no efforts to teach reasoning and thinking existed.

The second part of the presentation suggests a conceptual model for teaching thinking based on six components,

- structured content,
- cognitive learning strategies,
- metacognition
- affective learning variables including motivation, attribution of control, self-image
- dispositions, and
- problem-solving skills.

The presentation further examines research on the historical role of teachers in the development of critical thinking, and, outlines the roles of students, parents and teachers in the improvement of thinking, including what should be done by each and which are the main impediments to successful development.

Keywords: *Critical Thinking, Cognitive Strategies, Metacognition, Problem-Solving Skills*

1. Introduction

“I assume critical thinking to be reasonable reflective thinking focused on deciding what to believe and do...”(Ennis, 1985). “When teachers refer to teaching for ‘critical thinking’ they typically mean teaching for analytic thinking. Teaching for analytical thinking means encouraging students to analyze, critique, judge, compare and contrast, evaluate, and assess” (Sternberg, 2003).

Many educators and researchers consider teaching critical thinking the core of the education system and the true essence of learning. It is the engine of learning and understanding. It is the reason behind invention and discoveries. Students should learn thinking skills in order to live successfully now and in the future. The rapid change of today’s society requires that people have a high level of critical thinking in order to evaluate claims, analyze what happens around them and decide to take the right path according to their thinking.

The purpose of teaching critical thinking through academic subjects in schools is to prepare students to succeed in the world and to be responsible for their own continuous learning and progress. Schools are the first place (even before the home)

where students/children are exposed to critical thinking strategy in a systematic way. They might start practicing it at their homes informally, before they start schools, but soon they will lose this skill if it was not practiced in a strategic framework. Once they are on track and have learned the basic principles of using critical thinking in schools, they can carry these skills for the rest of their lives and apply them in their real life outside school. As a result, if teachers and educators in schools were aware of their vital role in preparing the students to become thoughtful and creative people in the future; they would act accordingly and would take responsibility to make sure that this goal is achieved.

Critical thinking typically involves both, a set of activities and particular attitude towards thinking and learning. The practical activities include for example, various strategies of asking questions, testing assumptions, discussions, and generating ideas. Teachers facilitate or foster critical thinking through the task set, the habits formed by the learners and the careful provision of feedback and explanation because critical thinking skills should be taught in a clear manner so that students can comprehend and adopt it. Schaferma (1991) notes that children are not born with the power to think critically, nor do they develop this ability naturally beyond survival- level thinking. Critical thinking is a learned ability that must be taught by trained and knowledgeable instructors.

In this article I will a) give a brief presentation of in-class observation of the teaching of thinking, b) briefly suggest a conceptual model for teaching thinking.

For the purpose of this study, and as predetermined by the research questions and hypothesis, the research primarily focused upon visiting a public School in the UAE - Dubai. This school was chosen because it is considered one of the best public schools in the UAE and has won many national prizes in teaching strategies and student care. Three questions were asked.

1. Do teachers use strategies to stimulate critical thinking in teaching?
2. Do teachers create and develop an atmosphere to foster critical thinking in the classroom?
3. What teaching strategies and methods are used by the teachers?

The observed school was established twenty years ago and has had many cosmetic changes in the building and improvements in its facilities. The school has 400 students and thirty teachers. The education system starts from KG 1 to grade five, and later on the students are transferred to another public high school. The entire administration members including the principal are local Emirates. Almost 99% of the teachers and students are locals. The students were only girls. The school is supported by the Ministry of Education and, as mentioned before, is considered one of the best schools in terms of the quality of education they offer and its teaching skills (as it is posted on their awards). The targeted students were from grade five and four, because these two grades are expected to be able to express their thoughts through activities and discussions. At these ages students should be able to develop their own point of views, think and react to the teachers' instructions thoughtfully if they were trained to do that.

The three teachers that teach Arabic, History, and Science were observed on a regular basis. Each one of them was observed four times teaching grade four and five (all those teachers had to teach grade four and five) in order to record their teaching methods and compare it to the research topic. A total of twelve lessons were observed. In each classroom, the researcher took field notes, listened to teachers and students conversations carefully, noted down teachers demonstration methods and recorded the whiteboard notes.

A systematic observation checklist was used in the classes. It was developed by Winocure and published in *Developing Minds book: a Resource Book for Teaching Thinking* in Costa,(1991). This check list tool has been adopted by many researchers and educators and was used as a general framework for teaching critical thinking particularly in schools.

	Observation Checklist	No. of practice		Percentage	
		Yes	No	Yes (%)	No (%)
3	Students help others to analyze and solve problems.	0	12	0.00%	100.00%
5	Incorrect students respond elicit encouraging, Supportive Comments.	0	12	0.00%	100.00%
7	Students take note systematically.	0	12	0.00%	100.00%
9	Ideas are graphically symbolized during instruction.	2	9	16.67%	75.00%
10	Teacher acts as facilitator.	1	11	8.33%	91.67%
12	Teacher seeks evidence for stated claims.	0	12	0.00%	100.00%
13	Teacher frequently asks, "Why do you think so?"	0	12	0.00%	100.00%
14	Students relate learning to past experience or similar situations.	0	12	0.00%	100.00%
15	Teacher allows time to consider alternative/point of view.	0	12	0.00%	100.00%
17	Teacher asks students to justify and explain their thoughts.	0	12	0.00%	100.00%
18	Teacher asks open ended questions with multiple answers.	2	10	16.67%	83.33%
19	Provides visual cues for developing cognitive strategies	0	12	0.00%	100.00%
21	Teacher poses "what if" suppose that" questions.	0	12	0.00%	100.00%
22	Encourages transfer of cognitive skills to everyday life	0	12	0.00%	100.00%
23	Teacher encourages transfer at end of lesson with Comments like, "this will help you in your everyday Life in this way..."	0	12	0.00%	100.00%
25	Teacher asks students to clarify and justify their response.	0	12	0.00%	100.00%
26	Teacher reinforces students for responding to open ended questions.	0	12	0.00%	100.00%
27	Encourages students to ask question	0	12	0.00%	100.00%
28	Teacher poses problematic situation.	1	11	8.33%	91.67%
29	Teacher withholds correct responses; encourages students to explore possibilities.	1	11	8.33%	91.67%

For lack of space I include only the most crucial examples. It is clear from an examination of the checklist that the observed teachers did not encourage students to ask questions, participate in discussion and express their thoughts (100.00%). Of the thirty categories in the chart, seventeen produced a 100% failure by teachers to respond in a manner that would stimulate critical thinking, eight categories had negative scores of two-thirds or more and only four categories were above the fifty percent positive level. Of those, all were issues related to somewhat regular teacher behavior (organized presentation, probing for correct response, allows wait time for response). There were no indications of the teacher asking students "Why do you think so?" in order to ask students to clarify and justify their response (100.00%).

The teachers rarely used "if/then" language or "what if," "suppose that" questions to encourage students to think and conclude (-100.00%), nor did they encourage transfer of cognitive skills to everyday life to relate what are learning to the background knowledge or to the practices in their daily life.

The teachers did not encourage the students to help others to analyze and solve problems from the text book or exercises; each one was responsible to solve their own given questions. Rarely the students had the chance to discuss and try to solve problems and issues when they were divided into pairs or small groups (#1, -66.67%), other than that, were they not asked to think to discuss other students' questions or problems (from the textbook). Most of the time the teachers did not withhold correct responses; and did not encourage students to explore possibilities (#28 & 29, -91.67%). With the percentage of -33.33% most of the teachers rarely accepted all valid students' responses, i.e., rejecting responses two-thirds of the time. It

appeared that there was only one way to solve the problems or one right answer for any question.

2. What do we think about when we think about Critical Thinking?

It is possible to suggest a plan for learning critical thinking that will truly help students to reflect and to reason. It is composed of five parts.

Content

First, the student is learning something – think content - mostly languages, math, natural science, history and related subjects. But instead of simply memorizing information, the student should learn to use cognitive strategies to facilitate the learning of the subject matter, the verbal information, concepts, rules, principles and the logic and structure which comprise the subject. To teach critical thinking content is nothing more nor less than a *mode* of thinking, a way of figuring something out, a way of understanding something through thought.

Attitudes and Dispositions

Second, and crucial, the student should develop positive attitudes about learning the subject, such as personal responsibility, persistence, mastery, self efficacy and autonomy. Through the process of self-efficacy and the theory of self-determination the child develops intrinsic motivation, develops socially and has a sense of well-being which supports and facilitates learning (Ryan and Deci, 2000). These dispositions begin very young, have much to do with modeling their parents and with the reinforcement contingencies and intimacy responses of the parents.

Intellectual Standards

Third, the student should learn a great deal about intellectual standards in the mastery and analysis of information, such as clarity, objectivity, relevance, depth, breadth, significance, etc. In my experience, this subject is simply not present in most school learning and only casually present in the home. The standards require practice and adoption of a stance. Most students do not develop a solid standpoint concerning clarity of thinking, precision and relevance.

Learning Strategies

Fourth, the student should learn to be aware of what and how he or she is learning, when and how to use cognitive and affective learning and enacting strategies, when to review, rehearse, and evaluate what is being learned, how to recognize and apply basic rules of logic, how to discern the overall structure of the subject being learned, and how to think about applying his knowledge. This is called metacognition: what you know about what you know (see Chadwick, 1988). It is critical not only in planning and monitoring on-going learning but in controlling motivations and dispositions.

Problem Solving Skills

Problem solving skills like those of Polya and others using problem identification, search for alternatives, application and formative evaluation must also be learned.

The combination of the five elements, systematically taught, should prepare the student for critical thinking.

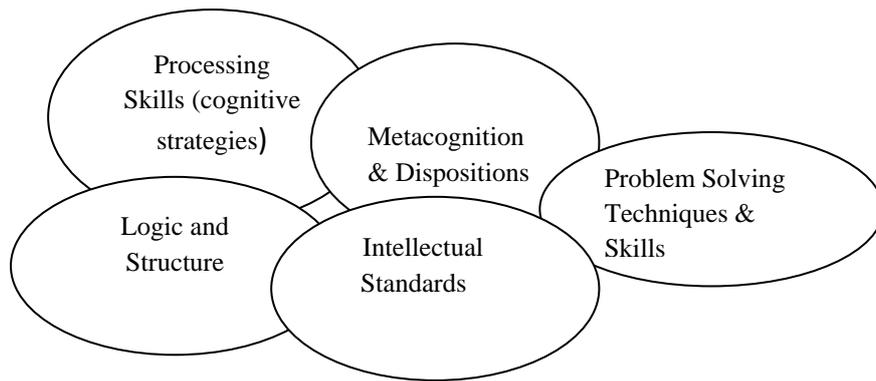


Figure 1. Elements of Critical Thinking

References

- Chadwick, C. (1988) Estrategias Cognitivas y Afectivas en el Aprendizaje. (1988) *Revista Latinoamericano de Psicología*, 20, No. 2, 162-205, and *Estudios Sociales*, 46, 71-108 (Chile).
- Costa, A. (1999). *Developing Minds. A resource Book for Teaching Thinking*. Virginia, ASD, Vol. 1.
- Ennis R. (1985) Critical thinking and the curriculum. *National Forum*, 65 (1), 28-31.
- Ryan, R & Deci, E. (2000) Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social development and Well-Being. *American Psychologist* Vol 55, No 1, 68-78.
- Sternberg, R. What is an "Expert Student?" *Educational Researcher*, Vol. 32, No. 8, 5-9.

DISCONTINUITIES AS EXPERIENCED BY FIRST-YEAR STUDENTS IN THEIR ENCOUNTERS WITH ASSESSMENT

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Abstract

This presentation will discuss first-year Education students' perceptions and understandings of the written assessment tasks encountered on their university courses. Our study focuses on the epistemic mode of participation, specifically on students' understanding of the academic criteria of writing and assessment at university level. It draws on data from three focus groups and discusses the ruptures students feel and think about and how this translates into their academic writing. The transition from high school to tertiary study is generally challenging as students have to acquire a 'feel for the game' (Bourdieu, 1990: 66). In order to foreground the transition from the semiotic domain (Gee, 2002) of schooling to the semiotic domain of university, we use the notion of 'discontinuity'. This notion is useful in representing the gap students experience between what is accepted and expected in these different domains. We argue that this disparity creates discontinuities for many first-year students. These are most strongly realised in the contrast between the expectations of assessment at school and the criteria used to assess students in a tertiary environment. These factors often result in first-years feeling confused, disempowered and helpless when faced with the higher order challenges of written assessment tasks. In particular we will focus on how first-year students experience discontinuity in three areas: referencing, creativity and academic criteria and feedback. The analysis is underpinned by Gee's (2002) theoretical constructs of 'semiotic domains', 'design grammars' and 'affinity groups.' The implications of this investigation suggest firstly, that assessment needs to be foregrounded as a strategy for promoting student learning and not merely as a tool for measuring student progress. Secondly, subject and learning specialists need to collaborate more closely with one another in order to develop educational processes that enable students to become confident and proficient academic writers. Also the findings indicate a need for educators at university level to provide assessment feedback to address the absence of internalised criteria.

Keywords: *Assessment, semiotic domains, academic writing*

COURSE EVALUATION AND TRAINEE GRADES

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Abstract

Part of the quality evaluation of a course or module is the student evaluation questionnaire. Such a form should be seen as part of an ongoing dialogue between staff and students and as an opportunity to improve the module or the program and the quality of the student experience. It should be treated as a supplementary method for achieving excellency. The evaluation questionnaires are common practice in many universities as part of their quality assurance procedure and are also quite common in the first and secondary education. They are based on the principles of customer satisfaction who in the education case is the student. Tutors should take this feedback seriously because it provides useful information for improvement. Besides the evident results of such an evaluation method, there are some extra parameters that should be taken into consideration and examined further. The information that the students submit should be confidential. The students should be re-assured that they are not exposed by expressing their opinion about their tutor. The evaluation parameters however do not end here. The timing of the evaluation is important. For example if the students have been marked and are unhappy with their grades, they may be willing to mark down their professor as a reaction. Alternatively, if their marks are good, they may evaluate better and not objectively. On the other hand, the same dilemmas may be faced by the tutors. The tutors may be intrigued to mark better the students to avoid bad marking at their evaluation. There are therefore parameters that need careful planning to ensure the accuracy of results. The present paper based on the above considerations has examined the association of the students' evaluation feedback and their marking. The research has been extended on several groups of mature students that have participated in short-courses through the method of distance learning organized by the Hellenic Open University. The confidentiality of the results has been maintained by distributing all the information through the secretariat of the program who organized the association of the marks against the evaluation feedback without exposing the names of the students

Keywords: *Quality, education, evaluation questionnaires.*

1. Introduction

In the last few decades the academic community has placed a lot of emphasis on the assessment of teaching effectiveness. This assessment in turn has been associated with promotions, salary reviews and other positive evolutions. The most common way to measure teaching effectiveness is an in-house developed questionnaire which is filled in by the academic member of staff's students towards the end of the academic year and it is usually distributed before the exam period. The tradition to use the student evaluations feedback to evaluate an academic member of staff is not uncommon; however it is an issue of dispute because of the validity of these forms and their sensitivity to external biases. The first question is how honest are the students answers and thus whether these forms can accurately predict student learning. Another important factor that must not be neglected is the accuracy of students' responses considering that their replies can be influenced by a number of factors not necessarily related to the teaching effectiveness of the staff under evaluation, the most common of which is the marking that the student has received.

Questions of bias involve the possibility that student responses are influenced by factors unrelated to the faculty member's instructional effectiveness.

The present research applies the methodology of evaluation questionnaires to shorter training courses run by the method of distance learning by the Hellenic Open University (HOU) which last a few weeks. The purpose is to evaluate initially the trainees' response and subsequently to match these responses to the trainees' marking.

The research has been undertaken for a selection of the programmers of the HOP, under the research program code EDEL 146. The evaluation questionnaires due to the short time of the course were distributed after the exam period however the trainees were assured that their response would remain confidential. The secretariat of the program associated the marks of each trainee against the evaluation feedback without exposing the names of the trainee. A total of 96 participants had participated in the selected programs although only 66 returned the evaluation questionnaire. The majority of the students were mature with an average age of approximately 35 years.

2. Empirical Analysis – Model Development

The questionnaire had examined the following parameters:

IE = INSTRUCTOR'S EVALUATION (4 questions)

CMME = COURSE MATERIAL AND METHODOLOGY EVALUATION (8 questions)

TPE = TOTAL PROGRAMME EVALUATION (12 questions)

GRA = TRAINEE FINAL PROGRAMME GRADE

We want investigate the relationship between:

1. GRA and TPE
2. GRA and IE
3. GRA and CMME
4. IE and CMME

To be more specific, we obtain the correlation as a measure of the strength of a relationship between each pair of the above variables. Furthermore, each relationship is assessed for its significance. For each of the categories IE, CMME and TPE, we use the mean of the respective questions for each respondent.

The strength of a relationship is indicated by the correlation coefficient, r , but it is actually measured by the coefficient of determination, r^2 . The significance of the relationship is expressed in probability levels: p (e.g., significant at $p=0.05$); this tells how unlikely a given correlation coefficient, r , will occur given no relationship in the population. We recall: the smaller the p -level, the more significant the relationship and the larger the correlation, the stronger the relationship.

3. Review of the classical model for testing significance

The classical model for testing significance assumes that you have a sample of cases from a population. The question is whether your observed statistic for the sample is *likely* to be observed given some assumption of the corresponding population parameter.

If you observed that the statistic does not exactly match the population parameter, perhaps the difference is due to sampling error. The fundamental question: is the difference between what you observe and what you expect given the assumption of the population large enough to be significant (to reject the assumption)? The greater the difference (the more the sample statistic deviates from the population parameter) the more significant it is; that is, the less likely (small probability values) that the population assumption is true.

The classical model makes some assumptions about the population parameter. A common assumption is that there is NO relationship between X and Y in the population: $\rho = 0.0$

Under this common null hypothesis in correlational analysis: $r = 0.0$

where,

r = correlation between two variables in the sample, and

ρ = correlation between the same two variables in the population.

4. Testing for the significance of the correlation coefficient, r

The theoretical $t = 1,67$ (at the 5% level of significance). Given our sample of 66 questionnaires we have obtained the results given below.

	r VALUES	t-statistic VALUES
r(GRA, TPE)	0,14	1,16
r(GRA, IE)	-0,02	-0,20
r(GRA, CMME)	0,23	1,86
r(CMME, IE)	0,81	11,09

The above implies the following results:

- For the case of the correlation between GRA and TPE the t-statistic lies below the critical t value of 1.67. So the null hypothesis of no relationship in the population ($r = 0$) cannot be rejected.

- For the case of the correlation between GRA and IE the t-statistic lies below the critical t value of 1.67. So the null hypothesis of no relationship in the population ($r = 0$) cannot be rejected.

- For the case of the correlation between GRA and CMME the t-statistic is greater than the critical t value of 1.67. So the null hypothesis of no relationship in the population ($r = 0$) is rejected.

- For the case of the correlation between IE and CMME the t-statistic is greater than the critical t value of 1.67. So the null hypothesis of no relationship in the population ($r = 0$) is rejected.

- The relationship between GRA and TPE is positive, strong but not significant
- The relationship between GRA and IE is negative, weak but not significant
- The relationship between GRA and CMME is positive, strong and significant.
- The relationship between IE and CMME is positive, strong and significant.

5. Conclusions

In the vocational training programs of the Hellenic Open University (CODE EDEL 146), the analysis of the evaluation and grades data shows that there is a positive, strong and significant relationship between the marking that has been assigned to each of the trainees and the grades that the trainees have given to the course material and methodology (CMME).

Furthermore, a strong, positive and significant correlation is confirmed between the Instructors' and Course Material and Methodology evaluations by the students. Finally, the analysis of the evaluation and grades data cannot confirm a (positive or negative) relationship between the marking of the trainees (GRA), and the grades, that the trainees evaluation of their instructors (IE) and the programme as a whole (TPE).

Several more evaluations are planned for the future with different combinations, for example the evaluation questionnaire being distributed before and after the exam, examination of more trainees and cross examination of the new results. Considering that the trainees examined are mature well over their 30's, it will be interesting to correlate the results of this research with the pertinent results of other researches based on younger groups and observe if the trends differentiate.

References

- Spooren, P. (2010). On the credibility of the judge: A cross-classified multilevel analysis on students' evaluation of teaching. *Studies in Educational Evaluation*, Vol. 36, Issue 4, 121–131.
- Beleche, T., Fairris, D. and Marks, M. (2012). Do course evaluations truly reflect student learning? Evidence from an objectively graded post-test. *Economics of Education Review*, Volume 31, Issue 5, 709–719.

INTRA-ORGANIZATIONAL CAREER OPPORTUNITIES IN ESTONIAN UNIVERSITY LIBRARIES: A NECESSITY AND A POSSIBILITY?

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Abstract

The aim of the current paper is to clarify if the staff of Estonian university libraries has enough possibilities for self-realization and variety in their everyday work; whether employees see any relationship between their personal performance improvement and their intra-organizational career and, whether they see any possibility and/or necessity for promotion within their library. The data used in this paper is based on reviewing of relevant literature to provide an overview of the concept of intra-organizational career as well as on the results of the original online survey, created by the paper's authors, held in 2011/2012 in Estonian university libraries governed by public law in Estonia. The analysis of the results are interpreted on the basis of the literature, authors' opinions, based on long-term working experience in Estonian academic libraries and on the legislation of Estonia. Estonian university librarians are relatively pessimistic about career opportunities within their libraries, and, unfortunately do not see any relation between performance improvement and their career. The biggest problem is that the younger librarians do not see any opportunities for promotion. The issues that emerge from this survey could be helpful for library managers, but also for employees.

Keywords: *University librarians, intra-organizational career, career advancement, promotion*

1. Introduction

There may be an impression that as professionals, librarians derive their greatest satisfaction from the nature of their work, that is, from the work itself. In terms of areas leading to low satisfaction or dissatisfaction, researchers have found that the greatest dissatisfaction arises from low salaries, insufficient promotion or other career advancement opportunities, and lack of recognition for accomplishments (Sierpe, 1999, p. 484).

Although career could be inter-organizational, intra-organizational or combination of both, the current article is more focused to the intra-organizational career.

Modern working environments have become more demanding in terms of responsibility and more interesting, it requires more universality and flexibility from the employees, but also supports the individual development of employees within the organization. Career moves may be vertical, horizontal or radial. Vertical mobility within an organization is generally upwards, but can also be downwards when the employee's professional competence is insufficient. Horizontal mobility means an employee's movement within the same level of hierarchy. In the case of radial careers, employees are included in the management of the organization in circumstances where their positions and main duties remain unchanged (Türk, 2005, pp. 340-341; Hellriegel *et al*, 1989, pp. 510-512).

Promotion of employees means that they move to higher positions at work and this process is a part of a career system. Promotion usually has a positive influence on

the employees' morale and motivates them to improve their performance (Türk, 2005, p. 112). If employees expect this, but cannot achieve it, they become dissatisfied. There appears to be a conflict between the promotion possibilities and the expectations of employees (people always consider their possibilities to be greater) (Edem, 1999; Sepp, 2012, p. 28).

In consequence – plan for career can not be taken as a dogma, and employees can not be given promises to get a certain job. The most important factor for promotion can only be his/her higher qualification for the job, compared with other candidates. The organization should create as open ambience as possible and also a wellknown system for job offers and job procurement.

Within the last couple of decades the career mobility has become significantly more diversified. Compared with the previous times when a person worked for only a few employers in his/her lifetime, presently the average time to work on the same position is seven to ten years (DeSenzo & Robbins, 2005, pp. 224-225). Free movement of employees is a problem for an organization – studies have shown that a departing specialist may cost a company up to one and a half year's salary. It is exactly that expensive to find a new employee, train him/her, if necessary, and adapt him/her into the organization. The departure of a good employee may also cause the departure of other employees. Voluntarily departing employees are, in most cases, primarily the best and most needed people of an organization; on the other hand, as a rule, those who are hampering the development of an organization never leave by choice (Gobbesso, 2003; Türk, 2005, p. 97). Therefore, intra-organizational human resources will become increasingly valuable.

A large-scale research carried out across Europe during the 1990s, studying the structure of 450 organizations (Ruigrok *et al*, 1999), showed that there is an increasing trend of an "internal labor market" within organizations: employees are no longer regarded as fixed into the field or position where they are currently employed. More and more people are scheduled to be transferred to another unit within the organization. Promoting employees provides them with a positive incentive to work; it is cheaper for the organization and ensures a reliable result. An employee can be prepared in advance and their adjustment costs are lower as a result.

Intra-organizational labor policy serves various organizational goals: from the organizational management perspective, for example, it gives an employer a good opportunity to develop and maintain the knowledge and skills of its employees, which in turn can contribute the enhanced productivity and efficiency of the organization. Also, intra-organizational grades allow rational transfer of knowledge and skills, which can promote intra-organizational capacity and expert skills. Intra-organizational labor markets can only be created in larger organizations as it inevitably entails a relatively high level of structure (multiple levels of careers within one organization) (Wise, 1996).

2. Sample of the Study, Method, Objectives and Data Collection

In 2011/2012 a survey, using an online questionnaire method, was performed in Estonian university libraries governed by public law. These libraries were chosen because they are funded on a similar basis, they perform the same functions and their main aim is to support high quality education and to increase the state's potential for ongoing scientific discovery and development. University libraries are considered to be "legal persons in public law" (*i.e.*, a corporate entity with the standing of an individual) and are one of the autonomous, independently functioning scientific, educational, and cultural institutions that act on the basis of science and developmental activities stipulated in the statutes of their parent universities and other legislation. Because of the high demands provided for the university libraries, also the demands for university library employees are very high.

For compiling the questionnaire, the authors analyzed several previous studies and also questionnaire appendixes of these studies (Kuvaas, 2006; Gabris & Mitchell,

1988; Harris, 1988; Schneider et al, 2003; Snape et al, 1998; Murray, 1999; Leckie & Brett, 1997). The questionnaire consisted of four parts: A) Job satisfaction: general issues; B) Learning and individual development; C) Division of labor and coordination; D) Performance measurement and appraisal. To identify librarians attitudes, five-point and three-point interval scale (so called Likert-scale), discrete numerical five-point scale and multioption scale were used in this questionnaire.

The questionnaires were applied to 195 library professional staff working in selected university libraries. 111 completed questionnaires were received back. The rate of receiving back was 57%. Data obtained from the completed questionnaires was analyzed using simple percentages, tables, bar charts and pie-charts.

The primary focus of the study was upon university librarians' attitudes towards the measurement and appraisal of their work performance as well as work organization upon career opportunities. However, information collected by the survey instrument included data on the promotion opportunities, opportunities for self-realization and applying skills, librarians' willingness to upward mobility, relationship between promotion and work performance etc. Connected with the fact, that the initial questionnaire included 71 questions, together with questions about the respondents and some specifying questions, the authors of the survey decided to analyse only the questions, concerning the career for the purpose of the current paper. The aim of the current paper is to find out:

- what are the opportunities of the librarians and specialists to realise themselves and reach their full potential;
- whether there exist the needs and possibilities for intra-organizational career in university libraries;
- is there any relationship between employees' performance and promotion opportunities.

3. Findings

There were hardly any (2 respondents) people with a PhD, participating in the survey of university libraries and they work as middle managers or in the management board of the library. A master's degree does not automatically grant employees a promotion opportunity, thus 6% of the employees who have a master's degree work as specialists, 1% as middle managers, and only 3% of them are main specialists (10% of the respondents have a master's degree).

Everyday work offers opportunities for self-realization for many librarians and specialists. 68% of the survey respondents stated that their current work provides them with opportunities for self-realization. Unfortunately, as much as 30% of respondents did not feel that their work offers opportunities for self-realization. A total of 58% of librarians can sufficiently implement their abilities in their present job; however, 30% of respondents are of the opinion that they will not be able to fully utilise their abilities in their current position.

The possibility of self-realization (realizing potential, implementing individual skills) usually requires a more responsible or challenging job that is acquired as a result of promotion. Promotion usually ranks in the first or second place as an indicator of overall satisfaction. Still, it does not necessarily mean that a good specialist will be promoted to a senior management position, there are also many other responsible positions in libraries.

Mostly 51 to 60 and 61 to 70 year old employees are able apply their skills in their present position. Younger librarians do not see any opportunities for promotion. Furthermore, middle-aged and older personnel in the larger university libraries have already occupied most of the leading positions; therefore personnel between the ages of 21 to 30 and 31 to 40 are currently unable to sufficiently apply their skills. There are also dissatisfied people in the age group of 41 to 50.

If in some European countries a person who has reached retirement age has to quit his/her job, then in Estonia the formal retirement age is in fact an imaginary limit in which a person becomes entitled to a retirement pension, but there is no compulsion for leaving work. Having done the work that has brought satisfaction and pleasant feelings, it is natural that people want to work on in their retirement age. At the same time, Estonia is the only country where a retired person can keep their pension while continuing to work (Riikliku pensionikindlustuse seadus (State Pension Insurance Act), 2002). This situation, however, does not motivate people who have reached retirement age to retreat from their current positions and look for opportunities to work, for example, part-time, to provide an opportunity for the self-realization and full application of the skills of their younger colleagues. Pensions are small and, in order to manage, all who are in good health will continue working after retirement age in order to maintain an active lifestyle that includes travelling and engaging in hobbies. Therefore, retirement (disengagement) is not particularly common among the employees of Estonian university libraries who have reached retirement age.

Creativity in a library most certainly depends on the specific department in which a person works, as well as specific tasks. It also depends on the employee's ability to turn routine work into creative work. 63% of the respondents believe that their work is creative or rather creative; 24% of the respondents consider their work rather routine or routine.

On average, the organizational structure in libraries changes very rarely and that is why the positions are static and intra-organizational mobility is minimal. Similarly, the expectations of library employees for any career mobility are also minimal.

Although many respondents have had to perform duties that were not included in their job descriptions, the share of those who would like to work on another position at their current library was only 29% while 48% of the respondents had no wish to do so. The notion that people are generally interested in upward mobility only is not always true. Many people are not interested in a hierarchical career at all. Instead, librarians and specialists wish to aspire to perfection at their current position and increase their professional competence, and career mobility is mostly horizontal.

Even though 48% (36% + 12%) of the respondents would not be willing to work on another position at their library, a total of 74% of the respondents wished that if vacant positions occur, the management would look for suitable candidates first from among the existing staff and only then from outside the organization.

Unfortunately, the staff of Estonian university libraries do not see any relation between performance improvement and their career. Most of the respondents do not consider realistic that they would get a promotion through improving their personal performance – 22% and 37% of the respondents do not expect to get a promotion. Only 6% of the respondents considered it probable that they would get a promotion via improving their work results. This fact might cause the feeling of injustice, bringing along levelling, that is, central tendency, where top employees are remunerated approximately on the same level as those, who have worse work results. However, this constitutes one of the most vital demotivators (Türk, 2005). The employees are convinced that in spite of their efforts, more effective work and improvement of performance they still have no hope for promotion.

Librarians and specialists are extremely pessimistic about career opportunities within their libraries. Only 2% were certain about the availability of promotions, 4% of the respondents considered it likely.

4. Conclusions

The area of career satisfaction is quite unexplored field in Estonian university libraries. The problems (and bottlenecks?) in inter-organizational career management,

that emerge from this article, could be taken as a guidance for both library managers and employees.

Many librarians find their work full of opportunities for self-realization. Unfortunately, there are also those who do not feel that their work offers opportunities for self-realization and who do not have a chance to sufficiently implement their skills in their current position. Middle-aged and older personnel in larger university libraries have already occupied most of the leading positions, and therefore, personnel between the ages of 21 to 30 and 31 to 40 are unable to sufficiently apply their skills at the moment. There is also dissatisfaction among personnel aged 41 to 50. In brief, it is clear that the biggest problem lies in matter of fact that the younger librarians do not see any opportunities for promotion while they are the ones with higher expectations and goals in terms of work and career than their middle-aged and older colleagues. Most of the respondents wish that if vacancies occur, the management would look for candidates first from among the existing staff and only then if suitable employees have not been found they should start searching from outside the organization. This is currently not practiced and it is also one of the reasons why the respondents considered the promotion opportunities almost non-existent in their libraries. The general opinion is that improving one's performance does not bring along promotion.

Thus, the employees are not very motivated to improve their work results, which can cause poor productivity and performance.

The study, conducted in Estonian university libraries showed that there exist the necessity for intra-organizational career among librarians, but respondents do not see much options and possibilities for career advancements and promotion in their current libraries. The authors of this study recommend the managements of the university libraries in Estonia to take bolder action in analyzing personnel and staff developments and promotion plans; to build up an adequate and clear career system; and pay more attention to the organizations' internal reserves.

References

- DeCenzo; D., Robbins, S. (2005). *Fundamentals of Human Resource Management*. New York, John Wiley & Sons.
- Edem, U. S. (1999) "Issues in career advancement prospects among librarians in Nigerian universities", *Library Management*, Vol. 20 No. 2, pp.76 – 83.
- Gobbesso, C. (2003). Motivatsiooni olulisus ja selle mõju töösooritusele. Väärtuslik organisatsioon. Personali juhtimise konverentsi materjalid. Tartu, 3.-4. aprill.
- Hellriegel, D., Slocum, J., Woodman, R. (1989). *Organizational Behaviour*. St. Paul : West Publishing Company.
- Riikliku pensionikindlustuse seadus (State Pension Insurance Act), Vastu võetud 05.12.2001 RT I 2001, 100, 648, jõustumine 01.01.2002
- Ruigrok, W., Pettigrew, A., Peck, S., Whittington, R. (1999). "Corporate restructuring and news forms of organizing; Evidence from Europe", *Management International Review*, Vol. 39, Special Issue, pp. 41-64.
- Sepp, A. (2012). *Eesti arstide tööga rahulolu 2011 (Job satisfaction of Estonian physicians in 2011)*, Tallinn University of Technology, Tallinn.
- Sierpe, E. (1999). „Job Satisfaction among Librarians in English-Language Universities in Quebec“, *Library & Information Science Research*, Vol. 21, No. 4, pp 479–499.
- Türk, K. (2005). *Inimressursi juhtimine. (Human Resource Management)*, Tartu Ülikooli Kirjastus, Tartu.
- Wise, L. R. (1996). „Internal Labour Markets“, In: Bekke, H., Perry, J. L. and Toonen, T. A. (Eds), *Civil Service Systems In Comparative Perspective*, Indianapolis, Indiana University Press, pp. 100-118.

WHERE ARE HUMAN RIGHTS IN SCHOOL CURRICULA?¹

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Abstract

Universal education has been at the forefront of the orthodox development agenda for several decades and funds to implement access and quality improvements have been widely available as low cost loans and grants. In planning the content of education, states have not considered it difficult to allow their citizens the freedom to think. But official curricula in most states have not incorporated human rights and especially not Article 18 of the Universal Declaration of Human Rights. The difficulties start when we come to the right to express one's conviction, or the right to organize as a community in order to promote a religion or belief, or the right to act in accordance with one's conscience in cases where domestic legal systems seem to require uniform behavior irrespective of the different convictions of individuals. The real problem concerning freedom of religion does not concern the nucleus of the right itself (the freedom of an inner state of mind), but issues that also relate to other human rights. In this sense, freedom of religion gives clear evidence that human rights cannot be protected separately from each other but are realized only as a totality. If we are here to talk about the contribution of education to our shared future on earth, we must not shy away from religion. We exclude freedom of religion from the curriculum at our peril. If the United Nations gives Freedom of Religion or Belief its clear and prominent place in its catalog of rights, public schools give it the breath of life or the kiss of death. Given the wide range of religions that they inherently must accommodate and protect, public institutions of necessity must incorporate broadly tolerant and inclusive norms. And Article 18 defines Freedom of Religion or Belief as an inalienable and fundamental right equal to all others. But of what practical value is a right if a person does not know she or he has it? And why would they not know-- because they are not taught it. Our public education systems have failed us in this respect. In the case of freedom of religion or belief, in particular, students do not know about it because there isn't much religion in most human rights education and not much HRE in school curricula.

Keywords: *Human rights education, social justice, equality, freedom of religion, curriculum*

1. Introduction

Few areas of social and political life attract such intense concern and passionate attention as the religious education of each successive rising generation. This education is vital for the children themselves as they develop toward maturity and seek to understand the belief systems they have inherited, as well as the belief systems of others who share their immediate physical environment. How children come to view their own and others' religious traditions is a learned behavior, the province of education.

Religious education is also a matter of deep concern for parents (and those fulfilling parental roles), regardless of the religious (or non-religious) worldview that they may hold, because it can have such a deep impact on those they care about most. For children born to families belonging to religious minorities, the preparation of children to

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face an insecure and even hostile world is an essential ingredient of parental duties. For these reasons, religious education is inevitably a major issue for religious and political communities. The way that teaching of and teaching about religion is handled often triggers some of the most heated short-term political controversies. Human Rights Education (hereafter HRE) is less contentious but only in circumstances in which religion either is omitted or repackaged as conscience or belief.

2. Human Rights in International Law

Because all education is so closely linked to the shaping of individual identity, character, conscientious and religious beliefs, this domain is subject to modern society's most fundamental constitutional and human rights standards. These include the rights of children to education and to freedom of religion or belief (hereafter FORB);² and the rights of parents and legal guardians "to provide direction to the child in the exercise of [this] right;"³ and to "ensure the religious and moral education of their children in conformity with their own convictions."⁴ Rights of minority groups are also often at issue. Constitutions typically give states authority to establish and administer educational systems, but of all education domains, curricular matters are the most jealously guarded by the state.⁵

Among secular institutions, it is the United Nations that gives FORB a clear and prominent place as Article 18 in its Universal Declaration of Human Rights. Although the place of Article 18 in efforts of the UN to promulgate human rights through education is no longer secure, the general principle of HRE has been well defended in the past two decades. In 1993 the landmark UN Declaration on HRE was adopted and followed by the UN Decade for HRE.⁶

Given the wide range of religions that they inherently must accommodate and protect, global institutions of necessity must incorporate broadly tolerant and inclusive norms. While many doubt that today the Universal Declaration would receive sufficient support for affirmation among the larger and more inclusive roster of UN membership, it succeeded quite handily in 1948. And Article 18 defines FORB as an inalienable and fundamental right equal to all others and inherent in every person by virtue of membership in the human family. But of what practical value is a right if a person does not know she or he has it? And why would they not know--because they are not taught it. In the case of FORB, in particular, they do not know about it because there isn't much religion in most HRE.

3. Problems in the Application of Freedom of Religion and Belief

States have not considered it difficult to allow their citizens the freedom to think. The difficulties start when we come to the right to express one's conviction, or the right to organize as a community in order to promote a religion or belief, or the right to act in accordance with one's conscience in cases where domestic legal systems seem to require uniform behavior irrespective of the different convictions of individuals. The real problem concerning FORB does not concern the nucleus of the right itself (the freedom of an inner state of mind), but issues that also relate to other human rights. In this sense, freedom of religion gives clear evidence that human rights cannot be protected separately from each other but are realized only as a totality.

² Convention on the Rights of the Child, art. 14, adopted and opened for signature by the United Nations General Assembly Resolution 44/25 on 20 November 1989.

³ Ibid.

⁴ International Covenant on Civil and Political Rights, art. 18(4), adopted and opened for Signature by United Nations General Assembly Resolution 200A (XXI) on 16 December 1966.

⁵ For an overview of the range of such structures, see W. Cole Durham, Jr. and Brett G. Scharffs, *Law and Religion: National, International and Comparative Perspectives* (Austin, Boston, Chicago, New York and the Netherlands: Aspen Publishers, Wolters Kluwer Law and Business, 2010), 114-122; Javier Martínez-Torrón and W. Cole Durham, Jr., General Report, in *Religion and the Secular State*, *supra* note 2, at 8-16.

⁶ UN Declaration for Human Rights Education: HRE 1994-2005 (GA Res 49/184 Dec 1994).

Article 18 is short but was nevertheless endowed by its authors with the details of its application in human societies. It is these details which provide human context to the practice of religion that make Article 18 incompatible with any presumption of a national or state-sponsored religion as Special Rapporteur Heiner Bielefeldt concluded in his report of December 2011 to the United Nations.

*Indeed, it seems difficult, if not impossible, to conceive of an application of the concept of an official “State religion” that in practice does not have adverse effects on religious minorities, thus discriminating against their members.*⁷

The result of the application of the doctrine of FORB is a total freedom for members of both majority and minority religious groups, as well as the growing group of individuals who, when asked to state their religion preference, reply “none.” The right to change one's belief also figures prominently in the most recent report of the Special Rapporteur:

*Many States impose tight legislative or administrative restrictions on communicative outreach activities. Many such restrictions are conceptualized and implemented in a flagrantly discriminatory manner, for instance, in the interest of further strengthening the position of the official religion or dominant religion of the country while further marginalizing the situation of minorities.*⁸

3.1. Teaching about Religion in the Context of Human Rights Education

There are a few countries in which religion is systematically excluded from the discussion of human rights. This is typically found in settings where there are strong constraints on religion in general, such as Cuba or China, or where religious education of any type is either forbidden or effectively barred because of the nature of restrictions controlling the establishment of religious schools and because the state refuses to recognize religions other than those thought to be traditional or historical and of no threat to the state. High levels of restriction on religious education are also found where there is a particularly strong prevailing religion, or where there are intense fears of religious radicalism and extremism.⁹

In some cases, state regulations regarding curriculum are so pervasive that all school curricula look alike and it is difficult to discern the difference as a practical matter between state and private schools.¹⁰ In some systems, there are governmental attempts at rigorous regulation of the curriculum and administration of religious schools, but state regulation is not always effective at the local school level.¹¹

3.2. The Role of Religions in Human Rights Education

The *role* of religions in HRE is a very different topic than is the *place* of religion in HRE. And, frankly speaking, it is currently the more politically correct perspective. So it is, for example, that when one turns to a featured article in a recent SGI Quarterly magazine,¹² one finds what is essentially a call for the world's major religions to do more effective work in HRE. In this context, we find mentioned all types of injustices, such as “oppression,” “marginalization,” and “disempowerment,” but no mention of FORB. We find in this article a call for unity of faiths around the topic of human rights education but no acknowledgement that many people of faith struggle to exist at all, to worship freely and to live free of persecution and oppression. Both perspectives are, of course, perfectly acceptable and essential. Nevertheless, one does not need to spend

⁷ Report of the Special Rapporteur on Freedom of Religion or Belief, Heiner Bielefeldt, Human Rights Council, Nineteenth session, December 11, 2011, (A/HRC/19/60), page 18.

⁸ Report of the Special Rapporteur on Freedom of Religion or Belief, Heiner Bielefeldt, General Assembly, Sixty-seventh session, 13 August 2012, (A/67/303), page 21.

⁹ For example, China and Cuba.

¹⁰ For example, Kazakhstan, Malaysia.

¹¹ For example, Pakistan and Turkey.

¹² SGI Quarterly, October 2011, Human Rights Education Today, page 12.

significant amounts of time inside the *Palais des Nations* to realize where the energy and focus reside and what are acceptable modalities of HRE work.

About eighteen months ago, as I was becoming acquainted with the United Nations of Geneva, I attended a reception for newcomers where I was introduced to the ambassador of an important state delegation. He inquired about the nature of my interests. I told him it was FORB, being careful to use the official human rights language of the United Nations. A deeply furrowed brow led me to believe he had not understood—perhaps my American English was to blame. I rephrased, “You know, Article 18—FORB.” “Oh yes,” he then acknowledged, “Now I understand. You will be working with matters related to freedom of conscience.” Naively and certainly not yet grasping the arcane diplomatic art form of politically correct language, I replied, “Yes, although our particular concern is with freedom of organized religion—you know freedom to assemble, construct houses of worship, to print and distribute religious literature, proselyte—that sort of thing – as well as freedom to have no belief.” Now puzzlement turned to mild disdain, the furrowed brow deepened, and with that the ambassador excused himself to find another newcomer to greet.

3.3. Religion Has Legal Status in Human Rights But Must it be Included in HRE?

FORB must be included in HRE. Stepping back from the difficult practical realities of designing and implementing HRE inclusive of religion, it is clear that religion lies at the intersection of three institutions: the family, religion and the state. It cannot avoid being affected by the process of secularization, and social processes aimed at countering secularization. Indeed, it is a focal point of “culture war” pressures on these issues. At the same time, HRE plays a critical role in the ongoing process of restructuring each society across successive generations. Religion has an interest in HRE because it is vital to the continuation of religious traditions over time. States have differing interests in HRE, in part for short-term reasons involved with garnering political support within society, but also for larger reasons including the cultivation of an ethical citizenry. HRE is inevitably affected by state policies that may aim at integration and assimilation of religious minorities, or cultivating respect for diversity and multiculturalism. Families’ interest in HRE, as it pertains to religion, incorporates an extensive range of broadly shared hopes and aspirations for their children. Families who are religious minorities and whose children are educated by the state hope that their children will be not merely be tolerated but accepted and treated by teachers and peers with respect and dignity.

The reality is that there are no modern societies that are completely homogeneous religiously. The ease of travel, the pull of economic opportunity across borders, population shifts due to war, and varying birth rates, as well as other factors, have all combined to create a world in which every country has substantial religious diversity, including a growing percentage of the population that lacks religious belief or is religiously indifferent. There may be one or several religions that constitute the belief system(s) of the majority of the population, but still there is likely to be a large number of distinct religious beliefs in the country.

4. What Does This Mean For Secular School Education and For Human Rights Education?

Education systems cannot avoid taking religious differences into account. What this means for world culture or world history courses is that if public schools engage in teaching about people and popular culture, all religious traditions must be taught. It means that when teaching about religion, accurate, sympathetic and respectful language must be used. It means that in designing HRE, FORB must receive measured attention. Inevitably, religious differences will lead to tensions, and the broader social tensions are as likely to arise in educational contexts as elsewhere.

Thus, for example, there are tensions between those who adhere to traditional Islamic practices, such as wearing the various forms of Islamic head coverings, and those who adhere to more contemporary belief systems. It is not surprising that such issues relating to clothing can come to be seen as symbols of religious devotion or, alternatively, as symbols of religious oppression. It is equally unsurprising that these issues find their way into court cases in country after country. A stream of lawsuits such as *Dahlab v. Switzerland*, *Şahin v. Turkey*, *Dogru v. France*, and countless others, are representative. Similarly, there are tensions between religious believers and those without religious belief, which take the form of disputes over the place of religious symbols in public space. The controversy over the display of crucifixes in Italian schools in *Lautsi v. Italy* is typical of numerous cases on this front.

The reality of religious difference is here to stay. The underlying tensions are profound and real, and we ignore them at our peril. States can seek to deal with such differences either by repressing them or by finding effective ways to accommodate them. As the European Court stated in *Serif v. Greece*, in a line that has been quoted in numerous decisions since, although it is true

that tension is created in situations where a religious or any other community becomes divided, . . . this is one of the unavoidable consequences of pluralism. The role of the authorities in such circumstances is not to remove the cause of tension by eliminating pluralism, but to ensure that the competing groups tolerate each other . . .

¹³

5. Freedom of Religion or Belief and a Culture of Mutual Respect

School education in general, HRE and religious education all play important roles in forming a culture of respect that goes beyond mere tolerance. There are many ways that countries around the world have wrestled with the issue of promoting tolerance and, more importantly, mutual respect among those holding diverse religious and secular beliefs. While some states continue to see religious pluralism as a threat to stability, the road to peaceful and abundant societies requires finding effective ways to respect divergent beliefs. By providing a broader and deeper understanding of the way this is accomplished in different educational systems, HRE can make a significant contribution to building sensitive, accepting and respectful societies.

The question stated in the title of our paper “Where Are Human Rights In School Curricula?” will not, for empirically oriented social scientists, have been satisfactorily answered in this presentation. Indeed we have made no serious attempt to survey school curricula for the presence of a human rights component or the inclusion of FORB in HRE. We suspect, but have not empirically demonstrated, that the best answer to the question is that human rights are generally absent, and where present, freedom of religion or belief has gone missing in the catalog of protected rights. There are many dedicated educators in countries throughout the world who are earnestly trying to reverse the situation so that when another future roll call is taken, “present” will be heard in classroom everywhere.

References

Durham, W. Cole, Jr., & Scharffs, B. G. (2010) *Law and Religion: National, International and Comparative Perspectives*. Austin, Boston, Chicago, New York and the Netherlands: Aspen Publishers.

¹³ *Serif v. Greece* (ECtHR, App. No. 38178/97, 14 December 1999), § 53.

THE APPROPRIATE MODEL OF GRADUATE STUDIES FOR THE ASIAN COUNTRIES

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Abstract

This research was on the model development for graduate studies which were appropriate for the ASEAN countries. The model achieved from this research can be used as a guideline to strengthen ASEAN education. The objectives were to study cultural, economic, and political contexts and connections among the ASEAN countries and to use cultural, economic and political dimensions in developing a model for educational cooperation in offering graduate studies. Embedding mixed methods were applied with both quantitative and qualitative research. It was found that there were similarities and differences in terms of the cultural context, which included geographic conditions, historical and political contexts, economic situations, international relations, problems and obstacles among the ASEAN countries. Such contexts determined similarities and differences and brought about acceptance and rejection among these countries. When these factors were considered in relation to developing educational cooperation, it was found that some similarities were in religious beliefs, some culture and tradition etc. Economic situations were different, but they were based on regional cooperation, and the existing projects demonstrated clear directions in education, which were more appropriate than cooperation with countries in other regions. Although political differences were found, they were not a significant barrier for cooperation among the ASEAN countries. For cooperation, it was important that all countries must share the same awareness of the cooperation without any prejudices in terms of minority groups and their historical background. About the appropriate model of graduate studies for the ASEAN countries, the research findings indicated that under the condition that they understand cultural, economic, and political contexts, all ASEAN countries are capable of offering graduate studies, depending on each country's expertise and readiness to offer the courses. Some countries may be ready in one field while others may offer more than one field at a time. Most importantly, each country must have a central organization with a database in education. Such an organization can be newly established or the existing one can be used to serve this function. The database must link to national and international databases, where all countries can retrieve all data to study.

Keywords: *The appropriate model, graduate studies, the ASEAN countries*

1. Introduction

The relationships between the factors of the current international society are something undeniable. What is clearly seen is that the development of modern information technology and communications has shrunk the world and brought about globalization. This phenomenon has impacted economic, social, politic, and educational development in terms of both cooperation and competition. In a competitive society, those who find access to information first have more opportunities than others. Economic growth of international trade has expanded both in terms of quantity and types. International trade has become more liberal. World Trade Organization or WTO was established to oversee the trade among the member countries to ensure free and fair trade as much as possible. The trade includes commodities and such services as tourism, education, and public health (Office of National Economic and Social Development Board. 2005.B1-B2). It could be clearly

seen that during the last decade, such countries as the United States of America, the United Kingdom, Australia, and New Zealand proactively set forth educational marketing strategies. Academic markets and exhibitions were held in many countries including Thailand. South-East Asian countries such as Malaysia and Singapore are well-prepared to be an educational hub in this region.

As cutting-edge communications in globalization increasingly affects changes in learning and development, knowledge and learning become one of the most important factors in developing and strengthening the competitive potential of a country. In the countries with the world's leading economic power, between knowledge and resources, balance declines to knowledge so much that knowledge is the most important factor to determine standards of living. It is more important than land, instruments, and labor force (Office of National Education Board. 1999: 1-3). Education has become one of the most important factors in the development of a country and also in developing strengths of the regional countries through various ways of cooperation.

This research was on the model development for graduate studies for the ASEAN countries, focusing on each country's expertise, limited only the GMS countries in the contexts of good understanding and exchange of knowledge in the cultural, economic, and political dimensions. This would enhance expansion of cooperation and understanding and lead to other kinds of the ASEAN countries' development. The model achieved from this research would be used as a guideline to strengthen education of the regional countries. It could be adapted and implemented by ASEAN students in choosing to study in the countries of the same region instead of overseas countries in the far regions such as Europe or North America. This was financially useful and could also reduce tension caused by culture shock. The impact of this research implementation would be on strong economy, culture, and education of the GMS countries.

2. Research Objectives

1. To study cultural, economic, and political contexts and connections of the ASEAN countries and to use cultural, economic and political dimensions in developing a model for educational cooperation in offering short-term training courses.

2. To develop an appropriate model for educational cooperation in offering graduate studies of the ASEAN countries, based on cultural, economic, and political understanding.

3. Scope of Study

1. Scope of contents and research methodology. This research focused primarily on studying study cultural, economic, political, and educational contexts of the GMS countries including the People's Republic of China (Yunnan and Guangxi Regions), Myanmar, Vietnam, Laos, Thailand, and Cambodia. Then, analysis and synthesis of the cultural, economic, and political connections of these countries were done. After that, a guideline was presented, indicating how culture, economy, and politics could be used to develop cooperation which would lead to achievement of an appropriate model to be an educational hub for the neighboring countries.

2. Scope of area: It covered the areas of the GMS countries: the People's Republic of China (Yunnan and Guangxi Regions), Myanmar, Vietnam, Laos, Thailand, and Cambodia.

4. Research methods

Embedding mixed methods were applied with both quantitative and quantitative research. The qualitative methodology was mainly used to explain the phenomenon

which answered the research questions while quantitative methodology was used to reinforce clearer answers to the research questions.

5. Research results

1. There were similarities and differences in terms of the cultural context, which included geographic conditions, historical and political contexts, economic situations, international relations, problems and obstacles among the ASEAN countries. Such contexts determined similarities and differences and brought about acceptance and rejection among these countries. When these factors were considered in relation to developing educational cooperation, it was found that some similarities were in religious beliefs, some culture and tradition etc. Economic situations were different, but they were based on regional cooperation, and the existing projects demonstrated clear directions in education, which were more appropriate than cooperation with countries in other regions. Although political differences were found, they were not a significant barrier for cooperation among the ASEAN countries. Different political situations only impacted each country's development. For cooperation, it was important that all countries must share the same awareness of the cooperation without any prejudices in terms of minority groups and their historical background. Without taking advantage, sincerity to each other should be focused. In addition, the identity of each country, culture and tradition, including differences in political systems must be carefully considered. Regarding economy, the supports given as friends should be encouraged without competing with and taking advantage from each other. Moreover, cooperation must fill the gaps in social justice and the ethics of globalization. The expression of feeling superior to the neighboring countries must be totally avoided so that balanced trust could be achieved, enhancing sustainable cooperation.

2. The appropriate model of Graduate Studies for the ASEAN countries possessed the characteristics of being a database or data center, giving such services as expertise sources. The model was appropriate to develop ASEAN personnel with arranged schedules. The stages of operation are as follows.

2.1 Each country sets up a central organization with a database in socio-culture, economy, politics, and education with appropriate schedules of sessions, offering the graduate courses with SEMEO RIHED acting as a coordinating organization.

2.2 The conclusion has been made after each session, all countries join and support publicizing curriculums and formats of studies so that learners or scholarship granters of each country make a decision on choosing a university.

2.3 Various universities offer graduate studies. There are students granted scholarships or those with certain expertise and knowledge choosing to randomly study the outstanding fields of each university. Coordination between personnel of the host country and those of the students' home country is executed in developing students and strengthening body of knowledge in those fields. Moreover, cooperation and good understanding among the GMS people is developed.

2.4 Students do research or a thesis while studying, focusing on practicing in a real situation. The development of cooperation and understanding among the GMS people is done through academic processes with cooperation between thesis advisors of the two countries.

2.5 At times, students and advisors participate in implementation of the research or thesis findings. The students graduate with high quality thesis of which the contents can be implemented in the real situation with local contexts.

2.6 Apart from high quality thesis and new body of knowledge, the students' research is beneficial for the ASEAN countries in the following aspects. Firstly, the development of each country's outstanding field may lead each university to a better ranking. Secondly, the important one, cooperation and better

understanding among the regional people are developed through educational processes based on socio-economic, cultural, and political understanding and relations.

2.7 The data gained from educational processes are sent to SEMEO RIHED and the coordinative organization of each country.

6. Suggestions

1. Suggestions for organizations responsible at a policy level including SEMEO, each country's ministries, departments or central organization.

1.1 This research should be used as a guideline to develop a data center for educational data, cooperation, and services for the more benefits of the regional people.

1.2 The cooperation issues chosen are direct religious studies or those related to Buddhist studies, traditional or modified agricultural studies, cultural tourism, language studies, studies of globalization domination crisis, and learner-centered Buddhist doctrine studies.

1.3 In terms of educational database, currently, some countries' data may be different from those of others. Therefore, if suggestions made by the model achieved are adopted, in each country, there should be an appropriate and potential central organization chosen to provide full graduate studies' data.

2. Suggestions for higher education institutions

2.1 The current higher education institutions must urgently develop internationality or sub-regional cooperation. MOU signing of several universities are not fruitful. Focuses should be on the real cooperation in action.

2.2 Higher education institutions should develop information access technology, which, nowadays, is one of the important elements in learning and choosing the right university to study.

2.3 The networking for relationship and collaboration among ASEAN universities should be established based on suitability of each context.

3. Suggestions for further research

3.1 Further research should be done on the experiment of the model of graduate studies.

3.2 There should be co-research development among ASEAN countries on issues which promote education development and on the efficient implementation of the research findings.

References

Office of the National Education Board. (1996). *Knowledge for Development*.

Bangkok: Teachers' Council Trade Organization.

Office of the National Economic and Social Development Board. (1995). *Research Report on Project on Research to Enhance Thailand's Role as a Regional Education Hub*. Bangkok: Office of the National Economic and Social Development Board.

LEARNING THAT MAKES A DIFFERENCE: PEDAGOGY AND PRACTICE FOR LEARNING ABROAD

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Abstract

As we step into the 21st century human society faces significant new challenges. In light of these challenges, there is a great opportunity, and a great need, for education that “makes a difference.” This article presents an overview of the literature on the global trend to internationalize the higher education curriculum and briefly highlights some of the key pedagogical concepts established in the work of pedagogical trailblazers John Dewey, Paulo Freire and Jack Mezirow. Finally, the paper concludes with a synthesis of these pedagogical models and a discussion of how, when applied to the context of international learning experiences. They have the potential to support transformative learning that “makes a difference” in how students think about and engage with complex global issues.

Keywords: *Learning abroad, pedagogy, globalization, synthetic approach*

As we step into the 21st century human society faces significant new challenges surrounding issues in human health; global security; environmental devastation; human rights violations; economic uncertainty; population explosion and regression; recognition of diversity, difference and special populations at home and abroad. In light of these challenges, there is a great opportunity, and a great need, for education that “makes a difference.”

UNESCO defines the internationalization of higher education as “the variety of policies and programs that universities and governments implement to respond to globalization. These typically include sending students to study abroad, setting up a branch campus overseas, or engaging in some type of inter-institutional partnership” (Altbach, Reisberg, & Rumbley, 2009). As universities and colleges increasingly promote learning abroad programming, there is an urgent need to establish best practices and programming models that support student learning while avoiding neo-colonial tendencies of patronization and cultural hegemony.

Through a synthesis of some of the key pedagogical concepts established in the work of pedagogical trailblazers John Dewey, Paulo Freire and Jack Mezirow, this paper proposes pedagogical framework that, when applied to the context of international learning experiences, has the potential to support transformative learning that “makes a difference” in how students think about and engage with complex global issues.

1. Pedagogy and practice for learning abroad: a middle ground for international development?

The writings of John Dewey (1859-1952), Paulo Freire (1921-1997), and Jack Mezirow (1927-), have had a profound influence to discussions on transformative learning and education for social change (Cranton, 1994, p. 48; Jarvis, 1987, p. 87; Westbrook, 1993, p. 277). Dewey was particularly interested in the relationship between education and participatory democracy and emphasized engagement with the

curriculum through personal experience (Dewey, 1969 [1897], 1978 [1903]). Freire (2005 [1970]) understood education to be a political act with the capacity to emancipate people from oppression and transform society. Following Freire, Mezirow has continued to develop a theory of emancipatory education (1991, 1997, 2000) that leads to personal transformation. Taken together, these themes can be applied to help “make a difference” to students and the societies in which they operate by getting learners to critically engage, reflect on, and act in response to complex global issues. In particular, the authors emphasize the concepts of culturally embedded and experience-based learning followed by opportunities for reflexivity, critical reflection, and dialogue that can lead to a greater sense of agency and transformative action. Comparisons between Dewey, Freire, and Mezirow show where these ideas overlap and diverge and situate them within the particular socio-cultural context from which they developed.

Given their shared premise that an inextricable link exists between education and society, a synthesis of key ideas developed by Dewey, Freire and Mezirow (that has been sustained and developed further by many others) suggests a good starting point for thinking about the current trend toward learning abroad as a means to preparing students to engage the complexities of global society. A synthetic approach preferences co-intentional learning between the student and partners abroad, opportunities for on-going reflection and dialogue, and a supportive context for a potentially transformational learning experience. This framework would facilitate the development of student’s *conscientization* and situate it beyond themselves into broader society through their own critically informed action plans for dealing with particular concerns and, more generally, for shaping and upholding values through which they will live their lives. This is an opportunity for learning that really makes a difference both in the frames of reference of the students and in the social contexts wherein they engage.

Education for Dewey, Freire and Mezirow is a deeply embedded social institution – regardless of whether it develops through subconscious cultural inheritance or in state sanctioned institutions. Of the three, Dewey places greatest emphasis on progressive interaction between the individual’s self-development and the common good (Dewey 1981). Freire is most concerned with education that raises awareness (*conscientization*) and challenges an oppressive framework. Mezirow is particularly interested in the emancipatory potential of an education that transforms the learner and facilitates their autonomy and sense of agency beyond the classroom (Mezirow 1981, 1990).

Dewey, Freire and Mezirow all presuppose a constructionist view of society (Dewey 1897, Article One; Freire 1979, 50-51; Mezirow 2012, 76-77). They understand that human beings are simultaneously creators of their world even as the world they create acts back on them to inform their experiences and shape their understanding (Berger, 1967; Berger & Luckman, 1966). They are attuned to the socio-cultural positioning of knowledge acquisition and its embeddedness in human experience within family life and one’s cultural setting. They share an understanding that learning should be united with authentic, relevant experience and have a practical goal for effecting positive change in individuals and society by 1) endorsing and perpetuating a understanding and prioritization of the common good (Dewey), 2) critiquing and informing ideas about the common good (Freire), and 3) empowering individuals to act for the common good by developing better understanding of their own and other’s rights and experiences within it (Mezirow). All of these writers see in education both an opportunity and a responsibility.

In the particular realm of learning abroad, the opportunity is for creating a supported learning experience that allows students to undergo a participatory and collaborative experience outside their everyday environment, discuss and critically reflect upon that experience, and eventually, develop an action framework for mindfully responding to their experience. In this process, learners – whether students, professors, or partners abroad, can co-create the social fabric of our world by

“developing capacities of critical reflection on taken-for-granted assumptions that support contested points of view and participation in discourse that reduces fractional threats to rights and pluralism, conflict, and the use of power, and foster autonomy, self-development, and self-governance – the values that rights and freedoms presumably are designed to protect” (Mezirow 2012, 91). The potential effects of such an experience have ramifications for every area of our world from how we deal with our environment to how we think about poverty.

The responsibility lies with the institutions offering these programs to establish an environment of “revolutionary” learning that allows all parties involved to engage in dialogue that can help them to comprehend “both their *objective situation* and their *awareness* of that situation—the various levels of perception of themselves and of the world in which and with which they exist” (Freire 2005 [1970], 95). As such, educators and students must be willing to consider not just the advantages to themselves for participating in such programming, but also the potential for harm to others in pursuing their learning goals. Thus students should be helped to examine and critique their *positionality* in the learning experience both at home and abroad so that they might truly arrive in the foreign learning environment as *co-learners* rather than *oppressors*. To do otherwise is to participate in what Freire describes as “cultural invasion” (Freire 2005 [1970], 152).

By becoming aware of our positioning within the educative process as both objects and subjects we can be made mindful of that positioning in relation to others. Dewey’s broad philosophical conception of participatory democracy identifies the interconnectedness of all human beings as a fundamental aspect of human society (Dewey, 1969 [1897], pp. 237-238). Thus we see in all three authors a fundamental concern that learning occur as a collaborative exercise that benefits not only a privileged learner but also protects and upholds the rights of those who work in concert with her both at home and away.

The opportunity and responsibility of education becomes particularly poignant in the context of learning abroad where students are often engaged in foreign learning environments as privileged outsiders. They arrive at their internship, language learning center, homestay or volunteer or paid employment as relatively wealthy, educated, non-natives, who may not speak the language or have prior experience with the cultural norms or conditions of the place. There is much potential for paternalism and “cultural invasion” between the student and partners abroad in these opportunities. Thus there is also an indisputable responsibility on the part of the sending organizations, educators and participants to take steps to avoid generating learning experiences that benefit one partner while oppressing and subjugating the other.

2. A synthetic approach

At the most basic level, drawing on the core ideas identified in Dewey, Freire and Mezirow, all learning abroad programming should incorporate the following four points of praxis for learning abroad. Ideally each program should be further nuanced and particularized to accommodate the learners, the type of experience abroad, and the community partners with whom students will co-learn. These points offer a starting place for thinking about further fine-tuning that will ultimately benefit all parties.

2.1 Intentional, guided inquiry

Educators should facilitate student preparation for learning abroad by exposing them to learning materials and social contexts that are personally and culturally relevant to them and their goals for going abroad. This first step serves as a means to identify and critically assess their own frames of reference, values, and assumptions before interacting with hosts abroad. This step might entail reading about their learning environment, meeting with individuals from a different part of the world, or engaging in

activities similar to those they will experience abroad. Alternatively, participating in activities that will simulate the social dislocation and disorientation they might experience going into the international setting or a foreign language environment are helpful settings for stimulating critical self-reflection.

2.2 Critically reflexive interaction

Students should engage in the discursive process of challenging, reassessing, critiquing, adapting and expanding their newly identified habits of mind with a view to understanding how they might help or hinder learning in the international setting and also how these might impact partners abroad as a culturally invasive or oppressive point of view; this process should be facilitated by an educator prepared to attend to students' intellectual and emotional responses to their experiences and willing to help students explore alternative responses for understanding their learning journey. Students should be helped to pursue an attitude of humility and unpretentiousness as they enter the host environment.

2.3 Dialogical conscientization

Building on the thoughtful openness developed in stage two, once in the foreign learning environment, students should have opportunities to continue the process of critical reflection and dialogue with their collaborators abroad. This may include obtaining new knowledge, having new experiences that confirm or overturn previously held assumptions, and engaging in dialogue that permits a critical assessment of one's psycho-emotional responses to those experiences. Even in the absence of local collaborators, students can continue the process through journal writing and correspondence with other learners.

2.4 Action oriented re-framing

Finally, students should be supported on their return through a continuation of the critically reflective and discursive process and helped to develop new frames of references that can be sustained in their everyday lives. In this stage they should be encouraged to track the development of their own awareness, identify new competencies, acknowledge cognitive or emotional challenges resulting from the experience abroad, and begin to identify competencies that might facilitate active responses to the new perspectives developed in the learning process.

As a progressive sequence that seeks to be empowering and non-oppressive, the entire learning experience must be undertaken in a context of solidarity between the educator, the student, and partners abroad. Students must be helped to move beyond egoism and humanitarianism, partners abroad should be empowered to act as co-educators and co-learners rather than objects to be used for a privileged foreigner's learning experience, and educators must be willing to lead without dominating. In this model the learning experience becomes a culturally-relevant, socially-situated, collaborative process of empowerment.

3. Conclusion

Globalization, transnationalism and internationalization have become hallmarks of the 21st century. Recent regional and global events such as the youth riots in the United Kingdom, civil unrest across the Arab world, the Occupy incidents, and other events are prominent examples of the various social, economic and political challenges we now face. They are also powerful reminders of why we need to ensure our young people have meaningful, well-informed opportunities to engage critically with global perspectives. The insights students develop in learning abroad programs have

implications for global interests by helping them to engage some of the most complex problems facing 21st century societies.

Students who participate in international learning programs, many of which are based in the developing world and expose them to some of the challenges identified above, can gain the advantage of first-hand experience with some of these concerns. However, without a robust and carefully-considered pedagogical framework for reflecting on and interpreting their experiences abroad, students will be no better equipped to understand or engage with these complex problems. Furthermore, inadequate preparation may result in students developing unfair, misinformed or even oppressive interpretations of the social contexts in which they are learning. Educational institutions offering learning abroad programming have an obligation to deliver them within an appropriate framework of pedagogy and practice that can facilitate engagement between the student and the host community, provide opportunities for on-going reflection and dialogue, and support the student through a potentially transformational learning experience.

References

- Altbach, Philip G., Reisberg, Liz, & Rumbley, Laura E. (2009). *Trends in global higher education: Tracking an academic revolution*. A report prepared for the UNESCO 2009 World Conference on Higher Education. Paris: UNESCO.
- Berger, Peter. (1967). *The sacred canopy*. Garden City NY: Anchor Books.
- Berger, Peter, & Luckman, Thomas. (1966). *The social construction of reality: A treatise in the sociology of knowledge*. Garden City NY: Anchor Books.
- Cranton, Patricia. (1994). *Understanding and Promoting Transformative Learning: A Guide for Educators of Adults*. San Francisco: Jossey-Bass.
- Dewey, John. (1897). My pedagogic creed. *School Journal*, LIV(3, January 6), 77-80.
- Dewey, John. (1969 [1897]). The ethics of democracy. In J. A. Boydston (Ed.), *The Early Works of John Dewey, 1882-1888* (pp. 237-246). Carbondale IL: Southern Illinois University Press.
- Dewey, John. (1978 [1903]). Democracy and education. In J. A. Boydston (Ed.), *The Middle Works of John Dewey, 1899-1924* (Vol. 3, pp. 229-239). Carbondale IL: Southern Illinois University Press.
- Dewey, John. (1981 [1934]). Can education share in social reconstruction? In J. A. Boydston (Ed.), *The Latre Works of John Dewey, 1925-1953* (Vol. 9, pp. 205-209). Carbondale IL: Southern Illinois University Press.
- Freire, Paulo. (2005 [1970]). *Pedagogy of the Oppressed* (Myra Bergman Ramos, Trans.). New York NY: Continuum.
- Jarvis, Peter. (1987). *Adult Learning in the Social Context*. London: Croom Helm.
- Mezirow, Jack. (1981). A critical theory of adult learning and education [Electronic version]. *Adult Education*, 1(3-24).
- Mezirow, Jack. (1990). *Fostering Critical Reflection in Adulthood*. San Francisco CA: Jossey-Bass.
- Mezirow, Jack. (1991). *Transformative Dimensions of Adult Learning*. San Francisco CA: Jossey-Bass.
- Mezirow, Jack. (1997). Transformative learning: Theory to practice [Electronic version]. *New Directions for Adult and Continuing Education*, 74(summer), 5-12.
- Mezirow, Jack. (2000). *Learning as Transformation: Critical Perspectives on a Theory in Progress*. San Francisco CA: Jossey-Bass.
- Mezirow, Jack. (2012). Learning to think like an adult: Core concepts of transformation theory. In E. W. Taylor & P. Cranton (Ed.), *The Handbook of Transformative Learning: Theory, Research and Practice*. San Francisco CA: Jossey-Bass.
- Westbrook, Robert B. (1993). John Dewey 1859-1952. *Prospects: the quarterly review of comparative education (Paris, UNESCO: International Bureau of Education)*, xxiii(1/2), 277-291.

REPRODUCTION OF INEQUALITY THROUGH OUTSIDE-SCHOOL EDUCATION

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Abstract

This paper aims to explore economic and social implications of educational activities taking place outside formal school education. Parallel to the marketization of all public services, private education has become an essential part of education systems across the world. As an important element of this transformation process, out-of-school education has also become prevalent worldwide; however, its forms, extent and impacts vary significantly from country to country. While it has traditionally been used as supplementary to formal school education, its use in enriching forms has been causing additional problems especially in certain countries. While education has traditionally been perceived as an equalizer in societies with different levels of income levels and social stratification, various forms of outside school learning have been creating opposite effects. Turkey is among the countries, such as Greece, South Korea and Brazil, where outside school education is used mainly for enrichment purposes in order to prepare for centrally organized exams. These exams have become widespread at all levels of education, primary, secondary, tertiary and even afterwards in the last few decades in Turkey. Overwhelming scope of central examinations in the education system of the country has provided the grounds for the education institutions operating outside school such as private tutoring centers, and preparatory courses. Almost all students attend private tutoring centers at some point during their education, at one level or another, for the hope in attending elite schools and universities. As expected, the ultimate purpose is to achieve a well paid job and a comfortable position in life. However, most cannot go so far, since only between 10 and 20 percent of exam takers get into four-year universities and only a very limited number succeed in getting well-paid jobs, due to high competition in both university entrance and labor market. This paper argues that, with the diversity they created, and disparity in access among different social classes, outside school education contribute immensely to the reproduction and deepening of inequalities in Turkey, not only among the students and their families, but also among teachers, thus supporting social injustice at numerous levels in all realms of the society. Drawing on literature and data from similar countries along with Turkey, this study focuses on the economic and social incentives to identify socio-economic implications of the phenomena under investigation. It intends to shed light on the complexity of the issue, beyond the framework of economic supply and demand model.

Keywords: *Outside-school education, private tutoring, preparatory courses, social injustice, Turkey.*

1. Introduction

A variety of educational activities, taking place outside school have increased enormously across the world in the last few decades. In some countries, these activities have become so competing with formal education that, a new concept called "shadow education system" has been added into the literature (Stevenson and Baker, 1992). The term was inspired by the research conducted in the beginning of 1990s regarding outside school education in Malaysia, Japan and Singapore (Bray, 2010).

Along with Greece, South Korea and Brazil, Turkey makes the top list of countries where a big proportion of school children attend private tutoring centers

(PTC) and/or take private tutoring lessons. PTC's have become so crucial in the exam preparation that, according to the Turkish Higher Education Strategy Report of 2007, more than 70% of the students attend these centers, while about 17% of them take private tutoring lessons, in addition to attending PTC's (Keskin Demirer, 2012: 56).

Significant changes have been taking place in Turkey since the 1980s with the implementation of neoliberal politics as in many other corners of the world. Turkey's education system has been one of the most affected areas in this process which implies a paradigm shift from public to private not only in education but also all other public services. Due to the nature of education as a social phenomenon, this shift has also become the source of many other changes in the society. Various forms of "paid education" have become widespread along with many other new consumption trends during this period leading to tremendous stress among children, the youth and their families.

As an important center of attraction in the current phase of capitalism which needed new capital accumulating areas, education provided a useful ground. *General Agreement on Trade in Services* (GATS) which was signed in 1995 by all the members of the World Trade Organization (WTO) brought about radical changes in the perceptions regarding public services including education systems in those countries. By signing this agreement in 1998, Turkey has accepted the binding rules of GATS, which meant marketization of the public services such as health and education. Following GATS, Ninth Development Plan and the First National Education Strategy Plan of Turkey both of which together cover the period between 2007 and 2014 opened the way to put GATS' rules into practice (Keskin Demirer, 2012: 54-55).

It is commonly agreed that, education plays an important role in transferring inequalities from generation to generation where quality public education is not prevalent. In Turkey, due to the efforts to establish a public education system since the founding of the Turkish Republic, upward social mobility had been somewhat possible, meaning the children of poor families would have the chance to climb up the socioeconomic scale, thus securing power and status in the society at one level or another. In fact, "[p]rior to 1980, the Ministry of National Education was hostile toward private education of all sorts, which it viewed as an attack on the foundational principles of the republic and the role of education in creating national culture by inculcating the duties of citizenship" (Rutz and Balkan, 2009: 5). However, various reflections of general policies along with certain practices within the Turkish education system, especially since the 1990s, have been reversing this process. Today, while lower class parents face the reality of not being able to push their children up the social class scale, middle class parents worry about not being able to retain their class position for their children. Outside school education along with various practices of privatization within public schools provide substantial examples of this process.

2. Theory, Research and Discussion

Outside school education had been available for a limited part of the population until the 1990s, because private tutoring centers most of which were called *dershane* were opened only in cities, serving a limited number of students. For example, the number of PTC's was only in 100s in the 1970s, and 1980s (157, and 174, respectively). However, these centers became available for lower income families after the 1990s, reaching over 1.000s by the mid 1990s, and then 2.000s in the 2000s. Today the number goes over 4.000, with over 50.000 teachers and 1.5 million students (YÖK, 2008 and MEB, 2010).

As can be understood, outside school paid education has become a huge sector attracting all sections of society through various forms of products and prices. This would look like a positive development, as claimed by the owners of such entities. However, variety in products leads to different outcomes for the receivers of these products. In other words, outside school education is not only the shadow of the formal

education system but also a reflection of its inequalities, even in a more profound way. Thus, this shadow education system becomes another realm to reflect and reproduce different levels of welfare and inequalities in the society. While the number of students who attend private tutoring centers increases, educational expenses per student vary significantly. While some students benefit long term private tutoring at relatively better PTC's and take one to one tutoring additionally, the majority attend less expensive, crowded PTC's for short terms. Similarly, while first group of the students benefit from relatively well paid and experienced teachers, the students of the second group are thought by lowest paid and less experienced teachers. At the end, all of these students have to take the same exams, whether preparing for high schools or universities, in which case one cannot expect the same outcome from the two groups.

A number of studies show that, private tutoring expenses increase parallel to the levels of education and income (Kim and Lee, 2004; Smyth, 2008). The Turkish case proves this argument. Tansel and Bircan found out that 73% of private education expenses were made by the wealthiest 20% of the Turkish society in 2002 (Tansel and Bircan 2004: 2,10). According to a survey conducted by the Turkish Statistical Institute (TÜİK), 39% of young people between the age of 18-24, who left the education system early stated that they left the school due to economic reasons. Adding another 4% who claimed that they left the school to enter the workforce, a significant percentage of young people leave school for economic reasons (TÜİK, 2006: 148).

Competitive exams in Turkey at all levels of the education system, starting from the primary school force parents to spend more and more on education, making it the biggest expense item on the household list of expenses. According to the same survey mentioned above, one third (32.85%) of the total educational expenses were made by households in 2002. The ratio of private educational expenses to the GDP was 2.5% in the same year, nearly double the OECD average (1.3%). Furthermore, the amount of private expenses allocated from the GDP of Turkey is more than those of the countries such as the US and the UK. Therefore, the gap between the children of families who can afford to spend more and those who have limited resources widens while climbing the educational ladders.

Another study, which aimed to find out whether private tutoring is beneficial, and how it affects equality in education and income mobility between generations, supports the argument mentioned above. The study used the results of a survey conducted by the Turkish Higher Council of Education in 2002 with the 10% of 1.2 million students who took the university entrance exam. The study's sample was consisted of 90.410 students who took the exam for the first time. Entering into a university was regarded as a measure of success in the study which found out that, relatively less expensive and short-term private tutoring did not have any impact on success in the best case scenario, while it decreased the chance to enter into a university in the worst case. On the other hand, the minority of students who can purchase relatively more expensive private tutoring in a more intensive way increase their chances of entering universities (Gurun and Millimet, 2008: 10). As this study shows, families with high income level and resources provide their children with more quality/expensive private tutoring for a longer time, and get ahead in the race. However, parallel to their limited resources, the majority of families uses outside school education in the later time of their children's education, usually as the exam times approach. In other words, only long term, high amount expenses in shadow education seem to pay back, while all sections of society invest in paid education according to their resources.

New types of private tutoring centers with fancy names such as *boutique* tutoring centers and *vip* tutoring centers, where the classes are consisted of a limited number of students, and/or the teachers are available for one to one tutoring, are chosen by families with higher income levels and resources since they charge up to ten times more than a regular PTC. This type of stratification in private tutoring increases inequalities in education and help create more elitism in the society through education.

In other words, outside school education deepens class differences and supports the reproduction of inequalities.

These inequalities are experienced even in the area of scholarships provided by the PTC's. According to the study conducted by the Turkish Education Association, during the 11th and 12th grades when PTC's are used most intensively, successful students who attend PTC's free of charge are those mostly coming from high income households. 14% of students coming from the highest income households (with the monthly income of over 5.000 Turkish Liras) benefit from PTC's without any payment while lower income households (with the income level of under 2.000 Turkish Liras) are provided with the same benefit on an average of 7%. The same study reveals that, higher income households benefit more from PTC discounts as opposed to lower income households (TED, 2010: 245). This means, higher income families do not only provide their children with more quality and long term private tutoring but also pay relatively less for what they purchase. In other words, part of PTC expenses of higher income level families is financed by lower income groups of the society who can afford only less quality outside school education for a short time thus not being able to benefit from it in the real sense.

As the theories of various forms of capitals substantiate, inequalities in education are supported by family capitals, as different ways of parents' involvement in their children's education can support their success. Sociologist Coleman mentions three types of capitals in terms of the impact of families on children's education. Financial capital reflects the level of wealth and income of the family, while human capital represents the education of parents. Coleman also uses social capital in terms of the adults' involvement and support for the children within family. Additionally, he draws attention to the social capital outside the family which consists of social networks among parents, and parents' relations to the institutions within these networks (Coleman, 1988: 113). Writing around the same time, another sociologist Bourdieu emphasizes the relations between economic, social and cultural capitals. From his perspective, cultural capital supplements the wealth of a class or class fraction thus helping the social reproduction of class, power and status (Bourdieu, 1986: 241). To put it differently, cultural capital that one obtains is reproduced by economic capital and then turns into social capital which would lead to more economic capital all of which transfer from parents to children or from generation to generation. Although cultural capital seems to have lost its significance to some extent in the last few decades in Turkey as opposed to economic/financial capital, a range of examples prove both Coleman's and Bourdieu's points.

3. Conclusions

Whether it is approached from the mainstream or critical standpoints, the theories of forms of capital provide useful tools to understand the relations of education and its social reflections in the Turkish society especially for the last few decades. Along with economic capital, the impact of social capital in the area of education has been increasing in Turkey, especially due to the increasing number of private schools. Social networks that are established around these private schools are much different than the traditional "school-family union" of public schools where teachers and parents would get together every once in a while to discuss general performance and manners of students. By the formation and growing number of private schools, parents, usually the mothers, who send their children to the same private school, would establish social networks, through which they organize a variety of educational and social activities. Along with deciding what PTC they would send their children, which teacher they would hire for one-to-one tutoring, and what kind of study programs they should follow for certain exams, they also organize social activities for children such as going on vacations together. Each of these activities whether it is educational or social, would usually have positive impact on the success of children. In other words, those parents

and their children benefit from additional advantages of social networks which support the social reproduction mechanism of education in the shadow education system as well as the formal one.

Inequalities in education have been in the social and political agenda for a long time, and it will be so in the future, as well. Across the world, public education has historically been thought as a political tool in reducing inequalities. Therefore, it is usually believed that, making public education prevalent would mean reducing the inequalities even if not removing them completely. Turkey has experienced such periods, when education was made accessible for lower classes and there were no selective entrance exams. However, this function of education has been disappearing or becoming ineffective due to the current practices in the education system and within its shadow. By the same token, although shadow education has become widespread, it has not led to the prevalence of success in exams, and thus improving the chance for better positions in life for the majority of people. Growing examples prove that success in education depends on financial resources first and then social networks which are established through the help of these resources. In this context, along with formal education systems, outside school education provides additional ground for the reproduction of inequalities in the neoliberal phase of capitalism we live in.

References

- Bourdieu, P. (1986). The Forms of Capital. In J. G. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (241-258). New York: Greenwood Press.
- Bray, M. (2010). Researching Shadow Education: Methodological Challenges and Directions. *Asia Pacific Education Review*, 11, 3–13.
- Coleman, J. S. (1988). Social Capital in the Creation of Human Capital. *American Journal of Sociology*, 94, 95-120.
- Devlet Planlama Teşkilatı (DPT). (2006). *Dokuzuncu Kalkınma Planı (2007-2013)*. Retrieved February 12, 2010, from: <http://ekutup.dpt.gov.tr/plan/plan9.pdf>.
- Gurun, A. and D. L. Millimet. (2008). Does Private Tutoring Payoff? IZA Discussion Paper. No. 3637.
- Keskin Demirer, D. (2012). A Dramatic Shift in Teacher's Employment and the Stratification of Educator's Labor. In K. Lordoğlu, D. Keskin Demirer and İ. Şiriner (Eds.), *Labour Markets and Employment*. London & İstanbul: IJOPEC Publication.
- Milli Eğitim Bakanlığı (MEB). (2010). *Milli Eğitim İstatistikleri 2009-2010*. Retrieved January 7, 2011, from: sgb.meb.gov.tr/istatistik/Genelge2009_72.pdf.
- Rutz, H. J. and E. M. Balkan. (2009). *Reproducing Class: Education, Neoliberalism, and the Rise of the New Middle Class in Istanbul*. New York: Berghahn Books.
- Tansel, A. and F. Bircan. (2004). Private Tutoring Expenditures in Turkey. *ERC Working Paper in Economic* 04/08. Institute for the Study of Labor, Bonn, Germany.
- Türk Eğitim Derneği (TED). (2010). *Ortaöğretime ve Yükseköğretime Geçiş Sistemi*. Ankara.
- Türkiye İstatistik Kurumu (TÜİK). (2006). *Türkiye Eğitim Harcamaları Araştırması, 2002*. Retrieved January 18, 2011, from: http://www.tuik.gov.tr/Kitap.do?metod=KitapDetay&KT_ID=5&KITAP_ID=40.
- Yüksek Öğretim Kurulu (YÖK). (2007). *Türkiye'nin Yükseköğretim Stratejisi*. Retrieved June 25, 2008, from: www.yok.gov.tr.

WHY CHANGE WHAT'S NOT BROKEN? CHANGING PERCEPTIONS AND ATTITUDES ABOUT USING TECHNOLOGY

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Abstract

Change is a fact of life, but it is human nature to resist it because we are habitual in our actions. As humans, we prefer the security of familiar surroundings and often do not react well to changes in our environment, even when the changes are positive. This is true for faculty who are being asked to incorporate new technologies into their teaching practices. Changes in instructional practices often trigger fear and apprehension, which are deeply rooted in the human psyche. Insufficient information about the impending change and its sought-after benefits are likely to cause considerable distress among those affected by the change.

As educators, it is important to stay abreast and embrace technology, as today's youth are often more confident and reliant upon technology than the adults who educate them. This presentation will describe how the National University, School of Education has implemented processes to mitigate the emotional journey faculty often encounter when introducing professional development activities that integrate technology in courseware. Techniques for changing perception and attitudes about technology, including the cognitive transition to acceptance and successful implementation will be examined.

Keywords: *Teacher Education, Cognitive Transition, Professional Development, Technology*

1. Introduction

Change is a fact of life, but it is human nature to resist it because we are habitual in our actions. We prefer the security of familiar surroundings and often do not react well to changes in our environment, even when the changes are positive. This is true for faculty who are being asked to incorporate new technologies into their teaching practices. Changes in instructional practices often trigger fear and apprehension, which are deeply rooted in the human psyche. Insufficient information about the impending change and its sought-after benefits are likely to cause considerable distress among those affected by the change.

For some, change implies loss, which is an emotional experience associated with stress and anxiety. The emotional reactions to change are similar to the experience in dealing with situations of loss or grief. Kubler-Ross (1969) identifies the stages of the grieving process as denial, anger, bargaining, depression, and acceptance. Brown, Dennis, and Venkatesh (2010) present findings that changes are associated with technology integration into teaching practices. At first, the tendency is to deny the change and then resist it. However, after exploring and understanding new options and their intended benefit, acceptance and commitment are more likely to follow.

Although technology is pervasive in education, it has not been effectively infused in the activities of teaching and learning. When faculty is asked to learn how to use technology to enhance the learning process, the stages of grief or change are often triggered. Exacerbating this situation is the fact that the sets necessary to utilize technology effectively are constantly changing, which leads to an emotional journey. As educators, it is important to stay current and embrace technology, as today's youth are

more confident and reliant on technology than the adults who educate them in the classroom.

2. Work in Progress Parameters

National University (NU), which is the state of California's (USA) second largest non-profit private university, is conducting several pilot projects that integrate the use technology in both face-to-face and virtual classrooms. These projects include the use of IRIS Connect™, lecture capturing using Camtasia Relay™, and SMART Technologies™. Each of these projects is an individual undertaking, but they also can be integrated into a single process of technology use as we will discuss later in this paper.

2.1. Lecture Capture with Camtasia Relay™

Salazar (2010) suggests that the educators of today need to incorporate “the use of educational technology” with “pedagogically sound” curriculum to engage students (p. 3). Dey, Burn, and Geredes (2009) present the results of a study on the effects that lecture capture videos had on the college students in an online environment. Following the cognitive load and design principles of Meyer (2002), the study design was purposeful in addressing multimedia instructional effects on student learning. The findings of the study suggest that the use of lecture capture that includes the instructor's face during the presentation increase student learning.

National University has obtained Camtasia Relay for the capturing of lectures by its faculty. These lectures are being stored in an online library accessible by the faculty for use in a variety of courses. Despite the establishing of this capability for the faculty's use, there is little usage. New technology that changes the prevailing practices creates the cognitive dissonance often leading to the responses that relating to grief or loss (Carr, 2001; Elrod II, & Tippet, 2002). A calculated effort to overcome the barriers to use is a part of the technology program in use at the university.

2.2. IRIS Connect™

A part of the work of National University faculty involves the observation, evaluation, and instruction of those in various teaching credential programs. The use of IRIS Connect™ allows the faculty to conduct Internet-based remote observations of beginning teachers. These observations are videotaped and provide the opportunity for time stamped comments and evaluations to be made by the faculty. The beginning teachers have the ability to view these observations at their discretion and the benefits of seeing their practice is well established as promoting professional growth (Waxman, Tharp, & Hilberg, 2004). Making the change in faculty practices of observations to the use of this technology has invoked the emotions of anger, bargaining, depression, and for some-acceptance.

2.3. SMART Technologies™

The use of interactive white boards is becoming common in K-12 classrooms throughout the United States (Simba Information, 2010). The use of Smart Board technologies™, which includes the IWB, is one tool that educators can use to increase engagement in the face-to-face classroom (Mercer, Hennessy, & Warwick, 2010). With the deployment of IWB comes the need for universities to train future educators in the use of this technology (Campbell & Kent, 2010). Currently, an action-oriented research project in underway at National University to implement the use of IWB in Teacher Education.

Campbell and Kent (2010) support the training of pre-service teachers in the functions and pedagogical uses of IWB. In their study, they present two case studies of universities that implemented IWB training with pre-service teachers. Their findings support the premise that pre-service teachers need the opportunity to learn the functions of IWB as well as how to integrate the technology into their pedagogy. In order for the future classroom teachers to accomplish these goals, universities must have willing faculty who are able to demonstrate by example the effective practices of IWB implementation in academics.

The staging of technology in a classroom does not translate into its use as the literature notes (Venkatesh, Thong, Xu, 2012,). There are numerous barriers to the use of a new technology in the classroom environment as Lane and Lyle (2010) have noted. Therefore, the problem in attaining the goal of implementing the use of IWB in its Teacher Education program is overcoming the barriers relating to the grieving process noted above.

3. Literature review

Stephenson (2000) presents a case study that has implications for other new technology adoptions. The decisions individuals make can be, in part, the result of *following the herd* according to Walden and Browne (2009). Others theorize that technology adoption is the result of several factors including the perceptions that Brown et al. (2010) present in their work. Stephenson (2000) presents a case study of the adoption of a new technology by faculty in higher education.

Walden and Browne (2009) present a model regarding the decision-making process people use with new technology. The assumptions they present include the perception of value and the cost-benefit analysis the stakeholder uses in determining their thinking processes. Their mathematical analysis of simulations of technology decisions indicates that *following the herd* is often a right decision and one people will do so in a group.

Taking the design of a model for technology adoption further, Brown et al. (2010) present "Unified Theory of Acceptance and Use of Technology (UTAUT)", which contains four key predictors for technology use (p. 13). The "performance expectancy, effort expectancy, social influence, and facilitating conditions" factors form the UTAUT model (p. 13). The performance expectancy factor relates to the amount of improvement a new technology will add to the work of the user. Effort expectancy is the amount of labor the users anticipate will be required in their adoption of the use of the new technology. Brown et al. define social influence as the level of expectancy for individuals to use the new technology. And the facilitating conditions are the support factors that a potential new user perceives as available to ensure the successful implementation of the technology.

The specific information on the value of a new technology, supportive structures for implementing its use, and group dynamics that are supportive in gaining new skillsets are central to this discussion. Stephenson (2000) presents evidence that the development and implementation of a new technology needs to be widespread within a group. People will adopt a new technology when there is a widespread group buy-in to the process (Walden & Browne, 2009). The UTAUT model overlaps the previous discussion and adds a four-factor analysis potential for an instructional system design overlay to new technology implementation.

4. Research Questions

The primary research questions for this work are as follows:

1. How does the five stages of grief relate to technology changes in faculty instructional practices?
2. What cognitive steps are necessary for moving to the use of technology in faculty instructional practices?

3. How does the cognitive processing in faculty moving to technology use relate to the grief process (denial, anger, bargaining, depression, acceptance)? What actions can be taken to minimize the negative effects of changing to utilizing technology in the faculty's practices?

4.1 Participants

The participants for this project include the faculty and Instructional Technology Specialists that sign an informed consent form relating to this action research (Institutional Review Board approved). The participant pool will involve the faculty involved in coursework in the NU Teacher Education Department. These potential participants may present the researchers the opportunity to create a longitudinal study on the effect of exposure and use of educational technology has on future educators.

4.2. Method of Inquiry

The purpose of this study was to explore the emotional journey faculty often encounter when introducing and integrating technology in professional development initiatives. The collection of narrative data in this study will be originated from auto-ethnographic (personal perspectives) from the experiences of Instructional Technology Specialists and faculty involved in the technology adoption process in a higher education setting. Additional qualitative data through a survey or focus groups may supplement the auto-ethnographic responses.

4.3. Qualitative Data

The qualitative data is in the beginning stages of being collected. For the purposes of this presentation, the two Instructional Technology Specialists offer their perspectives on effective strategies for overcoming the emotional barriers to technology implementation.

Using literature that provides case studies supporting the implementation of a new technology is the first step in gaining faculty buy-in to the change. Acquainting them with the technology and allowing hands-on opportunities are effective practices to moving past the denial and anger stages of the emotional process. The bargaining process is often a part of the second step previously noted. Faculty must see the new technology as being beneficial to their work. Integrating the technology into their pedagogy is essential. Material is created and readily accessible for faculty to start using the technology. Reinforcing the new technology practices through one-on-one coaching and workshops overcomes the tendency towards depression. Nurturing is a vital step towards the acceptable stage. Having an Instructional Technology Specialist available during class when technology is being utilized helps overcome the fear associated with integrating new processes. This allows faculty the opportunity to learn the functions associated with the technology and effective practices are demonstrated and implemented. Finally, as highly educated individuals, it is necessary to facilitate their success by providing multiple resources that differentiate on the basis of ability as well as uses.

5. Conclusions

Implementing new technologies can evoke the emotional responses, which are similar to those Kubler-Ross (1969) presents for the grieving process. Change is inevitable and today's learner is different in their cognitive processing of content. The assumption that learners have not changed and the same teaching methods work is fallacious. In order to effectively teach our student teachers, NU faculty have to step out of their comfort zone and embrace technology. The plethora of technology projects

NU is initiating requires considering how to effectively overcome the emotions that create barriers to successful implementations. To date, the Instructional Technology Specialists, whose roles include research, development, and implementation offer their insights into effective practices for overcoming the barriers to new technology initiatives. Effective practices include the use of literature to support the premises of technology value. Hands-on workshops and well-designed professional development opportunities can lead to the bargaining faculty use in their changes to new technology. One-on-one coaching, periodic refresher workshops, and nurturing can facilitate the acceptance of new technologies.

References

- Brown, S. A., Dennis, A. R., & Venkatesh, V. (2010). Predicting Collaboration Technology Use: Integrating Technology Adoption and Collaboration Research. *Journal of Management Information Systems*, 27, (2), pp. 9–53. doi: 10.2753/MIS0742-1222270201.
- Campbell, C. & Kent, P. (2010). Using interactive whiteboards in pre-service teacher education: Examples from two Australian universities. *Australasian Journal of Educational Technology*, 26(4), pp. 447-463.
- Carr, A. (2001). Understanding emotion and emotionality in the process of change. *Journal of Organizational Change Management*, 14(5), pp. 421-436.
- Dey, E. L., Burn, H. E., & Gerdes, D. (2009). Bringing the classroom to the web: Effects of using new technologies to capture and deliver lectures. *Research in Higher Education*, 50, pp. 377-393.
- Elrod II, P. D. & Tippett, D. D. (2002). The “death valley” of change. *Journal of Organisational Change Management*, 15(3), 273-291.
- Kubler-Ross, E. (1969). *On death and dying*. New York, NY: Macmillan.
- Lane, C. A. & Lyle III, H. F. (2011). Obstacles and supports related to the use of educational technologies: the role of technological expertise, gender, and age. *Journal of Computers in Higher Education*, 23, pp. 8–59. doi 10.1007/s12528-010-9034-3.
- Mercer, N., Hennessy, S., & Warwick, P. (2010). Using interactive whiteboards to orchestrate classroom dialogue. *Technology, Pedagogy and Education*, 19(2), pp. 195-209.
- Meyer, K. M. (2002). *Quality in distance education: Focus on on-line learning*. San Francisco, CA: Jossey-Bass.
- Salazar, J. (2010). Staying connected: Online education engagement and retention using educational technology tools. *Clinical Laboratory Science*, 23(3), pp. 3-53.
- Simba Information. (2010). *National Survey of Interactive Whiteboard Usage*. Retrieved from <http://www.simbainformation.com/National-Survey-Interactive-6694283/>.
- Stephenson, R.S. (2000). The Harvey project: Open course development and rich content. In Petrides, L.A. (Ed.), *Case Studies on Information Technology in Higher Education: Implications for Policy and Practice* (pp. 185-194). Hershey, PA: Idea Group Publishing.
- Venkatesh, V., Thong, J. Y. L., Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), pp. 157-178.
- Walden, E.A. & Brown, G.J. (2009). Sequential adoption theory: A theory for understanding herding behavior in early adoption of novel technologies, *Journal of the Association for Information Systems*, 10(1), pp. 36-62.
- Waxman, H.C., Tharp, R.G., & Hilberg, R.S. (2004). *Observational Research in U.S. Classrooms*. New York, NY: Cambridge Press.

CODE OF CONDUCT AS INSTRUMENT FOR EDUCATION IN VALUES OF YOUNG UNIVERSITY STUDENTS: A COMPARATIVE STUDY

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Abstract

One of the problems of today, in education, is the antisocial behavior of students. The present study investigated if the existence and maintenance of a code of conduct in universities could figure as a new way to address the issue of education in values as an educational tool that provides the daily life and routine of values. Thus, the study consisted of a survey, description and comparative analysis of the code of ethics of two Brazilian higher education institutions: the University of São Paulo (USP) and the Institute of Aeronautical Technology (ITA). The overall objective was to investigate how the existence of a code of conduct could contribute to the formation of values and principles in university students, turning them into habits. The results showed that if the norms and rules expressed in a code of ethics or conduct are not practiced and experienced daily and routinely, the code becomes "dead letter", not from a text, a document which should only be consulted when problems arise coexistence. Thus, the daily experience of values in a code of conduct, assists, and much in fixing these until the act based on reflective and socially desirable values, becomes a custom or even a habit for students thereby contributing to the formation of ethical citizens, aware and responsible for their actions.

Keywords: *Antisocial Behavior, Code of Conduct, Ethics, Formation in Values, Education.*

1. Introduction

By observing the daily life of a university, and also based on what the news and researches of the area show today, what one sees is that young people, even those who attend a university, present a behavior increasingly offensive and antisocial that goes against the vocation of a university that, beyond promote research and knowledge expansion, have also, as a duty, be committed to building a more just and egalitarian society.

As a result, there arose the question: can the learning environment influence the formation of values in college students? Based on this discussion, we decided to investigate if the existence and maintenance of a code of conduct in the universities could figure as a new way to address the issue of education in values as an educational tool that provides the daily life and routine of values in order to promote relationships existent within the academic environment, achieving thus the formation of the student in all its facets: professional and human.

The overall objective was to investigate how the existence of a code of conduct could contribute to the formation ethical, moral, of values and principles in university students, turning them into habits. Therefore, the specific objectives were to: *raise* the bibliographic and documentary production existing, related to the subject and the research problem; *identify* and *examine* the foundations and assumptions on which were based the codes of the universities investigated; *examine* how some values, precepts, as also the ethics and morals, citizenship, justice, respect and responsibility were addressed and treated in those documents and, at last, *analyze* to whom these documents is intended.

2. The research theme

It is necessary to reflect if the nature of the university should not bring the issue of ethics, necessarily and inherently, not just as the theme of the program of certain disciplines of the field philosophical, but also intertwined in their actions and in the school environment. However, let us reflect, if "the university's mission is to form men of culture, with professional and technical competence, critical and humanistic perspective, the ethics involves this whole conception" (WANDERLEY, 2006, p.62).

Thus, we question whether it would be appropriate that the academic community in its entirety - educators, officers, directors and students - had a code of conduct that would serve as a guide for daily actions helping to promote the rescue of this coexistence environment. Thus, the experience of everyday ethics for college students through a code of conduct, it would have the end objective of driving the relationships existing within a university, students with peers and students with other members of the school, reaching with it, such practice to become a habit, custom, and ultimately become part of shaping the individual.

3. Methodology

The present study consisted of a survey, description and comparative analysis of the code of ethics of two Brazilian higher education institutions: the University of São Paulo (USP) and the Institute of Aeronautical Technology (ITA).

The USP is the greatest Brazilian public university and one of the most prestigious universities in Latin America, with approximately 89,000 students registered. Written in 2001, its Code of Ethics, in addition to establishing general principles and create specific rules for the different members of the university also cites standards of conduct in relation to Foundations, the Covenants, research, publications, the use of the name of the university and data logging and computer.

As for the ITA, despite also being a public institution of higher education, due the fact to being connected to the Air Force Command, is an institution the military character, where study about 2,500 students (3% of total students from USP). Created in 1950, the ITA offers courses in areas related solely to engineering, particularly in Aerospace, being considered the most renowned center of excellence in engineering education in the country, with high prestige, reputation and renown not only for their courses, but also, because of its discipline. Its Code of Ethics, or Honor, as originally conceived, is known as "Conscious Discipline".

To perform the analysis of the documents, we designed a set of questions (Analysis Matrix) that served as a guide. This matrix consisted of questions and the respective objectives that the answer to each question serves. The intention was to describe and explain the conditions for the preparation of each document to understand its scope and its relation to education in values. In the analysis of the comparison between the two documents, Code of Ethics of the USP and the Conscious Discipline of ITA, we highlight some issues observed, for example, when the document was created? How the text of the document is organized? What is the role assigned to the document? How moral, ethical and others precepts are cited in the documents? The student participated in the process of building code? In which way? How the divulgation of the code is made in the academic environment? Relationship with pedagogical practice, among other issues analyzed.

4. What the analysis revealed

We consider that the two proposals, the Code of Ethics of the USP and the Conscious Discipline of ITA differ in form and function. While the former is a document in which we found, in the form explicit, disciplinary rules and conduct, the second, it is not a document, but a system, a way of life for students. Therefore, the EC of the USP

foresees what to do in case of illegal actions happen within the university, working as a document for reference in case of need for a legal backing to apply certain penalties. In the DC of ITA, which is aimed is that the students visualize and incorporate a proper conduct at academic environment, providing, thus socialization, fostering learning.

Thus, we have in the practise of the DC, the Piaget's autonomous moral, since, is to "do right" by believing that this is the best way to live in community. The autonomic moral is the notion of Well, an ideal, a desirable value of which is derived duties (Piaget, 1932, apud LA TAILLE, 2008). We understand that the Conscious Discipline educates, while the Code of Ethics only corrects, punishes. Subtle, but a difference of much-valued!

5. Finals Considerations

We believe that more educational than having a list of principles or rules expressed in any document to be consulted when needed, is essential to adopt an ethical stance in the formation process of the student, so that all members of the community academic are responsible for the harmony and integrity of the academic environment. And it is exactly in the order that is not imposed, but rather that it accepts willingly, by consent, which consists an education in values.

It's important to stress that care must be taken so that the code is not be treated as mere moral babble, repeating concepts and definitions so commonly used by philosophical disciplines, when the norm that prevails in academia is disrespectful treatment among people. We must cultivate the consistency between theory, principles elected for us and daily practice.

It is worth reflecting that in daily living and everyday of norms, rules, values and principles perhaps lies the real key to success in achieving a good social environment as something usual, customary and "normal" for the student.

We understand that education happens in various environments and times in many ways and led by several people. And so it is conceivable that also in the IES, occurs values education. Thus, the daily experience in values expressed in a code of conduct would help, and much in fixing these, until that the act based on reflective and socially desirable values, becomes a custom or even a habit for students, contributing thus, to the formation of ethical citizens, aware and responsible for their actions.

References

- LA TAILLE, Yves de. The issue of indiscipline: ethics, virtues and education. In: DEMO, Pedro; LA TAILLE, Yves de; HOFFMANN, Jussara. *Great Thinkers on Education: The challenge of learning, training and moral evaluation*. 4ed. Porto Alegre: Mediação, 2008. p. 67–98.
- PIMENTEL, Carlos Eduardo; GOUVEIA, Valdiney Veloso; VASCONCELOS, Tatiana Cristina. Musical preferences, attitudes and antisocial behaviors among adolescent students: a correlational study. *Studies of Psychology*. Campinas, [online]. 2005, vol.22, n.4, p. 403-413. ISSN 0103-166X.a
- WANDERLEY, Luiz Eduardo W.. Ethics and the University. *PUCVIVA*, São Paulo, year 7, n. 27, p. 62-66, jul/sep. 2006. Available in: <http://www.apropucsp.org.br/revista/r27_r11.htm>. Accessed: 22 may 2012.

LIBRARIANS WORK-RELATED LEARNING AND SELF-DEVELOPMENT: STUDY IN ESTONIAN UNIVERSITY LIBRARIES

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Abstract

The aim of the current paper is to clarify if the staff of Estonian university libraries has enough opportunities and willingness for continuing education and to develop their skills and competencies related with their everyday work in formal as well as in informal form; whether they have sufficient skills for their current job and what kind of knowledge/skills do librarians miss the most and finally, whether their current income will allow them to continue their education.

The data used in this paper is based on reviewing of relevant literature to provide an overview of the concept of learning and development, and also on the results of the original online survey, created by the paper's authors, held in 2011/2012 in Estonian university libraries governed by public law in Estonia.

Although the personnel of Estonian university libraries are highly motivated to train themselves, and some are even willing to do it at their own expense, most librarians are relatively pessimistic about their opportunities to develop themselves with their current salary. The increasing salary would be the biggest motivator for continuing education and self-development. There are a number of employees in university libraries who would be willing to participate in professional conferences and seminars, unfortunately, most of the respondents are not ready to deliver a presentation. The issues that emerge from this survey could be helpful for library managers, but also for employees.

Keywords: *University librarians, formal education, informal education, learning, continuing education, self-development*

1. Introduction

Learning has become more and more important both in a personal and organizational context. The nature of work is turned to be more complex than ever before and due to this more people with ability to settle in and to develop are needed in an organization. As knowledge has become the key factor for achieving efficient service and high productivity, organizations need people with high levels of knowledge, skills and abilities, which eventually lead to desirable organizational success.

Learning and development is defined as the process of ensuring that the organization has the knowledgeable, skilled and engaged workforce it needs. It involves facilitating the acquisition of knowledge and skills through experience by individuals and teams, learning events and programmes provided by the organization, guidance and coaching provided by line managers and others, and self-directed learning activities carried out by individuals (Armstrong 2012, p. 274).

People will learn more effectively if they are motivated to learn. As Reynolds *et al* (2002, p. 34) commented: "The disposition and commitment of the learner – their motivation to learn – is one of the most critical factors affecting learning effectiveness.

Under the right conditions, a strong disposition to learn, enmeshed by solid

experience and a positive attitude, can lead to exceptional performance". Goal theory states that motivation is higher when individuals aim to achieve specific goals, when these goals are accepted and, although difficult, are achievable, and when there is feedback on performance. Learning goals may be set for individuals (but as effective motivators they must be acceptable) or individuals may set their own goals (self-directed learning) (Armstrong, 2012, p. 280).

Continuing education and staff development are minor, but persistent themes in the literature of librarianship (Woodsworth, 1998, p. 62). As the library's most valuable asset, the staff must be encouraged to upgrade their educational and professional qualifications. Efforts must also be made to sharpen their skills regularly with the attendance of academic conferences, seminars and workshops within and outside the library and information science (LIS) area. The more the library staff benefit from continuing education and training, the more they would become skilful, confident and above all interested in the library work itself. Their future prospects for promotion and advancement would be enhanced too (Senyah, 2003, p. 85, 88).

Self-directed or self-managed learning involves encouraging individuals to take responsibility for their own learning needs, either to improve performance in their present job or to develop their potential and satisfy their career aspirations (Armstrong, 2012, p. 287).

Professional development activities can be characterized as formal or informal types of activities. Formal activities include courses and workshops offered in-house, by educational institutions, or by professional associations.

Informal activities include attending conferences, discussions with colleagues, participating in e-mail discussion lists, reading the professional literature, and pursuing self-directed projects. Formal professional development activities are organized, structured programs that explicitly aim to foster understanding, knowledge, and skills. Workshops offered by educational institutions are an example of formal activities. Informal activities also involve the pursuit of understanding, knowledge, and skills, but outside the curricula of educational or academic institutions and professional associations (Livingstone, 1999; Auster & Chan, 2004).

Informal learning occurs opportunistically and without strict timetables. Conference attendance is considered an informal activity because of the myriad opportunities to network and interact socially and professionally with a wide range of peers and colleagues (Noe *et al*, 1997).

The role of learning and self-development should not be underestimated in a career path. Competence and good education are one of the components of a career (Türk, 2005, p. 362–368; DeCenzo & Robbins, 2004, p. 200–201, *etc.*). It consists in knowledge, skills, and the experience of an employee, and the continual renewal and development of these notions. A good education is one of the most important components of a career, thus one constantly needs to contribute to self-grow by participating in various courses and via self-study.

Librarians, of course, are required to obtain the highest possible level of achievement in their field. It is possible to pass applied higher education studies, bachelor's studies, master's studies, and doctoral studies. Career also involves participation in specialty societies and self-development in activities outside working hours. This is especially aimed at young specialists, who have just come to work in the library and who would otherwise have a hard time finding appropriate skill implementation and development opportunities. Foreign language skills have also become an important component in a career. This skill is often crucial in terms of today's internationalisation.

2. Sample of the Study, Method, Objectives and Data Collection

In 2011/2012 a survey, using an online questionnaire method, was performed in Estonian university libraries governed by public law. These libraries were chosen

because they are funded on a similar basis, they perform the same functions and their main aim is to support high quality education and to increase the state's potential for ongoing scientific discovery and development. University libraries are considered to be "legal persons in public law" (*i.e.*, a corporate entity with the standing of an individual) and are one of the autonomous, independently functioning scientific, educational, and cultural institutions that act on the basis of science and developmental activities stipulated in the statutes of their parent universities and other legislation. Because of the high demands provided for the university libraries, also the demands for university library employees are very high.

For compiling the questionnaire, the authors analyzed several previous studies and also questionnaire appendixes of these studies (Kuvaas, 2006; Gabris & Mitchell, 1988; Harris, 1988; Schneider et al, 2003; Snape et al, 1998; Murray, 1999; Leckie & Brett, 1997). The questionnaire consisted of four parts: A) Job satisfaction: general issues; B) Learning and individual development; C) Division of labor and coordination; D) Performance measurement and appraisal. To identify librarians attitudes, five-point and three-point interval scale (so called Likert-scale), discrete numerical five-point scale and multioption scale were used in this questionnaire.

The questionnaires were applied to 195 library professional staff working in selected university libraries. 111 completed questionnaires were received back. The rate of receiving back was 57%. Data obtained from the completed questionnaires was analyzed using simple percentages, tables, bar charts and pie-charts. Connected with the fact, that the initial questionnaire included 71 questions, together with questions about the respondents and some specifying questions, the authors of the survey decided to analyze only the B-part of the questionnaire for the purpose of the current paper. The aim of the current paper is to find out:

- what are the librarians' opportunities and willingness for continuing education and self-development;
- what kind of formal and informal activities are university librarians ready to perform for their work-related education and self-development;
- what kind of knowledge/skills do librarians miss the most in their current position;
- is there enough information available for university librarians about different trainings, conferences, courses etc.

3. Findings

Organizational restructuring, transition from printed scientific information to digital information and new technological challenges have resulted in changing roles for librarians. The knowledge and skills that librarians have acquired through formal education and on-the-job experience may no longer be relevant for jobs that have been redesigned for advanced knowledge and skills. Librarians nearing retirement may be reluctant to invest time and money in professional development they will hardly use, and libraries may be reluctant to invest in training librarians who will soon retire (Auster & Chan, 2004, pp. 57-58).

The surveyed librarians have a high self-esteem: 77% consider that they have sufficient knowledge and skills for their current position, only 15% are hesitant and 8% believe that they lack sufficient knowledge and skills.

Although more than three-quarters of the respondents (77%) feel that they have sufficient knowledge and skills for their current job, they would be still willing to learn something if this would result in increasing their salary (90%). The highest level of respondents who value their knowledge and skills as sufficient we can find from the age groups from 41 to 50 years and 51 to 60 years. Surprisingly, more sceptic ones about their sufficient knowledge and skills we can find among the respondents from 31 to 40 years.

Taking into account that the vast majority of employees of the Estonian university libraries receive a monthly salary of less than 500€, it is understandable why 49% of those surveyed are not willing to educate themselves at their own expense.

An organization-based support for librarians' professional training and development is also essential in Estonia and it is certainly one aspect that requires in-depth investigation in the future. Also, clause 28 (2) 5) of the Estonian Employment Contracts Act (Töölepingu seadus, RT I 2009, 5, 35) gives an opportunity to cover part of the costs by stating that it is for the purposes of development of the professional knowledge and skills of an employee, to provide the employee with training based on the interests of the employer's enterprise. Since 2011, the employer can cover the costs of formal education acquired within the adult education system of an employee under certain conditions. Investing in the formal education acquired within the adult education system (e.g. master's studies or doctoral studies) that is related to an employee's job duties is justified if an employer has the right to expect the employee's contribution to the organization later on.

A total of 54 people responded to the following open question: "What kind of knowledge/skills do you miss the most in your current position?" The respondents mostly encountered difficulties with foreign languages. The answers to the open question show that 25 people feel the need for learning and improving language skills; mostly in English, Finnish and Russian; with Chinese and Japanese also mentioned. Secondly, lack of IT-related knowledge was mentioned (14 respondents). This includes both general computer skills and the need for specific technical knowledge. By M. Nofsinger, technological skills are necessary for librarians. The information environment in libraries include an integrated library system to manage circulation, acquisitions, and cataloguing functions of the library; electronic information services; local area networks (Wifi); and devices for visually handicapped users. Librarians should be able to use all these systems well enough to show the library users how to operate them (Nofsinger, 1999).

Yet there appears to be a lack of managerial knowledge, conflict management skills (in this regard, particularly for readers), knowledge of history, binding and legislation.

As previously stated, one of the most important components of a career are competence and good education, which requires continual acquisition and development of knowledge, skills and experience, also participation in specialty societies, professional conferences, and seminars. If the everyday work does not allow employees to implement their skills enough, they have the opportunity to seek challenges elsewhere. For instance, they can write presentations, take on a specialized topic in various conferences, seminars, and forums; in other words, they can be active outside of working hours.

There are a number of employees in university libraries who would be willing to participate in professional conferences and seminars with the goal of self-improvement – as much as 84%. But only 32% are ready to deliver a presentation, 20% are hesitant and, unfortunately, 48% of respondents do not want to perform at all. It is clear that the idea of public speaking in the presence of a large audience can be daunting, if it has not been done before. However, if an employee is interested in any professional topics, it can be assumed that the subject may be interesting to other librarians, and moreover, to the general public.

The information about trainings and conferences/seminars has been sufficiently available: none of the participants in the survey did respond to these questions as "No, definitely not".

Nevertheless, it is still surprising that 61% of the respondents have not participated in any training during the last 12 months. Perhaps the university library personnel are not informed enough about the opportunities to take training trips, for example, to get acquainted with their professional field in some other country's library, offered by the Archimedes Foundation via the Erasmus-program meant for university

staff. The non-academic staff of universities may participate in trainings as well as conferences under the Erasmus Programme. The programme lasts until the end of 2013.

A total of 55% of the respondents have not participated in any conference/seminar during the last 12 months. However, the latter is understandable since the attendance at conferences is usually supported by various funds in case the attendee is ready to make a presentation there. As only 13% speak at a conference, it will not yield a very high percentage of conference participants.

4. Conclusions

The personnel are motivated to train themselves, and even if some are willing to do it at their own expense, the bigger motivator is hope for increasing salary. Most people are interested in learning languages. Most of the respondents are willing to participate in conferences and seminars with a purpose of self-improvement, and most of them have done it within the last 12 months. A total of 35% of respondents would be willing to give presentations, 18% of them have performed one within the past 12 months.

The main issue for Estonian university librarians is the salary at the moment. On the basis of the reality that the major part of respondents receive monthly income less than 500 €, today the first and most critical issue for libraries is to increase employees' salary and by that improve their economic status. The authors of the survey are of the opinion that employers should support the employees' training and participation in seminars and conferences and provide greater encouragement for active participation, in other words performing and sharing experiences. The time (paid leave) and the financial support that is granted by an employer or a library for the self-development activities of an employee, is crucial for the employee's preparedness for in-service trainings and could influence the self-development activities of an employee, like the participation in professional seminars, conferences, workshops, and meetings.

References

- Armstrong, M. (2012). *Armstrong's Handbook of Human Resource Management Practice*. 12th Edition. London, Kogan Page.
- Auster, E., Chan, D. C. (2004). Reference Librarians and Keeping Up-to-Date, *Reference & User Services Quarterly*, Vol. 44, No. 1, pp. 57-66.
- DeCenzo, D., Robbins, S. (2005). *Fundamentals of Human Resource Management*. New York, John Wiley & Sons.
- Livingstone, D. W. (1999). "Exploring the Icebergs of Adult Learning: Findings of the First Canadian Survey of Informal Learning Practices," *Canadian Journal for the Study of Adult Education*, Vol. 13, No. 2, pp. 49-72.
- Reynolds, J., Caley, L., Mason, R. (2002). *How Do People Learn?*, CIPD, London.
- Noe, R. A., Wilk, S. L., Mullen, E. J. and Wanek, J. E. (1997). "Employee Development: Issues in Construct Definition and Investigation of Antecedents," in *Improving Training Effectiveness in Work Organizations*, ed. J. K. Ford, S. W. J. Kozlowski, K. Kraiger, E. Salas, and M. S. Teachout (Mahwah, N.J.: Lawrence Erlbaum), pp. 153-89.
- Senyah, Y. (2003). Motivation and Productivity in Academic Libraries: A Case Study of the Kwame Nkrumah University of Science and Technology Library, Kumasi, *Journal of Science and Technology*, Vol. 23, No. 2, pp. 80-89.
- Töölepingu seadus (Estonian Employment Contracts Act), RT I 2009, 5, 35, <https://www.riigiteataja.ee/akt/13198475>.
- Türk, K. (2005). *Inimressursi juhtimine. (Human Resource Management)*, Tartu Ülikooli Kirjastus, Tartu.
- Woodsworth, A. (1998). Learning for a lifetime. *Library Journal*, Vol.12, No 1, p. 62.

CONSTRUCTIVE CONFLICT RESOLUTION BY EDUCATIONAL ADMINISTRATORS: NEW SKILLS REQUIRED IN AN ERA OF ACCOUNTABILITY

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Abstract

Conflict resolution skills have always been required by school administrators, whether at the school building or school district level. However, in the U.S. as well as in some other countries, a sound knowledge of the theoretical background and skills necessary for conflict resolution have become critically important in the era of accountability in which U.S. administrators now operate. While American administrators have faced increasingly stronger calls for accountability due to a series of national educational reform movements, these calls have reached a higher level since the passage of the *No Child Left Behind Act* (2002) and the fiscal crisis which erupted in 2008.

This paper focuses on the analysis and evaluation of the current research on conflict resolution and the knowledge and skills leaders now need to resolve all types of conflicts at the school site and at the school district level. The analysis indicates that listening, building relationships, developing trust and showing respect are particularly important skills needed to facilitate conflict resolution. However, how to utilize consensus building and conflict resolution strategies are not frequently taught in university superintendent and principal preparation programs. The authors recommend that these skills be taught in both university preparation programs and via staff development activities for current administrators. This can best be done through the use of case studies, role playing and utilizing mentoring by other administrators with highly developed conflict resolution skills.

Keywords: *Conflict resolution, accountability, administrative temperament.*

1. Introduction

Administrators at all levels in any school building or district are faced with a myriad of situations requiring decisions on a daily basis. Of course, not all of these are major decisions, but even the cumulative effect of these minor decisions can be tiring. Conversely, some of the major decisions which administrators must make can be career-altering; not always in a positive direction. While many postings for administrative openings list consensus-building near the top of the list of preferred attributes, is building consensus always the best decision-making model in the organization?

Decision-making through consensus building or collaboration, while often effective, can be a very time-consuming process. The same board of education which listed consensus building as a strongly desired attribute in its new superintendent may want a major decision made tomorrow. In such a situation, we already have a conflict which requires resolution. Another consideration is that different situations may require alternate decision-making approaches. Making a decision about what to do when the building is on fire probably requires a different approach than deciding which reading series to implement in the school district. One of us once worked with a boss in

Colorado who talked about Level 1, Level 2 and Level 3 decisions; each of which called for differing decision-making strategies, depending upon the importance of the decision to the organization.

In the same Colorado school district, administrators were taught to look directionally when making decisions. Regardless of where you were situated in the organization, you first looked up for rationale when making a decision. Second, you looked horizontally for impact. If you implement a particular new approach or program in your school, as the building principal, what type of impact might this change have on the other schools in your district? Finally, we were taught to look down for support. You must have your troops with you as you implement change, either in your school or your district. How many times have administrators led a charge, only to turn around and see that their troops were not following?

There is a school of thought which says that conflict in organizations is not always a negative thing, as long as that conflict can be channeled to stimulate creative thinking and to generate new ideas. In other words, if an administrator can periodically create a bit of cognitive dissonance within the organization, helpful ideas and suggestions may emerge. Administrators must be skillful enough to manage conflict so that it remains positive, or constructive, rather than negative, or destructive (Priem, Harrison & Muir, 1995). In constructive conflict, administrators are able to facilitate the decision-making process in a fashion that allows the challenging of assumptions, beliefs and ideas. Participants present and receive new ideas in an atmosphere of respect and individuals' feelings are left intact. Conversely, destructive conflict emerges when the group facilitator allows the conversation to get out of control and group members become emotional and angry during the discussion. Preventing this from happening often depends upon the establishment of firm ground rules before the conversation even begins. It also requires strong group facilitation skills by the administrator.

Decision-making through consensus is not always easy, either. Consensus building takes time, if it is done correctly. The thinking behind the consensus approach is that the more people involved in the process increases the amount of information being shared, thus expanding the group members' ability to understand the interests, expertise and knowledge of other group members. This mutual understanding and trust theoretically leads to a variety of options which can be considered by the group, in a non-threatening atmosphere. Ultimately, final decisions derived through this process supposedly have a better chance of being supported by all involved in the process. This type of decision-making is a foundation of the "win-win" negotiations process used by some school districts.

Another possible flaw in the consensus process is that you may not actually have true consensus. Some group members may be afraid to speak up in opposition to decisions derived in this fashion. Others may believe that everyone else in the group supports the decision, so they decide not to complain in order to maintain harmony in the group. If there are enough of these individuals in the group, this may lead to problems for the leader and the decision later.

Managing administrative decision-making through either consensus or conflict requires a strong set of skills, which will vary depending on the situation. A variety of studies (Hunt, Watkins, & Tripses, 2012, Tripses, Hunt, Watkins, & Kim, 2013, Litchka & Polka, 2013) have shown that these skills are not currently adequately addressed in superintendent preparation programs. It seems that developing these skills is more of an on-the-job training process, and some administrators learn more than others. This is a situation which needs to be addressed by those in charge of administrative preparation programs at all levels. If these skills are not being taught at the superintendent level, then it is highly unlikely that things are being handled differently in principal preparation programs. In both cases, major improvements need to be implemented if we expect our future administrators to be effective decision-makers. In the same vein, there is little doubt that actively practicing school and district

administrators need staff development in the area of conflict resolution and decision-making.

2. Objectives

The objectives of this paper were to review the literature regarding decision-making, and to suggest ways in which decision-making can be improved by administrators; primarily through the use of consensus building and conflict resolution. There are administrators unwilling to distribute decision-making because they believe that they are ultimately accountable for the final decision. As President Harry Truman said, "The buck stops here." The problem with this approach is that it diminishes what an administrator can handle. Anyone who has been a building level or district administrator knows that there are not enough hours in the day to handle all of the tasks on the plate. A sign of true leadership is the ability to assess the strengths of those in your organization and to assign significant tasks and duties to capable people. Yes, there will be times when you misjudge an individual or when an individual will let you down, but generally, people will rise to your expectations.

There are times, in smaller schools and school districts, where you do not have enough assistance and you must become jack-of-all trades. For example, in a smaller district, a superintendent may find it necessary serve as the curriculum director, budget officer and human resources manager. However, as schools and districts increase in size, the human resources pool tends to grow. A sign of a good leader, to paraphrase Jim Collins, is "to have the right people on the bus and then make certain they are in the right seats."(Collins, 2005).

Some administrators fail because they are unable or unwilling to share responsibilities and decision-making authority with those in their organizations. When one of us was an instructional director in a fairly large school district in the Midwest, his primary job was to monitor, supervise and evaluate the district's 27 building principals. A vast majority of these principals were excellent. However, the principal of the very smallest elementary school, with less than 300 students, had difficulty sharing responsibility with others in her building. She was so concerned about her accountability for all aspects of success in her building that she tried to do everything herself. It came to the point that she was even doing the secretary's clerical duties; and she had a very competent secretary. Over a period of two or three years, the evaluator became more insistent in evaluative meetings that she needed to focus on what was important, rather than focusing on everything. She found this impossible to do, so she was eventually reassigned back to the classroom.

When you have the ability, and perhaps the luxury, of involving others in your organization in decision-making, it is possible to substantially strengthen your organization. Those to whom you delegate decision-making authority need to know how much latitude they have in addressing issues. They also need to know that you will back them up when they make the difficult decisions. If you continually second guess or countermand your subordinates, the power of shared decision-making will soon dwindle. Does this mean that anything goes with shared decision-making? No, it does not mean that decisions are never examined or questioned. To borrow an old cold war phrase, you should "trust, but verify."

Another way to maintain accountability among your decision-making colleagues is to establish goals in this area as part of your annual goal setting conference. You cannot anticipate every decision or type of decision that those under your supervision will make or encounter. However, you can establish a mechanism for examining the decision-making processes utilized and the quality of the decisions made on a regularly scheduled basis. These goal review sessions can be used as an opportunity to provide some staff development pertaining to the decision-making process. Since the research indicates that many administrators did not receive sufficient training in this area in their

university preparation programs, it is incumbent upon supervisors to provide this training in the field.

3. Discussion

We often see discussions of good versus bad cholesterol in the media. Numerous authors have argued that we also have good versus bad conflict. Mooney, Holahan & Amason (2007) describe conflict as either cognitive or affective. Cognitive conflict is perceived to be a constructive contributor to the decision-making process because it reflects a group process in which participants debate and discuss alternative solutions and remedies to situations. Differing points of view can be brought forward and considered in an open environment. Theoretically, this not only brings about effective decisions, but this approach may lead to higher levels of group acceptance when the decision is actually implemented. During our administrative careers, we knew that it might often have been more efficient for us to unilaterally make a decision, but allowing often cumbersome group processes to play out almost inevitably led to more effective solutions. Administrators need to keep the end goal in mind. If we are going to Chicago, we know that there are many roads leading to Chicago. As long as we reach the final destination, we should be happy as administrators. When those under our supervision are able to choose their own paths to the final destination, they are likely to be happier with the journey and the end result.

Affective conflict is conflict that becomes personal and if not effectively managed by the administrator, it may lead to difficulties. This type of conflict occurs when personalities collide during discussions and emotions are allowed to get out of hand. Such conflict may be driven by individual agendas, personal perspectives, competition, or perceived sanctions or rewards. This often leads to personality conflicts and perhaps the establishment of coalitions within the main decision-making group. This can also lead to a lower level of acceptance of the final decision within the group, or may even lead to the inability of the group to make a decision (Jehn, 1995). As the affective conflict within a group grows, it tends to diminish the degree of cognitive conflict utilized. It takes a skilled administrative group facilitator to keep cognitive conflict from becoming affective conflict and once that genie is out of the bottle, it is hard to put it back.

In actual fact, many administrators use a variety of decision-making skills, including conflict resolution. Much of this is situational and often depends upon the time available for the process and the type of decision to be made. Naturally, some administrators utilize a consensus building process with some frequency while others seldom utilize this type of process. Think of it as a continuum, with administrators scattered from one end to the other. It is likely that administrators change over time, moving along the continuum, and throughout their careers they may vary the types of decision-making processes they utilize. Most administrators learn from their experiences and become more effective in the use of particular techniques of decision-making. We tend to rely upon those techniques with which we are comfortable and which have brought us success.

Another aspect to consider is the use of models of decision-making. To what extent do administrators use models and what types of models are employed by school and district administrators?

4. Conclusions

Most current school building and school district administrators in the United States have inadequate training in both decision-making models and conflict resolution strategies. Both of these are increasingly important in an era of enhanced accountability. Many states in the United States have now made it a requirement for at least a portion of principals' and teachers' annual evaluations to be based upon the

academic achievement of the students in their buildings and in their classrooms. Such achievement is typically measured by student progress on standardized or state-mandated academic achievement scores. Needless to say, this has greatly increased tensions between principals and teachers, and to a lesser degree, between principals and superintendents. The potential for conflict has increased greatly under this scenario, supporting the need for enhanced training in university and field situations.

It is strongly recommended that university principal and superintendent preparation programs intensify their efforts in two major areas in order to address this deficit. First, specific courses or units of study pertaining to the use and implementation of decision-making models by administrators, should be incorporated or enhanced in all administrative preparation programs. Second, prospective administrators should study both constructive and affective conflict and should receive intense and repetitive training in conflict resolution via techniques such as role playing, case studies, and mentoring by proficient administrators or former administrators.

References

- Cabrera, J. (2010). *Exploring the nature of conflict in public schools: Perspectives of ten educational leaders in northern Mississippi*. Unpublished Dissertation. Oxford, MS: University of Mississippi.
- Collins, J. (2001). *Good to great: Why some companies make the leap... and others don't*. New York, NY: HarperCollins Publishers.
- Hoy, W. & Tarter, J. (2008). *Administrators solving the problems of practice: Decision-making concepts, cases and consequences* (3rd ed. Boston: Pearson.
- Hunt, J., Watkins, S. & Tripses, J. (2012) *Restructuring the superintendency: Voices from the field*. Paper presented at the A.E.R.A. Annual Meeting in Vancouver, B.C., Canada.
- Jehn, K. (1995). A multi-method examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly*, 40, 256-282.
- Mooney, a., Holahan, P. & Amason, A. (2007). Don't take it personally: Exploring cognitive conflict as a mediator of affective conflict. *Journal of Management Studies* 44(5), 733-755.
- Polka, W. & Litchka, P. (2013). *Consensus v. conflict: Dilemmas in decision making for school superintendents*. Paper presented at the A.E.R.A. Annual Meeting in San Francisco, CA.
- Priem, R., Harrison, D. & Muir, N. (1995). Structured conflict and consensus outcomes in group decision making. *Journal of Management* 21(4), 691-710.
- Tripses, J., Hunt, J., Watkins, S. & Kim, J.(2013) *Leading into the future: Perceptions of school board presidents on the essential knowledge and skills for superintendent preparation programs*. Paper accepted for presentation at the National Council of Professors of Educational Administration's Annual Conference at the Meadowlands, NJ.

HIRING A CEO FOR UNITED STATES SCHOOL DISTRICTS: PERCEPTIONS SCHOOL BOARD PRESIDENTS HAVE OF QUALIFICATIONS

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Abstract

Identifying exemplary leadership to lead school districts in the United States of America has never been greater in the history of the country. Academic achievement scores are declining on international assessments, national assessments remain stagnant, and finances for school districts are dwindling. Superintendents, the CEO's of the school district, are being asked to do more with fewer financial, human and technical resources. There have been school reform agendas every decade with new initiatives and programs put in place to catapult students' achievement; results have been limited. Accountability measures were also put in place with the passing of the *No Child Left Behind Act of 2002* with federal and state sanctions employed for school districts that did not make adequate yearly progress on state assessments.

Federal and state legislators along with community activists and school board members who hire the superintendent are now holding the superintendent of schools accountable for raising student achievement. This has led to greater scrutiny by school board members in hiring the most qualified school superintendent to lead the school district. To date, little research has focused on the perception school board members have of the necessary knowledge, skills, and abilities a superintendent needs to have to lead a school district in an exemplary fashion.

The purpose of this descriptive state study was to determine the perceptions Illinois school board presidents have of the competencies a district chief executive officer, the superintendent of schools, needs to possess in a changing world and the critical personal and social competencies that ensure exemplary leadership. The study is based in part upon results from an earlier study (Hunt, J, Watkins, S. Kersten, T., Tripses, J., October 2011) that focused on the perceptions sitting school superintendents had on the knowledge and skill effective superintendents needed in a changing world.

The sample population of this descriptive study included school board presidents from the 837 school districts in the state of Illinois. School board members in Illinois are elected by the community. One of their most critical tasks is hiring the superintendent and monitoring and evaluating the execution of the superintendent's duties. A Web-based survey (Qualtrics) was developed and reviewed by an expert panel and then sent to the respective superintendents. Results of this survey will be shared with participants and discussion will follow.

Keywords: *School board presidents, hiring practices, superintendents*

POSTERS



THE MIRROR AND THE TRANSPARENCY: PARENTS AND TEACHERS

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Abstract

This work aims at testing the relationship between family and school during the primary school. Although parents wish to take part into their children's educational success, some of them cannot do it because of their job or other problems related to their family, or because they feel to be unsuitable, they think that education is a matter on which only the school and teachers have to work.

On the other side, teachers complain about the absence of the families. These two different behaviors reveal that there is the idea of standard roles.

In the interpersonal educational relationship, instead, the coming out from the "role" help to give a value to what it really is: an instrumental function to the education, an opportunity to improve the learner's growth and education, functional to their real needs. A true "alliance school-family" is required, in which the relationships are strong, where the roles are well identified in order to achieve common educational targets.

The work is based on four axis:

"The educational relationship from the simple society to the complex society";

"The family in the new school system: pedagogical and normative aspects";

"Family and school: a relationship in search of wellness";

"The field research" addressed to a group of teachers and parents of two different primary schools using different types of questionnaires.

The data collected have satisfied the starting research.

Keywords: *Relationship, role, family, school, field research*

1. Introduction

Family and educational system play a basic role in the training of young generations and have a primary responsibility in the transmission of human and moral values. Thirty years ago, G. Rodari remarked that "the crucial point is the basic meeting between parents and teachers, concrete form of a meeting between school and society: if this meeting fails, the structure doesn't survive". Since 1960, society quickly changes both socially and economically; in such a context, "the change in child status, from an economical function covered in the past to an affective – symbolical one, arouses an interest and an implication in the educational and teaching course of children" (Pourtois, Desmet, 1997, p. 258). Parents' participation in school life is formally ratified by Decreti Delegati in 1974. But since then such a participation met with various obstacles.

As it is well illustrated by P. Merieu, "the relationship between school and family is conceived in an utilitarian sense as families are interested in school just relatively to their children 's school performance". (Merieu, 1997, p. 79). Today, nearly forty years since Decreti Delegati, we can maintain that participation is not enough but an educational coexistence of family and school in the educational process of children is necessary in order to make it personalized and effective. (Stellacci, 2003).

2. Design

According to such considerations, our research team articulated the work leveraging on the following thematic nodes:

- The close relationship familiar wellness / quality of relationships between community and family by a mutual exchange among groups.
- Original contribution that school community can offer to family insofar school can express itself as a “learning community”, competent not only in promoting learning processes but also in taking care, in an empowerment perspective (Bruscaglioni, 1994), of family and of a community’s primary and secondary networks.

3. Objectives

Our research team wanted to investigate the interaction between the two greatest complex and influential systems in children education: teachers and parents. The investigation developed around some key questions, in order to gather ideas and thoughts regarding the two categories relatively to their participation experience in school life.

4. Method

The research was carried out according to the following methodology:

- selection of a sample of 120 subjects (60 teachers and 60 parents) belonging to two primary schools of the district of Naples;
- administration of a first questionnaire, translated from the text of “the second handbook of organization development in the school” (Schmuck, Runkel, Ardens J.H., Ardens R.I., 1977), consisting of 12 questions, aimed at finding the points the sample considers essential in a teacher’s job;
- administration of a second questionnaire consisting of 5 more targeted and better articulated questions.

The questionnaires were made according to the following features: they were anonymous, clear, without a default time and with a graphic facilitating the reading and the answer.

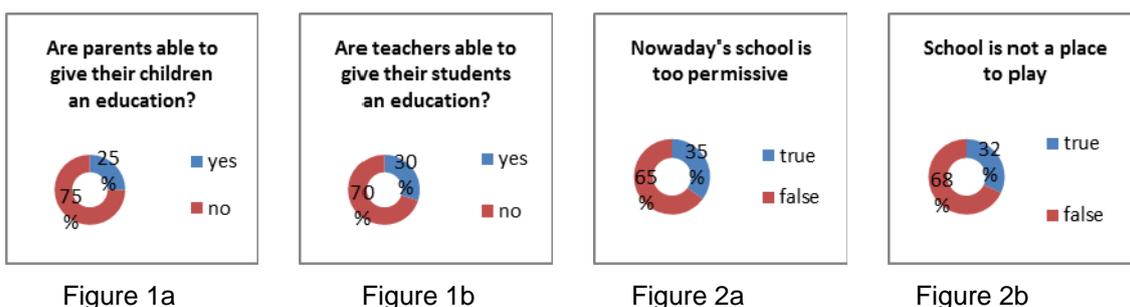
5. Results

The following figures are the results of a data filing belonging to the two categories (teachers and parents) according to principles of priority of the answers (look at the questionnaire n.1, table 1).

From the second questionnaire emerge data which have been catalogued according to a percentage criterion (look at the Figures 1a, 1b, 2a, 2b)

Table 1

Questions		
Improve learning opportunities for more talented students. Improve students' activities in basic skills. Develop a program for improved health education, including sex education and programs on smoking, alcohol and drugs. Cut down the rate of dispersion. Introduce new programs for culturally disadvantaged children. Increase the rate of school attendance. Individualize education by introducing non-prescription programs.		
Question	Sample	Priority of answers
About the previous items, which ones (Three) do you think are the most important in your role?	Teachers	<ul style="list-style-type: none"> • Improve students' activities in basic skills. • Develop a program for improved health education, including sex education and programs on smoking, alcohol and drugs. • Cut down the rate of dispersion
	Parents	<ul style="list-style-type: none"> • Improve learning opportunities for more talented students. • Improve students' activities in basic skills. • Cut down the rate of dispersion.



6. Discussion/conclusion

The analytical reading of the data regarding the first questionnaire showed that for teachers the basis is always a program of equal opportunities, namely to offer each pupil the right to improvement and training.

On the other hand parents give prominence to the improvement of learning opportunities for more talented students.

From the data of the second questionnaire emerge instead a mutual accusation between teachers and parents whereas the ones think the others didn't accomplish their own tasks and vice versa.

In other words parents think teachers are not able to carry out their job and, on the other hand, teachers think the same about parents' responsibilities.

We can also affirm there is an ambiguous attitude of interviewed parents about the question "Is nowadays' school too permissive?" because 65% of them gave a negative answer to the question but at the same time they (68%) answered "False" to the statement "School is not a place to play".

Therefore it is obvious the contradiction: school looks "harsh", linked to "old educational models", but at the same time parents consider it as a "place to play".

How the school of the next millennium should be?

This is the new challenge to which future teachers and parents should be prepared!

References

- Arends J.H., Arends R.I., Runkel P. J., Schmuck R. A., 1977. *The Second Handbook of Organization Development in Schools*. Mayfield Publishing Company, California.
- Brusciaglioni M., 1994, *La società liberata. Nuovi fenomeni, opportunità, categorie di pensiero*, Milano, Franco Angeli.
- Meirieu P., 1997, *Vers un nouveau contrat parents-enseignants*, Paris, Textuel
- Pourtois J.P., Desmet H., 1997 "Le relations famille-école: un point de vue partenarial", Bruxelles, De Boeck
- Stellacci L Direttore Generale U.S.R., 14 ottobre 2003, "Il Giornata europea dei genitori e della scuola".

CHEMISTRY FROM A NEW OPTIC

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Abstract

One of the common problems in teaching scientific disciplines, such as chemistry and physics, is the motivation of the students. This is a fact that all teachers have felt at any level of education. Within an innovation project at the University of Granada, some teachers belonging to the university (Inorganic Chemistry and Optic Departments) and high school, have carried out a survey over a thousand of student of both levels. The results have shown, among others, that a great majority of the students ask for more laboratory experiences as well as focus them about closer daily live phenomena.

Based on these results we are preparing a set of experiences that fulfill the following objectives:

a) The experiments are designed or chosen in order to capture attention of the students and motivate them to study the subject. b) We relate the experience to a natural phenomenon or a daily live problem. c) We select topics, when possible, suitable for the three educational levels: primary, secondary and university. d) We select interdisciplinary, physic and chemistry, experiences.

Thus, we show in this Poster the results we have obtained in the survey and, as example, one of the experiences we propose. The experience has two different part: the first part starts from the well known extraction of the anthocyanin pigments from the red cabbage and the variation of the colour with the pH; whilst the second part deals with the measurement of the different colours by spectrometry. The concept of pH and Colour, intimately related in this experiment, are introduced. These two concept are also related with different situations of the common life. The conclusions of this teaching strategy, tested at the laboratories of our university with student of General Chemistry of different degrees (Chemistry, Physics, Chemical Engineering, Biology, Geology, Environmental Sciences, Optic and Optometry) as well as student of several courses belonging to high school, resulted very positive.

Keywords: *Secondary education, university education, interdisciplinary, chemistry, physic.*

1. Introduction

After the recognition by the United Nations of 2011 as the international year of chemistry a large number of activities were planned all around the world. Within this framework, a group of teachers belonging to the university and high school, started an innovation project in education at the University of Granada. The main objective focuses on one of the common problems in teaching scientific disciplines, such as chemistry and physics: the motivation of the students. This is a fact that all teachers have felt at any level of education and, in particular, those being involved in popular science.

2. Design

The multiannual project was divided into two stages. The first part took up an academic course in which we carried out a survey over a thousand of student in order to reach a deeper understanding of the problem and to analyze possible solutions.

In a second step we implemented the chosen solution, then we tried and check it in a feed back process.

3. Objectives

The global objective is to understand the lack of motivation in many students, specifically in physic and chemistry, and to find a solution to overcome this problem.

As we discuss below we carried out a number of experiences that fulfill the following objectives:

a) The experiments are designed or chosen in order to capture attention of the students and motivate them to study the subject.

b) We relate the experience with to a natural phenomenon or a daily live problem.

c) We select topics, when possible, suitable for the three educational levels: primary, secondary and university.

d) We select interdisciplinary, physic and chemistry, experiences.

4. Methods

We elaborate two different surveys: for undergraduate student having General Chemistry as a subject in their degrees and for secondary student belonging to scientific or technical option. All the process was carried out using LimeSurvey hosted at the University of Granada (Carsten Schmitz LimeSurvey a free & open source survey software tool).

The surveys have 13 and 17 questions for university and high school, respectively, and we collected completed surveys in about 80% on average.

5. Discussion

As mentioned before the university survey has 13 questions divided in three blocks: Personal and academic data; Perception of the Chemistry; and Chemistry in your degree, whilst the high school survey has 17 questions divided into two parts: Questions about Chemistry as a subject and Chemistry in the daily lives of students.

The university survey was given to the student without notice near to the end of the first semester teaching season. The degrees involved were Chemistry, Physics, Chemical Engineering, Biology, Geology, Environmental Sciences, Optic and Optometry, and the percentage of surveys answered were of 64%. This means a low level of attendance since almost all the students completed the survey. Detailed data about this survey were already presented (Pérez Mendoza, 2012). It is noteworthy that nearly 50% of the student in the above mentioned degrees didn't studied Chemistry at high school. The other two blocks of questions point out that studying Chemistry at high school gives a positive perception of the role of chemistry in the daylife and as an important subject in their respective scientific degree.

As for the high school survey this what completed, without notice, by the end of the academic course in order to make sure the student have a background about this topic. We collected a very high number of answers due to the fact that attendance is strongly controlled. In good accordance with the results previously commented the study of Chemistry gives a better understanding of the role of chemistry in nowadays society.

Nevertheless in both surveys the students ask, in percentages always greater than 75%, more practical lessons and more connection either to the academic degree and to daylife.

In view of all the above mentioned, and taking into account our experience in popular chemistry, we decided to prepare a set of experiences according to the objectives already listed in paragraph 3. The methodology followed is very similar to that already published for some of us for an interdisciplinary phenomenon such as fluorescence (García, 2012).

Therefore, in the experiment we present here, we start with the classical experience of the red cabbage (Heines, 1972) but extended to add the concept of colour and its measurement to the pH concept. Thus physics and chemistry are involved in harmony, being also an experiment which can be easily adapted to different educational levels and related to many other daylife phenomena such as dyes, green chemistry, color addition and subtraction, acid and basic foods, etc.

6. Conclusions

At the present, we are carrying out this kind of experiences in our laboratory with high school and first year undergraduate students. To the present we have detected a great students' interest and attitude towards learning these phenomena when presented in this format.

References

- García, J.A., Moreno, J.M., Perales, F.J., Romero, J., Sánchez, P., Gómez-Robledo, L. (2012). Fluorescence: An Interdisciplinary Phenomenon for Different Education Levels. *European Journal of Physics Education*, 3 (3), 30-35.
- Heines, V. The vegetable Chameleons. *Journal of Chemical Education*, 49 (9), 605-606.
- Pérez Mendoza, M. ; Moreno Gómez, J.I.; Sánchez Sánchez, M.P. ; Moreno Sánchez, J.M. ; Mota Ávila, A.J. ; Montoro Cano, C.; García García, J.A.; Carrasco Sanz, A.; Rubiño López, A.M. ; Méndez Liñán, L. Póster P505 . DESPERTAR EL INTERES POR LA QUÍMICA. La Química desde otra óptica. INDOQUIM 2012. Barcelona (Spain).
- Schmitz, C. LimeSurvey 2.0 <http://www.limesurvey.org>

MELTING POINT DETERMINATION. SIGNIFICANT LEARNING

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Abstract

The significant learning encourages the direct participation of the students in the scientific process. The activities that each student can perform, add up and with the result of each student the problem is solved. Transforming the prime materials in desired products is a task that involves concentration, dedication, observation, domain of techniques, proper handling of dangerous reagents, preciseness, etc. The proposed objectives in this experiment were: 1) Determine the melting point of substances pure and impure. 2) Use the melting point as purity criteria of solid substances. 3) Determine the melting point in two different containers of the same sample (capillary or coverslips). 4) Determine the heating rate of the melting point. 5) Apply the mixed melting point as identity criteria of the organic compounds. 6) Perform a sublimation of a product (warmed up in a grill and microwave). The next conclusions were reached: 1) Students reflected enthusiasm and concentration in performing the experimental work, they were led to think by themselves. 2) When the students realized their capabilities in the laboratory they felt satisfied. 3) In their written report they showed initiative and proposed new methods which were investigated by themselves. 4) The students provided some solutions to perform the experiment. 5) As a general conclusion, this practice allowed us to acquire skills to determine the melting points under different conditions and with pure or impure substances. 6) It was shown that significant learning has reached academic objectives, pose problems and solutions, throughout individual and team work.

Keywords: *Melting point, determination, significant, learning*

1. Introduction

This experiment focuses on the significant learning as the foundation of the significant knowledge; the focus of the educational institutions should be that each student, professor and investigator be a generator of knowledge. Significant knowledge is constantly transforming and the members of each generation make it their own, with the purpose of providing a solution to new problems. Knowledge is a collaborative effort to develop understanding and the process implies constant build up. Wanting to learn and know how to think are basis conditions, it allows the acquisition of new knowledge and the effective application of what was learned when needed. The key to achievement of knowledge is wanting to learn and knowing how to think. One of the differences between Significant Learning and Significant Knowledge is the Level of Education. Significant learning should be favored for high school students and Significant Knowledge should be favored university. In a traditional way of teaching a mechanical experiment is performed by following a set of instructions found in manuals as if they were "cooking recipes", where what to do, how to do it, and even what results should be expected are provided. This leaves the students with no other purpose than to observe a demonstration that an experiment works.

With methodology that is proposed in this essay, each student performs an experiment by changing variables and obtaining different results. The academic objectives are obtained by analyzing the results of each student and all of the results

combined, this way the student is led to think and deduce the role of each variable of the experiment, producing significant learning.

2. Objectives

1) Determine the melting point of substances pure and impure. 2) Use the melting point as purity criteria of solid substances. 3) Determine the melting point in two different containers of the same sample (capillary or coverslips). 4) Determine the heating rate of the melting point. 5) Apply the mixed melting point as identity criteria of the organic compounds. 6) Perform a sublimation of a product (warmed up in a grill and microwave)

3. Methods

The Following describe some of the methods used in this experiment.

Determining the melting point in a Fisher-Johns device.

Pure grinded substances are placed in a coverslips (A, A', B-B', C-C', D-D', E-E', F-F', and G-G), Coverslips were placed into the apparatus on the platen and Fisher Johns and the melting temperatures were determined. Previously mixtures were made in the following proportions: Sample A 100% Sample A 80% + 20% B, 60% Sample A + 40% B, 40% Sample A + 60% B, 20% Sample A + 80% B, 0% Sample A B + 100% and the melting temperatures were determined.

Determining the effect of the heating rate on the melting temperature.

Each student determined the melting point of a sample (A, B, C, etc.) at different rates 20, 40, 60, 80 and 100 volts and recorded every 5 minutes the temperature reached until fusion was reached, with the obtained data a Temperature (°C) vs. time graph was made to determine what the appropriate rate to properly determine the melting point.

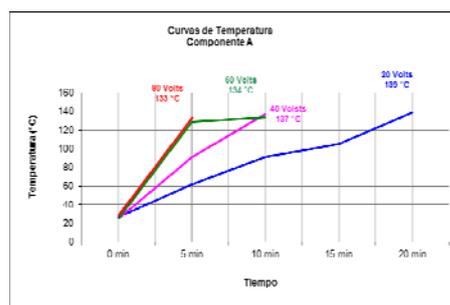
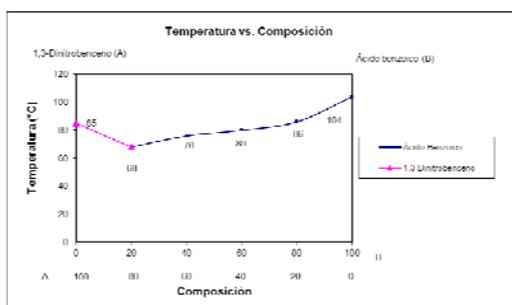
Determine the melting point by a Thiele tube

We introduce the finely pulverized substance (D, E and F) in a 4 cm long capillary tube, capillary tube is secured to both a thermometer and is held with a cork is inserted into the Thiele tube. It is heated with a Bunsen burner in a moderately form until there is a complete melting of the solid with in the capillary

4. Results

Determinación del punto de fusión mediante un tubo de Thiele

Substance	Ti.*-Tf* °C	time	Substance	Ti.*-Tf* °C	time
A	85-90	16 min	C	158-160	1 min 50 s
A'	85-113	10 min	C'	154-158	9 min 32 s
B	121-123	32 s	D	24-38	8- 58 s
B'	119-120	41 s	D'	38	24-56 s



5. Discussion

The following problems were posed according to the proposed objectives:

1. How is the melting point affected by the purity of a product?
2. How is the melting point of a pure solid substance affected by the concentration of an impure substance?
3. Does the container affect the accuracy to determine the melting point of a product?
4. Does the heating rate affect the accuracy of the melting temperature?
5. How the identity of two products is determined using the melting point as criteria?
6. How is the sublimation of a product made?

The following solutions were given:

- 1) An impure product melts at a lower temperature than a pure product.
- 2) The melting point decreases in a impure substance.
- 3) The Thiele tube is less accurate than the Fisher.
- 4) There is an optimum heating rate for determining the exact melting point of each substance.
- 5) The melting point of a mixture of two identical products is equal to identify each product; the melting point of a mixture of two different products is lower than the melting point of each.
- 6) The sublimed product is heated to a suitable temperature in a closed container so that the upper part has a lower temperature and adheres the sublimed product.

6. Conclusions

1) Students reflected enthusiasm and concentration in performing the experimental work, although confusion was shown initially, since this was a completely different way to work than what they had done before, which means they had no previous experience and they were led to think by themselves. 2) When the students realized their capabilities in the laboratory and that the data they had obtained could be trusted, they felt satisfied. 3) At the end of the experimental session and turned in their written report they showed initiative and proposed new methods which were investigated by themselves. 4) Regarding the issues raised at the beginning of the experimental session, the students provided some solutions to perform the experiment. 5) As a general conclusion, this practice allowed us to acquire skills to determine the melting points under different conditions and with pure or impure substances. We also learned to sublimate various products, heated by grill, Bunsen burner y microwave. 6) It was shown that significant learning has reached academic objectives; pose problems and solutions, throughout individual and team work.

References

1. Chang, R. (2007) Chemistry. 9th ed. Mc Graw Hill, Mexico.
2. Fieser, L.F. (2004) Experiments organic chemistry. Editorial Reverte, SA Barcelona, Spain
3. Morrison, R.T.; R.N. Boyd (1998) Organic Chemistry. 5th ed. Morrison, R.T. and Boyd, R. N., Organic Chemistry, 5th. Edition, Addison Wesley Longman Ed de Mexico, SA de CV, Mexico
4. Mc Murry, J, (2001) Organic Chemistry, 5th. edition, Mexico, Ed International Thomson Publishers, SA de CV, Mexico

PILOT STUDY ON DIDACTICS OF VOLLEYBALL ON A GROUP OF ATHLETES UNDER 13

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Abstract

Text The didactics of Volleyball traditionally is imparted by the coach with tutorials that have the theoretical basis in the Cognitive approach. The teaching methods used by the coach to the group includes the following exercises *Partial, Varied, Randomized and Mental training*. They refer to models of motor control called *Open Loop, Closed Loop and Generalized Program*. In other hand, there is also another approach called *Ecological-Dynamic* where the coach builds a setting or a learning environment aimed to the variety of learning. It refers motor control of Motor Imagery (mirror neurons) and Freedom Degrees theory (*reduction, exploration and capitalisation of the degrees of freedom*). *The aim is to check the learning of technical skills of volleyball with workouts based on two different scientific paradigms and compare the results of the different tutorials. Method is experimental between two groups in same team of 18 athletes 13 years old it is made by two steps. 1) the tutorials will be given for half an hour in every training session.*

The athletes will be evaluated before and after the session testing the accuracy of three motor and sport skills of volleyball: *spike, dibbling and receive*. 2) Monitoring through cards of detection of the 3 technical skills according to the following process: A) Introduction of new tutorials relating to the three motor sport skills; C) Variation of the setting D) Cooperative learning method E) Tutorials in "locking" of some overall movements in order to reduce the wide range of excursions of the movement. The results show the difference between two skills by cognitive and ecological-dynamic approach. The lost one is better to learn volleyball in similar manner to play in real situation.

Keywords: *Volley, Ecological-Dynamic, approach Cognitive*

1. Introduction

The didactics of Volleyball traditionally is imparted by the coach with *tutorials* that have the theoretical basis in the cognitive approach. They, illustrated in greater detail by the coach, are of *Partial type, Varied, Randomized and Mental Training*. Refer to the models of *motor control to Open Circuit and Motor Program Generalized*.

The partial tutorial consists in making exercise a motor skill complex initially in a simplified form. Movements with a certain degree of difficulty, very complex, can be simplified by dividing the exercises or reducing the speed or requests for precision. (Wightman & Lintern 1985).

For all forms of partial tutorial is the rule that is obtained of learning only as long as the techniques of partial tutorial, that is fragmentation, segmentation and simplification, does not adversely affect the deep structure of the motor program generalized. *The tutorial randomized and that varied* are other techniques of tutorial that find their justification in theory engine programs generalized. The theory of the programs motors has generalized methodological implications-didactic on direct choice of which provide information in the feedback. This choice depends on the type of error made by the student.

The techniques of mental repetition consist in think about the aspects cognitive and procedural of the action, while the mental representation is to imagine the conduct of an action.

2. Design

In the teaching of motor activities there is also another approach called *Ecological-Dynamic* where the coach does not require the tutorials but builds a setting learning environment aimed at variety of learning. It refers to the models for the control of the imagination and mobility of the theory of the degrees of freedom in three consecutive steps for learning impairment: *Reduction, Exploration and Capitalisation* of the degrees of freedom.

According to the ecological approach "learn" means being able to find progressively the mobility solution best for a given task in a given context. Emblematic is the expression, coined by Bernshtein, "repetition without repetition": practice does not mean always repeat the same solution to a given task, but repeat over and over again the process of solving the task itself.

If learn movements means optimizing the process of solving tasks engines, resulting didactic implications different from those prescriptive own cognitive approach. In heuristic learning the teacher must assist the student in research autonomous mobility solutions.

3. Objective

If the learning task is too complex, you should not impose constraints to the learner in telling him how prescriptive manner as simplify the implementation mobility, but you must apply constraints to the environment.

4. Methods

Experimental Research on a team of 18 athletes under 13. Initially, the team will be evaluated with cards custom detection with a monitoring on 3 fundamental steps of volleyball: reject the ball with accuracy, do 3 touches in-game, finalize the point in squashed.

Then the team will be divided into two groups of 9 athletes chosen at random for roles. The annual program of training future envisage that one of the two groups , in two of the three workouts per week, will perform exercises with heuristic method for a duration of 30 minutes. We will use the method "*COOPERATIVE LEARNING*". The Cooperative Learning is a specific methodology of teaching through which students learn about helping each other and feeling responsible for the reciprocal path. The coach assumes a role of facilitator.

5. Discussion

The testing in input, ongoing and output will be detected by the coach on the field.

I Phase: September-October-November

II Phase: December-January-February

III Phase: March-April-May

I PHASE:

By the detection custom made on the September 18th 2012, all the athletes showed that:

- On the first indicator "*Reject the ball with precision*" on 18 athletes there are seven positive, eleven negative, nobody great.

- On the second indicator “*Make three touches during game*”, eight athletes are positive, ten negative
- On the third indicator “*Quality of attack*”, all the athletes are negative

II PHASE:

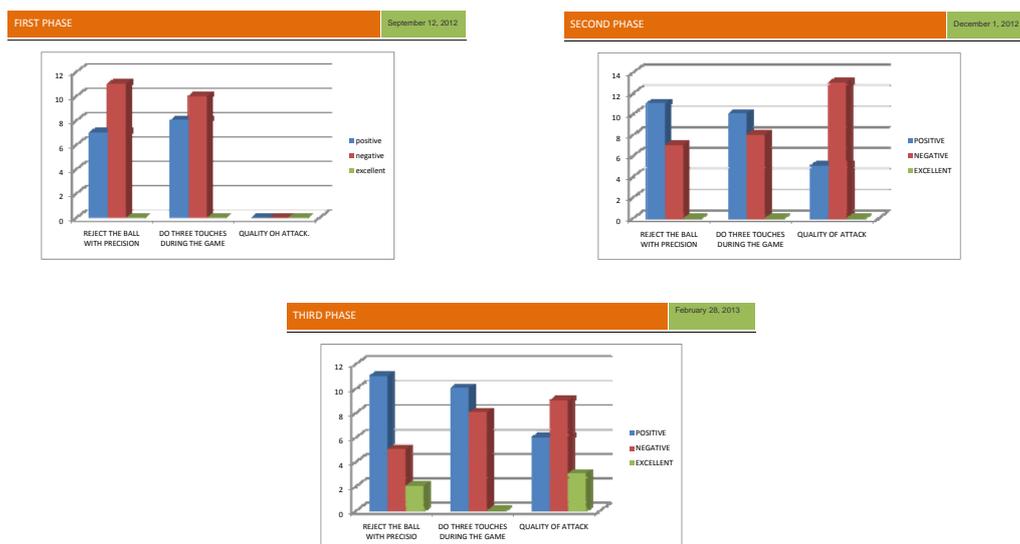
By the detection custom made on the December 1th 2012, all the athletes showed that:

- On the first indicator “*Reject the ball with precision*” on 18 athletes there are eleven positive, seven negative, nobody great.
- On the second indicator “*Make three touches during game*”, ten athletes are positive, eight negative
- On the third indicator “*Quality of attack*”, five athletes are positive, thirteen are negative.

III PHASE:

By the detection custom made on the February 28th 2013, all the athletes showed that:

- On the first indicator “*Reject the ball with precision*” on 18 athletes there are eleven positive, five negative, two great.
- On the second indicator “*Make three touches during game*”, ten athletes are positive, eight negative
- On the third indicator “*Quality of attack*”, six athletes are positive, nine are negative, three are great.



6. Conclusions

Demonstrate how the ecological approach-dynamic can find educational implications more than the cognitive approach. It is therefore considered appropriate to investigate the two approaches (cognitive and ecological-dynamic) in order to improve the teaching practices in the light of the findings, given that there are no direct comparisons documented.

References

Raiola G. 2008 Il ruolo della didattica negli ambienti di apprendimento educativo sportivo. Aracne ,Roma,Italy.
 G.Raiola “La Complessità dello studio in ambito sportivo educativo” Pensa Editore(2012)
 C. Pittera P.Pedata P.Pasqualoni “Pallavolo Dentro il movimento” Volley for 11-14 years old children (2010)

SPORT AS SCHOOL OF LIFE TEACHING RESILIENCE THROUGH PRACTICING SPORT

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Abstract

Can sport enhance resilience? The main goal of our study is to highlight the positive effects of sport on emotional intelligence and, in particular, to evaluate how it can educate children to a greater resilience. Sport is an area that can promote resilience in a structured way. Several studies show that the regular practice of a sport can positively affect a child's mental well-being, increase self-esteem, and improve problem-solving skills, autonomy, empowerment and internal locus of control; these can be considered protective factors for enhancing resilience. In our study, the relevant literature was reviewed through the theoretical argument approach. The different theoretical perspectives draw a conceptual framework which suggests that interpersonal relationships, commitment, respect for others and for the rules, responsibility, motivation, clarity of objectives are key factors for the development of resilience.

Sporting activities create conditions that favor fulfillment of the needs of sociality and affiliation, while exposing individuals to difficult situations calling for greater awareness of their own attitudes in order to overcome challenges and obstacles. Sport, through the interpretation of roles and functions, can be considered a preparatory course that makes the children physically and psychologically more resistant to stress. Sport activities in schools are an important tool for educating to resilience, which can be used to develop children's ability to tolerate frustration, relate to others, manage emotions and take the appropriate decisions.

Sport: a metaphor of life that teaches us how to fall and rebound stronger after a defeat.

Keywords: Resilience, sport, primary school, empowerment, education

1. Introduction

"Resilience" is a term derived from metallurgy which refers to a metal ability to resist forces to which it is subject; in the same way, in psychology, it describes people's positive capability to cope with stress and adversities, overcome them and eventually leave them behind and feel reinvigorated, if not even transformed, by them. Therefore, the term resilience does not only refer to someone's fortitude or willpower, but also involves the person's ability to manage stress effectively, face everyday's challenges, recover from disappointment and trauma, determine clear and real objectives, solve problems, easily relate to others as well as treat themselves and others in a respectful manner (Trabucchi, 2007). Psychologists have identified several features/factors of protection that enable a good adjustment and transformation process and that could be divided into two main categories:

– Personal features or internal resources: self-esteem, autonomy, empathy, problem solving skills, relational skills and creativity, added to the "planful competence", that is, the ability to plan important decisions in life, make plans for the future and pursue objectives;

– Family and environment related features or external resources: cohesion and family affection, parental competence, secure attachment, presence of significant

relationships and of both formal (school) and informal (friends, neighbours) forms of support, which take the origin of the child into account. As a matter of fact, resilience is built as a form of interaction between the person and the environment. Hence, it has different forms of expression in different cultures. (Malaguti, Cyrulnik, 2005)

If teachers become aware of those elements characterizing the mind set in a resilient person, all their interactions with children can aim to reinvigorate this mind set, whether children face big traumas or not. It can therefore be stated that a person develops resilience in a process of growth, depending on the experiences and the encounters they make, the ability to keep self-confidence alive, to create a positive image of themselves and to see a way out even under difficult circumstances by looking for new resources. Therefore, resilience is a process and not a (present/absent) feature of a person.

2. Objectives

This project aims to understand the impact of sport on emotional intelligence and, particularly, on the development of resilience. To be able to know the various aspects of sport influence it can be useful to promote a "positive education" and, for this reason, the study group points to the drafting of protocols that meet the growth needs in young people especially.

3. Method

Our research group has started carrying out an examination, through a theoretical-argumentative approach, of the literature of reference. The theoretical perspectives were analyzed to try to put on a conceptual framework in which interpersonal relations, commitment, respect for others and rules, responsibility, motivation, clear mind on objectives become established as essential factors to develop resilience. Finally, following the carried out studies, we also tried to achieve, from a teaching point of view, a sport-oriented protocol able to set the necessary criteria to further develop resilience in pupils.

4. Results

From the research conducted, it was found that the psychologist Bendtro has suggested a model, the "Circle of Courage", highlighting the link between resilience and the development of emotional competences on the basis on four variables:

- belonging: it shows the need to be part of a community or a group;
- independence: it represents the sense of autonomy, of self-control but also of influence on others;
- mastery: it describes the physical, cognitive and social competence;
- generosity, which is the need for mutual help within the person's own community.

In Bendtro's view, these values reflect aspects of self-esteem, essential for the development of resilience among the young at risk. (Bendtro, 2002). We can say that sport provides the basis so that these qualities develop and create a favourable ground for the development of that emotional and social competence lying at the heart of the development of a stronger resilience. For example, a team sport requires the cooperation between teammates, accompanied by the "sacrifice" of personal interests in order to favour the team needs (belonging and generosity), same as an individual sport is the highest expression of oneself (independence and mastery).

On his side, the psychologist Seligman has launched a program in schools named "Penn Resiliency Program" (PRP), whose objectives are:

- increase the pupils' capability to face everyday's stress;

- promote optimism by teaching them how to see problems in a realistic and flexible perspective;
- teach them to become assertive, work in creative brainstorming activities and make decisions (Seligman, 2011).

This theory implies an operational protocol based on the aforementioned items and that helps the teacher work with:

- unexpected didactic physical exercises (in compliance with the first point of the PRP);
- comment on pupils' exercises and reactions by always finding positive elements and going beyond the principle of standardization (in compliance with the second point of the PRP);
- create sport-oriented situations with set deadlines in order to make pupils understand the concept of priority as well as give multiple solutions aimed to educate them to creativity (in compliance with the third point of the PRP).

5. Discussion/Conclusion

The aforementioned processes are strongly supported by sport activities practised by children, especially when it comes to a game with rules, because a "functional bridge" is built and consolidated, a bridge that combines personal instincts with strategies to adjust to the surrounding environment. Through training, children are both subject to stress and guided towards an own constant physical and mental reorganisation which destabilises them. Subsequently, their skills improve because this process is consistent with the children's primary needs, hence the transformation of a state of discomfort into a future state of general wellbeing.

Sport activities practiced at school level are an important tool to educate to resilience, a tool that can be used to develop in children the ability to tolerate frustration, relate to others, manage feelings and make adequate decisions. If you want to summarize, as a matter of fact, practising a sport activity on a regular basis has a positive impact on psychophysical wellbeing, increases self-esteem, improves problem solving skills, autonomy, empowerment and internal locus of control skills, all of which are believed to be factors of protection for the development of resilience. It is a true fact that sport pushes stress to the limit and rewards those people who are able to manage it best (Trabucchi, 2012).

Practicing a sport activity involves the ability to manage difficulties, be up to face various problems which follow one after the other during time as well as confront all different types of discomfort.

References

- Bendtro, L., Brokenleg, M. & van Bockern, S. (2002). *Reclaiming Youth at Risk: Our Hope for the Future*. Bloomington: Solution Tree Press.
- Malaguti, E., Cyrulnik, B., (2005). *Costruire la Resilienza. La Riorganizzazione Positiva della Vita e la Creazione di Legami Significativi*. Trento: Edizioni Centro Studi Erikson.
- Ravizza, K., (2006). *Increasing Awareness for Sport Performance*. In J.M. Williams (ed.), *Applied sport psychology: Personal growth to peak performance*. (5th ed.) New York: McGraw-Hill.
- Seligman, M.E.P., (2011). *Building Resilience*. Harvard Business Review.
- Trabucchi, P., (2007). *Resisto Dunque Sono. Chi Sono I campioni della Resistenza Psicologica e come fanno a Convivere Felicamente con lo Stress*. Milano: Corbaccio.
- Trabucchi, P., (2012). *Perseverare è Umano. Come Aumentare la Motivazione e la Resilienza negli Individui e nelle Organizzazioni. La Lezione dello Sport*. Milano: Corbaccio.

SPORT AND INCLUSION PROCESSES IN EDUCATIONAL FIELD

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Abstract

In presence of a disabled subject, team games sports represent the best kind of expression and construction of the values of solidarity and healthy confrontation, where the student is not considered for its difficulty, but because of its "different" potential, designed as a resource. The sport can be the ideal training setting in the development of the social identity of the disabled, using simulation games that invite all students to identify themselves in different roles with different perceptions of life (role playing) goes well perfectly with methods of cooperative learning. This approach stimulates sense of solidarity among the peer group turning, to disabled and not only, the love of life and hope.

Our research group wants to examine, on a theoretical-argumentative level, conditions and variables necessary so that the sport is a valid approach to become wealthy and improve the available and unexpressed capacities, feeding self-esteem. Through better awareness and self-knowledge and its limits, motor and sport activities, in fact, are the ideal tool to reach the disabled the self-respect and dignity, offering more opportunities to be able to integrate both at the work and social place. To conclude, research shows clearly that sport for the disabled aims to facilitate the achievement of three main targets:

- awareness of their limitations and of their potential;
- self-esteem and self-efficacy leaving out of consideration the results achieved in the performance;
- socialization, integration and social inclusion, which are productive resources of society.

Keywords: *Inclusion, disability, sport, values, education*

1. Introduction

The sport today plays an important role in youth development and the dissemination of those important values such as loyalty, perseverance, friendship, sharing, solidarity, inclusion. These values have, in recent years, developed more and more the sport as one of the characteristic phenomena of modernity, almost a characterizing factor able to determine new needs and new perspectives to all humanity. The sport, for his fundamental connotations, has spread around the world, overcoming the barriers of diversity of cultures and peoples. The educational potential of sport and aggregating must serve to counter any distorted aspect, making possible the full development of the person and his intellectual and physical well-being. These values, in an educational context, should be the starting point on which to construct the growth of future generations.

These unique aspects of the sport, in the presence of persons with disabilities, are the most appropriate tool in the construction of the values of solidarity and a healthy debate, in which the student is not considered for its difficulty, but instead is based on his potential "different", conceived as a resource.

The active and continued participation with this type of instrument can generate a collective growth of the group that is confronted on thematic studies and

enriched by the individual with their own experiences. This process does not isolate nor generate closure in those who participate, but gives life to a series of new possibilities for exchanging experience and debate among students. To benefit from these advantages are not just students, who obviously benefit from these discussions and dialogues with others, but also the teachers. So we generate a condition in which all participate in the construction of the process of learning, building and interpreting what goes gradually acquiring (Baldassarre, 2011)

"The collaborative group learning realized in this way on the same subject of discussion and argument, a path that comes from the wealth of all the interventions that highlight the complexity of knowledge "(Jonassen D., 1993)

This approach encourages a sense of solidarity in the peer group, enhancing the participation of all members, and not just of people with disabilities.

2. Objectives

Our research group aims to examine the variables needed to create the conditions under which sport is a powerful tool for inclusion, for improving individual skills, for highlighting the untapped potential and for nurturing self-esteem.

3. Method

The research group has conducted a study based on the theoretical model of argumentation, starting from a close examination of the scientific contributions that have debated this theme and that have allowed reflection on the variables necessary to create favorable conditions.

Thanks to the numerous initiatives promoted on the field by the teachers and to the multiple traceable empirical evidence, the interest for this theme and the necessity to construct inclusive didactic paths, in which the motor and playful-sports activities represent the motivational fly-wheel, are manifested.

In this sense, our study group has analyzed some elements that conduct us to better define the possible protocols in the setting of school context.

4. Results

The studies and research conducted on the role of sport for self-esteem and body awareness in particular for people with disabilities and the role of sport in shaping the character in an harmonious and balanced way, in the social participation and inclusion have already pointed out the importance of such activities in education. Team work, membership of a sports team develop a new feeling of participation that transcends individuality and diversity unlike what normally happens in a classroom (Gomez Paloma, 2012).

Education should use the dynamics of sport to enhance this feeling in order to preserve all its positive components for the achievement of objectives. In addition, the healthy sports competition represents a possible safety valve in which natural characteristics of man, such as aggression and tension flow in and dilute themselves. In fact, sport has been defined as "total social fact and as an extraordinary sensor of social change" (N. Porro, 2001).

Through better awareness and understanding of themselves and of their limitations, physical activity and sport is the ideal tool to reach all students, generating those values such as respect for self and others, dignity, cooperative participation that offers the best opportunities for integrating both at school, at work and in social venues.

Empirical evidence clearly shows that in sports that see the participation of students with disabilities, the following objectives are easy to reach:

- awareness of their limitations and of their potential;

- self-esteem and self-efficacy regardless of the results achieved in the performance of activities;

- socialization, integration and social inclusion. (Sherrill, C. Williams, T., 1996)

Following these reflections, within the traced cultural-scientific frame, we can affirm, therefore, that the variables needed for the realization of educational-sports activities for disabled are:

1. the meaning attributed to sport in a socio-inclusive setting;
2. necessity to empathize from subjects with normal ability in the roles and functions of disabled;
3. typology of didactic deliveries characterized by sport;
4. socio-cultural context and family participation.

5. Discussion/conclusion

One of the expressions most commonly used in recent years is "to team", to bring up the need to rediscover the value of cooperation, solidarity and the achievement of common objectives.

This expression in the school, through sport, has become an ethical point of reference, an example of how to channel passions, emotions, and how collective ambitions go beyond the concept of individuality and enhance diversity.

The results of the studies and research investigated and experiences cited, showing that the practice of sports activities in the educational environment, is of key importance in the process of inclusion of students with disabilities and are able to promote the learning processes to achieve some or all of objectives.

Sport, therefore, can be used for its characteristics in the development of the social identity of people with disabilities, using simulation games that invite all students to identify themselves in different roles with different perceptions of life (RPGs), through a method of cooperative learning. (Dewey J, 1916; Comoglio M., 1999; Vygotskij L., 1978).

In conclusion we can draw lines for guidance for future experimental research that can demonstrate with statistical data that sporting activities are key to facilitating the integration, inclusion, participation and awareness of their limits and their skills in all students, especially in those subjects who presented relational difficulties and integration into the academic and social spheres.

References

- Gardener H., (1991), *The unschooled mind. How children think and how schools should teach* – Basic Books – Harpoer Collins Publishers (1991) Trad. It. A cura di Rodolfo R. (2007), IV ed., Milano: Feltrinelli Milano (2007) pp 230-231
- Jonassen H.D., (1993) *Structural Knowledge: Techniques for Representing, Conveying, and Acquiring Structural Knowledge* – Lawrence Erlbaum Associates Mahwah, USA
- O'Neil H.Jr., Perez R.S. (2003) *Technology applications in education*, LEA, Mahwah (Eds.).
- Gomez Paloma F. (2012), *La disabilità tra didattica e sport*, Napoli: Simone Editore
- Sherrill, C. Williams, T., (1996), *Disability and sport: psychosocial perspectives on inclusion, integration, and participation*, Sport Science Review 1996, n. 1
- Raimondi P., Vincenzini O., (2006), *Teoria Metodologia e Didattica del movimento* – 2° Ed. Perugia: Ed. Italiana Margiacchi-Galeno.
- Baldassarre G. (2011) *Teaching motor activities at Italian infant schools based on the Ministry of Education sul testo New technologies and movements to support disabilities in childhood* – Ed. Savaria University Press.
- Scarpa S. (2011), *Il corpo nella mente. Ruolo della pratica sportiva nell'auto-descrizione del proprio fisico in adolescenti e giovani con disabilità motoria*, Tesi di Dottorato – Università di Padova

CASE STUDY OF ENGINEERING R&D METHODOLOGIES IN FAILURE ANALYSIS (FA) APPLIED ON NANOTECHNOLOGY OF SEMICONDUCTOR

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Abstract

Many engineering R&D methodologies what we learned and saw—conventional theories—needed to be restudied to apply to nano-engineering and education of fundamental training is extremely important due to the fact that nano-structure components account for a high proportion of costs, and serve critical roles in newly designed products. Failure analysis is fundamental to the design research and development methodology of semiconductor devices and reversed engineering also provide us the new learning way to produce more robust products instead of suffering a nimiety of trial-error methods. The role of failure analysis in the models, methodology, and mechanisms evaluation for improving nano-scaled robustness of intended functionality in nanotechnology were be also discussed in this case study.

Keywords: *Failure Analysis, nanotechnology, mechanism, semiconductor, R&D methodologies.*

1. Introduction

As the break-neck speed of nano-technological innovation, there has been a series of critical convergences in previously disparate technology areas; semiconductor development is presently being considered as leading candidates for influencing our daily life. These emerging materials, nanoelectronic architectures, and nano-MEMS platforms will pose severe challenges for testing, reliability, and metrology techniques required to support such development^[1]. Therefore, having a clear engineering R&D methodology is not only deemed important to push forward technology development, especially in the industrial science of technology, but also help increase reliability and efficiency, while maintaining effective production schedules to produce current, solving problems to find out the cause of failure mode, and future electronics at the lowest possible cost. Clearly outlined directions and procedures tend to increase consistency as well as productivity, and to create work that can be repeated elsewhere, which is a crucial attribute of rigorous scientific research. Nowadays, many engineering R&D applies to their unique methodology in the specialized field for teaching and learning, so that others (followers or noviciate) can be easily imitated and replicated the experienced research by themselves or identify errors in the methods used which may have created skewed results. For the engineering R&D methodologies in FA application, we must know that an analysis of potential failures helps designers focus on and understand the impact of potential process or product risks and failures. Owing to the reliability of nano devices is still far from perfected. Failures in micro-system, and nano-systems can be traced back to thermal, mechanical, chemical, electrical, or combined origins thereof; which may be caused by different manufacturing stages such as wafer processing, packaging, and final assembly; and post-production stages such as transportation, and usage. With the help of statistic experience, the crux of FA is using a variety of sound analysis methods provide multiple “lines of evidence” and multiple lines of evidence often deepen understanding and strengthen arguments what we debate and suspect.

In this paper, we will not describe detail in those conventional methodologies of FA techniques, what we focus is on the invaluable learning process of development for FA and systematic approach for the design of integrated technology solutions. Per FA of reversed engineering case studies, particularly useful strategy, for addressing how and why questions within engineering context. Thus, it's not only build a teaching and learning process of imperceptibly influence but also satisfy customers' evaluation demand which eliminate the misgivings of quality of product what we make.

2. Methods of optimizing FA support and Objective of effectiveness

The purpose of FA jobs applied on nanotechnology of semiconductor enable R&D engineers to create FA plans to solve particular failure modes and ensure the quality of developing products are at low risk. Engineers of R&D should know the integration of knowledge from different technology domains, which means we should use a new interdisciplinary solution to reach our target. Usually, we could fumble our way in this process of FA techniques and elucidate what we hypothesize theory is right or wrong in the end as well as provide manifest phenomena and methods in this learning curve of case study. Here we address "3-Step Plan" for optimizing FA support of engineering R&D methodology and publish/build our data base as a reference for related persons.

1. *Review FA Tools & Methodology* to consider approaches to Engineering FA.
2. *Team with Analyst.* Share background and scope of failing device. Plan for an optimum FA Workflow. Invite Analysts to lead or participate in Root Cause Investigation.
3. *Document* failure details and agreed upon workflow in your FA job submission. Including supporting documents (pinouts, design images, etc...)

Per "3-Step Plan" of FA support of engineering R&D methodology, we could see the practical effectiveness dramatically in our real case for industry, especially in efficiency of FA cycle time as we implement this strategy from the end of 2011 depicted in Fig. 1a. It pinpointed that the original regulation of cycle time for managing customer returned cases is only 6 days in analysis to find out the root cause of failed samples and failure mode. However, after using this streamlined plan, we could curtail the cycle time from 6 days to 3.5 days even the job quantity is more twice enlarger than before. This amazing achievement attributes to ordinary strict discipline followed by our solution pyramid scheme (Fig. 1b). Not only chosen suitable person from various domains with basic FA training, but we have

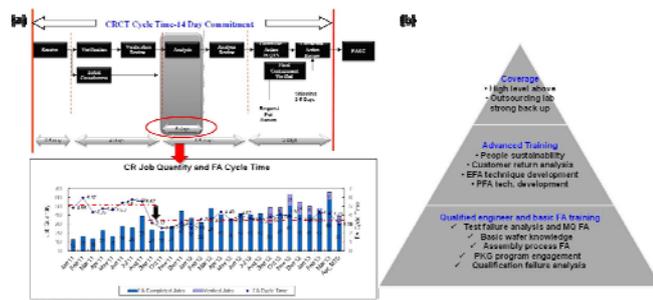


Figure 1. (a) CRCT cycle time of 14-day commitment and the performance of FA cycle time changed after the plan of engineering R&D methodology implemented from the end of 2011. (b) Solution pyramid scheme of FA training and support.

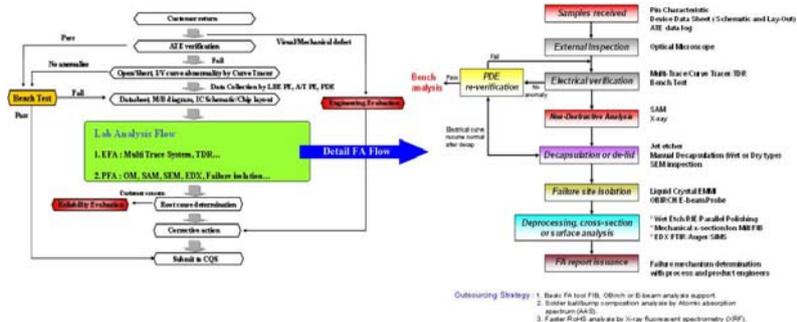


Figure 2. The basic process of FA flow inclusive of the standard of customer complain case and its analysis flow.

further advanced FA training as well as providing all coverage of strong back up. Next, when we receive a case or face a dilemma, we could follow standard FA flow to save time and find out the root case and even realize the rudimentary characteristics from us or competing opponents. This basic process was illustrated in Fig.2, including electrical FA (EFA) and physical FA (PFA) analysis, functionality of non-destructive analysis and destructive analysis; it also provide the guidelines of total process when we receive customer complain cases, how we make it in short time and step by step. In the following example of case study, it revealed the same operating efficiency and get unexpected experience and researched results for us to learn.

3. Case study of chemical etching rate of EMCs (Epoxy Molding Compounds)

In this case study, we comply with “3-Step Plan” for optimizing FA support of engineering R&D methodology. A novel decapsulation technique imposed on different packages (TSSOP/QFP/BGA) by combining acid etching methods and laser ablation was induced for the critical package geometries. The successfully decapsulation for entire Cu wire from ball bonds to stitch bonds and the Al pads can be achieved. Consequently, the selectivity of laser ablation also offers a new avenue in the area of network. Besides, the wet etching rate was related to the surface roughness of the EMC, the attributes of cured resin chains, filler distribution and surface potential for functional sites. In addition, the results of thermal analyses demonstrated that the increase in the amount of silica content in the EMC can further improve the thermal stability of the polymer backbone. A lower wet etching rate was obtained for CEL-9700HF-10XT EMC due to its extraordinary resin of biphenyl epoxy, well physicochemical properties and high cross-linked density. Also, the high content of silica filler can result in the difficulty in the wet etching. This study proposed another way to inspect the wet etching rate of EMCs influenced by their physicochemical properties in order to choose proper decapsulating recipe for failure analysis in the future as well as set a database for the characteristics of various EMCs. The outcome were illustrated in Fig. 3; all details were published as we research previously [2].

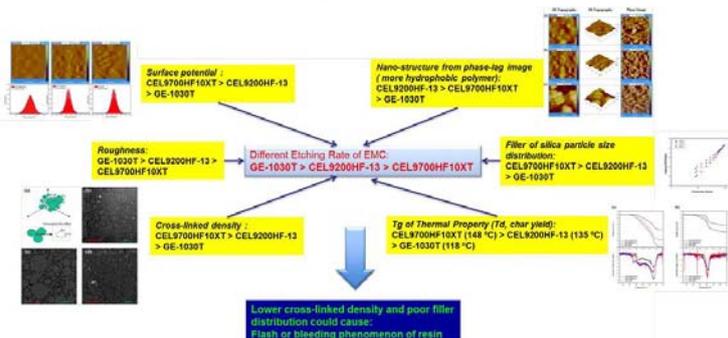


Figure 3. Different etching rate of Epoxy Molding Compounds (EMCs) by FA ratiocination and their results.

5. Conclusions

This work focused on the engineering R&D methodologies in failure analysis applied on nanotechnology of semiconductor. We address “3-Step Plan” for optimizing FA support of engineering R&D methodology and successfully get the feedback from customers’ satisfactions with accuracy and effectiveness. The case study would also demonstrate their correlations between the importance of FA expertise and perform the good learning experience for engineer of R&D in nanotechnology.

References

- (1) M.C. Roco, “International strategy for nanotechnology research and development,” *Journal of Nanoparticle Research*, 2001, 3, 353-360.
- (2) C. P. Liu, Y. F. Liu, C. H. Li, H. C. Cheng, Y. C. Kung and J. Y. Lin, *Microelectronics Reliability* 2012, 52, 725–734

AEROBICS FOR DISABLED IN EDUCATIONAL FIELD

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Abstract

Sports activities for disabled people can improve the quality of life by allowing them to achieve the highest possible autonomy. Sport, by providing ongoing opportunities to demonstrate courage and ability, becomes an effective tool for social recognition and reward. It can be life gym that offers the opportunity to enhance their individual skills and spend them productively in society, therefore maturing a greater openness to this type of disability (Special Olympics). This project promotes the Aerobic Gymnastics as a sport that can enhance the educational aspects aimed to increase the satisfaction level of physical activity, to increase the improvement of the self-esteem, social relationships expendable in various contexts that life offers. The goal of the project is to assert the value of sport as a relational, and social tool and, where possible, to enhance the quality of motion activity as the most suitable instrumental method to achieve satisfactory results. The purpose is to organize 20 lessons, aiming to exploit the autonomy, self-determination and self-esteem of the person with intellectual disabilities to improve the quality of their living conditions. One of the most commonly used tool for assessing of the enjoyment in motor activity is Phisycal Activity Enjoyment Scale (PASE). The children will play group choreographies and exercises in couple so as to exploit even more the relational component. Personal satisfaction, safety in social relations, group cooperation that have been established in the group, will help the children to acquire greater confidence in themselves outside of the context in which it is proposed.

Keywords: *Aerobic Gymnastics, Sports Education, Test of enjoyment*

1. Introduction

This project promotes the Aerobic Gymnastics as a sport that can enhance the educational aspects that aim to increase the satisfaction level of physical activity, increase self esteem and establish new social relations be spent in various contexts that life offers. The Aerobic Gymnastics is the ability to perform continuous, complex movement patterns originating from traditional aerobics, at high intensity, in perfect integration with the music accompaniment (L. Righetti, 2007). A good program of activities for the recovery of autonomy and the improvement of the quality of life must also include cardio "reconditioning" exercises. In this paper we will mainly deal aerobic work for subjects with different motor skills, experiencing for the first time the aerobic gymnastic.

2. Design

The following research design was so divided: Laura Rio oversaw the argumentative part of the work, focusing on tools for the type of research; I have experienced the practice regarding aerobic exercise, dividing classes by choosing exercises suitable for the disabled and the graphics on the results of the project. Finally, Professor. Raiola has reviewed all the work making the right changes.

3. Objective

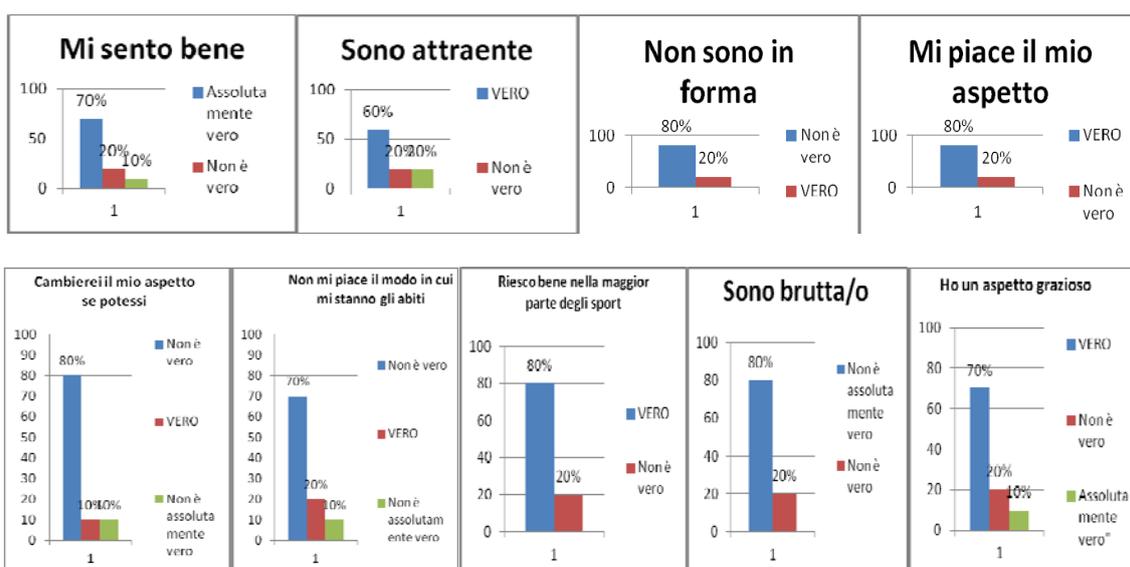
The project aims to fully assert the value of sport as a relational, social tool and, where possible, improve the quality of motor activity, as the most suitable instrumental method in order to achieve satisfactory results.

4. Methods

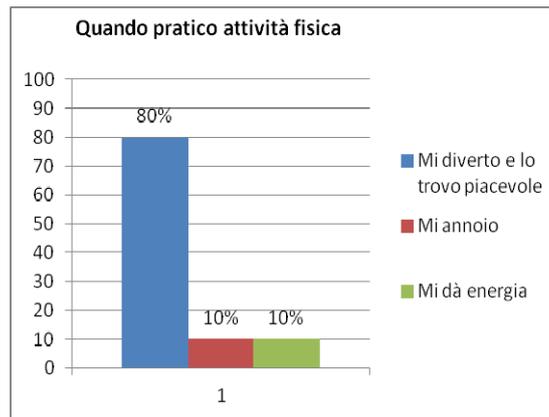
The project involves the construction of 20 lessons of Aerobics to propose an association that focuses on sports for the disabled. The group considered consists of 10 children with various intellectual and / or relational disabilities. The boys will perform group choreographies with musical accompaniment and exercises in pairs so as to exploit even more the relational component. In these lessons an expert in this discipline will teach group dances and specific Aerobics exercises and, at the end of each lesson, will measure the appreciation level of the work through a questionnaire. They will perform choreography by inserting the typical basic steps of aerobics (knee ups, jumping jacks, lunge, kick). One of the most commonly used tools for assessing the enjoyment in motor activity is Physical Activity Enjoyment Scale (PASE) (Kendzireski & DeCarlo 1991). The test (revised and validated in Italian by Carraro, Young and Bonazza 2008), is composed of 16 "bipolar" items with 5 possible answers for each statement. A second assessment tool will be to evaluate disabled person's self-esteem, through the TMA (Test of multidimensional assessment of self-esteem by Bruce A. Bracken). Each statement can be answered by ticking the box to "absolutely true", "true", "not true", "is absolutely not true." The two tests are useful for research projects designed to examine the relationship between multidimensional self-esteem and other psychological constructs (e.g., self-concept, self-efficacy, etc.). The growth of self-esteem can be beneficial even in the relational and social contexts of everyday life, thus increasing the self-confidence and mastery of their bodies as "differently skillful body".

5. Results

TMA Test Results



Results satisfaction questionnaire: Test PASE



6. Discussion

During the aerobics classes the expert on the subject has given during all the lessons the satisfaction questionnaire and the self-esteem questionnaire. By comparing the different responses from the beginning to the end of the program one can note an exponential growth as regards the satisfaction questionnaire of disabled people. In the final assessment it comes out that: 8 out of 10 children have responded positively to the questionnaire, agreeing to responses like "I feel good", "I find it pleasant", "I'm having fun." Only 2 out of 10 children have chosen the item "I am unsure or neutral." With regard to the test on self-esteem, the children have showed a significant increase, reaching high levels of self-esteem compared with baseline. In fact, while initially the commonly collected answers were: "I would change my appearance if I could", "I'm ugly", in the last lessons 7 boys out of 10 have given a positive response by changing their answers from "I'm ugly" to "I like my appearance".

Physical activity for people with disabilities is essential in order to improve the quality of life of those who often face barriers in today's society and are unlikely to be helped. This work is a life plan that will lead to good results both educational and social, so that we can help children with disabilities to achieve a better life through sport, seen as leisure, entertainment and motor improvement and social development.

7. Conclusion

The proposed work highlights how physical activity can help people with disabilities improve their motor, physical and relational skills. The questionnaires have revealed how sport, in this case aerobic exercise, is perceived as a means of gratification for their daily life. The growth of self-esteem can help children to improve an important component to their life quality: the social relationship.

References

- Gomez Paloma F., Sgambelluri R., (2012), "La disabilità tra didattica e sport";
 Raiola G., Di Tore A., (2012); "La complessità dello studio in ambito sportivo educativo";
 Kendzireski & DeCarlo, (1991), Physical Activity Enjoyment Scale (PASE);
 Bruce A. Bracken, TMA (Test of multidimensional assessment of self-esteem).

MOTOR EDUCATION FOR A MEANINGFUL TRAINING

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Abstract

The pedagogical value of the bodily dimension and movement is gradually becoming the center of the interest of different scientific disciplines. The evidences neuro scientific have contributed to the consolidation of the thesis according to which the body is the mediator of the knowledge in an educational act aimed to the harmonious development of the person in his totality. The objective of this work is to propose a revisitation of the traditional teaching of the cognitivist mold in favor of experiential-type learning from bodily dimension in recognition of the existence of a plurality of learning styles. This involves the inevitable update of teacher professionalism that cannot escape the comparison with the new way to understand the teaching, where the physical education acquires meaningful cultural and scientific relatively to the processes of learning and cognitive development of each student. The intention, in fact, it is to plan, through the peculiarity transverse of the physical education, a new field of investigation, in support of teaching, that just scientific dimensions differ profoundly from one to the other: the life sciences on the one hand and the educational science on the other. A proposal that looks at "educational relationship with and through the body", since it same subject of the formative process. The physical education, then, would assume the role of cross-glué that, for its global character, has as its goal the development of all of the functions of the areas of the personality of the learner that is intellectual, social, affective-emotional, organic and limited mobility, clearly in close relationship and interdependence between them.

Keywords: *Body dimension, meaningful learning, neurosciences, bioeducation*

1. Introduction

The investigation about the problems of the motor sciences has had remarkable gaps until the last two decades, period in which the corporeality and the movement have progressively deeply become privileged interest object by disciplinary ambits between them unusuáls. Anyway, in the concreteness of the contemporary culture a consideration of the corporeal extremely superficial dimension remains. The Italian school still tends to regard physical education "as secondary education and entertainment, rather than as full educational opportunities in the service of the person" (Naccari 2003).

A similar approach, however, is not reflected in the new epistemological structure which is gradually to form in recent years; today's own theoretical paradigms of educational sciences and medical sciences, in fact, converge on the existence of the indivisible link that unites lived experience and built with the processes of cognitive development. This is to be found within the formula of the Embodied Cognition in which a series of models, theses and theories show that the majority of higher cognitive processes is in continuous interaction with the system sensors motor.

2. Objectives

The goal of our research is to identify and analyze the possible strengths of the pedagogical value and cognitive Motor Education at primary school Italian. The main purpose of this is to promote the overall development of the personality of the students both able-bodied and with special educational needs (BES).

3. Design

Following the current debate pedagogical / educational, outlining a scenario where it is necessary to reorganize at most levels of a teaching too long planned according to a "segmentation" of knowledge, the study group has promoted a research project that performed through the analysis of several considerations.

Currently, various scientific disciplines gives a high pedagogical value to body size and movement, regarded as suitable instruments for the purpose of comprehensive training of the personality of subjects at a young age.

The psychomotor, understood as a methodology \ didactic approach in primary school, is becoming increasingly important in the pursuit of educational action to guide the student towards independence cognitive and relational. A proper physical and mental development results in improved quality of life by promoting the full inclusion of able-bodied student and / or with special educational needs. This requires an inevitable reform of educational practice in favor of the recognition of the existence of a plurality of styles of learning centered over the body (Gardner, 1998).

4. Methods

We started from the analysis of various theoretical and argumentative authors who, through their research, have contributed to the enrichment of the epistemic foundations of various disciplines related to motor education , encouraging, thereby overcoming a sectoral vision on the issue of corporeality in education.

The recent contributions of neuro-scientific studies together with the research on the use of the body and movement in education have, in recent decades, provided a number of suggestions about new ways of thinking and investigate the relationships between the physical, cognitive, and affective-relationship dimensions of the person, causing a pedagogical there be a critical review of the teaching practice, training and inclusive present in the Italian school.

Correspondence application of these principles have been the DM 27-12-2012 for the regulation of instruments of intervention for pupils with special educational needs and the project of "Literacy Motor" open to all pupils and primary school teachers, respectively served up with the aim to improve the quality of school inclusion and promote / communicate the value of the motor practice and play-sports in the social fabric.

5. Results

We must start thinking of the theory of multiple intelligences formulated by Howard Gardner, one of the intellectual profiles identified by himself, emphasizes the value of intelligence body-chinestesica offering a valuable aid to the current educational research; not least the concept of emotional intelligence developed by Daniel Goleman (Goleman, 1996) who speaks of co-existence in the human being of two minds, one that thinks, the other that feels, interacting with each other in the construction of learning.

Equally significant is the proposal of Le Doux (Le Doux, 2003) for which the emotional charge becomes essential in the learning process. In this regard, the discovery of mirror neurons (Rizzolatti, Sinigallia, 2006) has led to an inevitable change

of perspective about the traditional distinction between the cognitive and motor phenomena.

The studies of Damasio (Damasio, 1995) have emphasized the centrality of emotionality in relation to both learning processes that the behavior of the person stressing the irreducible dependence of the mind from the body and from his experiences. In this sense, in accordance with a strong significance of the experiential process (Ausubel, 2009), the Motor Education is a discipline that is expressed through movement.

Human being by nature live in relationship with others. The deep meaning of education is to help each other to help each other with respect and awareness of their individuality and diversity of others.

In parallel, the current concept of "inclusion" which, in Italy, has recently replaced the term "integration" is well described in the Ministerial Directive of 27 December 2012: "Tools intervention for pupils with special educational needs and territorial organization for school inclusion". In the light of this analysis, consider the acquisition of skills a process achievable only through verbal language or logical-mathematical would be improper. Especially in those with BES is the "object" that moves cognition (Rivoltella, 2012) and this is made possible by the multi-sensory of the body approach.

6. Discussion/conclusion

The joint activity of thinking and feeling emotional is what defines the uniqueness of the individual. The object of study of educational research cannot escape the professionalism of the curriculum teacher and support teacher.

The current vision of the new ways of learning, cognition, social, that is focused on the body with its extraordinary capacity for learning, makes necessary, in fact, planning a new research whose main character must be identified in the continuous interchange between education and scientific dimension. An approach centered on a bodily experience of the world (Gomez Paloma, 2004).

In support of inclusive perspective, teaching, must adopt as a goal the strengthening of capacity in the subject in difficulty and beyond. And it is physical education, then, that as a cross-discipline has as its goal the development of all aspects of the areas of the personality of the learner: intellectual, social, affective-emotional, organic and motor, which are all closely related and interdependent between them. (Sibilio, 2002)

References

- Ausubel D.P.,(2009) *Educazione e processi cognitivi. Guida psicologica per gli insegnanti*, Milano: Franco Angeli.
- Damasio A., Macaluso F., (1995) *L'errore di Cartesio. Emozione, ragione e cervello umano*, Roma: Adelphi.
- Gardner H., (1998), *Multiple Intelligence: The Complete IM Book*, San Clemente CA: Kagan Publishing.
- Goleman D., (1996) *Intelligenza emotiva: Che cos'è e perché può renderci felici*, Milano: RCS Libri & Grandi Opere SpA.
- Le Doux, J., (2003) *Il cervello emotivo. Alle origini delle emozioni*, Milano: Baldini Castoldi Dalai.
- Naccari, A., (1993), *Pedagogia della corporeità. Educazione, attività motoria e sport nel tempo*, Perugia: Morlacchi Editore
- Rivoltella, P. C., (2012) *Neurodidattica. Insegnare al cervello che apprende*, Torino: Raffaello Cortina Editore.
- Rizzolatti G., Sinigaglia C., (2006) *So quel che fai: il cervello che agisce e i neuroni specchio*, Milano: Raffaello Cortina Editore.

SPORT, EDUCATION AND SELF-DEVELOPMENT

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Abstract

The benefits of sport, as a game structured according to the rules, are a lot of educational. Physical activity transmits values, learning, interpretation, knowledge and assessment of the self. The aim of this reflection is to assess how the practice of a sport team can facilitate self-awareness and social ego (Le Boulch, 1979), and how it can help build up the personality of a group class consists of 25 students aged 13. The sport is not only a source of pleasure and well-being but also a way of learning, internalization and growth. (K.Gross, 1861-1940 e K. Lange, 1828-1875). The development of objectives, decision making, teamwork are situations that they have become in everyday life and can be addressed with greater awareness by those practicing sports especially group course giving priority to the educational and non-competitive (Huizinga, 1973). In team sports are also conveyed the positive aspects about the emotion that is under construction during the teenage (E. Erikson, 1995). The young people are learning to manage defeats, victories, human relationships, learn to know your limits and their attitudes to these reasons the sport becomes an instrument of knowledge and self-development. (Piaget, 1945). The sport is taken as the volleyball (very practiced in schools). The participants are asked to complete a questionnaire where you are asked to self-evaluate: 1) their ability to make decisions, 2) their ability to manage, 3) and their ability to cooperate. So providing the students and teachers of a means in order to help build up of the self.

Keywords: *Physical activity, team sport, learning*

1. Introduction

The educational sport benefits, as structured game following rules, are many. Nowadays there is a strong awareness of sport as an educational and formation point. Sport is an educational resource when it reaches educational and training objectives and when it represents a mean creating significant relationship among people, that can grow thanks to it. So this kind of sport allows the comparison with themselves, with their own bodies and their own identity. Identity can be defined in three different ways (Stryker & Burke, 2000):

1. identity seen as people's culture
2. identity considered as an identification element of a community or a social category.
3. identity seen as a role in complex societies.

Therefore, sport represents a privileged route especially for teens and pre-teens whose identity, self-esteem, body and decision-making skills are developing. Sport supports and facilitates the formation of the self. body has an important role during adolescence. Through the body, that changes during adolescence, we relate to the world (Damon & Hart,1982;). the body is not only considered as a container for a healthy mind but also as a living one. This work is a reflection on the educational value of sport, particularly on the meanings that can be learned through sports. Sport is not only a source of pleasure and well-being but also a way of learning, interiorization and growth. Sport is educative when it allows the development of motor skills in relation to its affective, cognitive and social aspects. (Le Boulch, 1979). In Italian schools physical

activity is regularly practiced. Here one of the most popular sports is volleyball. It is a team sport played by two opposing teams composed of a maximum of 12 players. "Team sport is a practice of exercise-sport, which has a playful, competitive and processual. Consequently the participants are two teams that are characterized by a non hostile aversion determined by competition. Through struggle they try to obtain the win by using ball, or other object, manipulated according established rules." (Teodorescu, 1983). Volleyball is a team sport so it requires the collaboration of all the players in the field. It is a sport that uses open skills. (Singer, 1980), and its technique performance depends on the competitive conditions and the adversary. (Manno, 1979). The tactical aspects of the sport can be suitable means to encourage a competitive and intelligent spirit, able to appreciate and evaluate the competition with the opponent, and his cognitive and creative skills. In this context, you can find favorable opportunities to refine the perception mechanisms and to receive stimuli in order to organize relationship. (Ceciliani, 2002). The aim of this study is to evaluate possible improvements concerning the ability to make decisions (decision making) and increases of self-esteem in sport and in social life. The decision making is a cognitive process through which an athlete quickly processes exteroceptive and proprioceptive information about the situation space - time situation where he is. The athlete extracts only relevant information or elements to his own action. (G. Raiola, 2002). The decision making is formed by three phases (Joseph G. & Johnson,2006):

- identification of stimuli
- selection of the response
- programming of the response

2. Method:

The method that was used is an experimental one and involves the use of a questionnaire (table 1) with which the heterogeneous sample has self-evaluated with marks 1 to 5, their decision-making skills and self-esteem. The heterogeneous sample consists of 23 adolescent students (aged 14 to 15 years) who attend the same class of 'last year of high school, 9 males and 14 females,. Participants were asked to mark with an X the box corresponding to their perception of self-esteem and decision making. The range is from 1 to 5. (1 = very poor, 2 = poor, 3 = average, 4 = good, 5 = excellent). The worksheet was presented at the beginning of the sports project and at the end (for a period of about 6 months) to record possible improvements.

Table 1

Student:	1	2	3	4	5
how I perceive my decision making?					
how I perceive my self-esteem?					

3. Results

Reading the data is observed greater ability to take decision in the field and a higher self-esteem, recorded in the last phase of the experiment, at the end of the school year, after playing several matches and made two training sessions a week. These estimates are made in a self evaluation After the first administration of the questionnaire, students have answered this way: Table 2.

Table 2. Assessment of self-esteem and decision making in the initial and final phase.

Self-esteem initial phase					Decision making initial phase				
1	2	3	4	5	1	2	3	4	5
6	10	7	0	0	3	5	7	6	2
Self-esteem final phase					Decision making final phase				
1	2	3	4	5	1	2	3	4	5
2	3	6	7	5	0	4	5	9	5

As can be seen from Figure 1 the perception of self-esteem and decision making consistently improve. In both cases we can record good and excellent perception of self-esteem and decision making higher after the period of execution of physical activity for more than 50% of the participants.

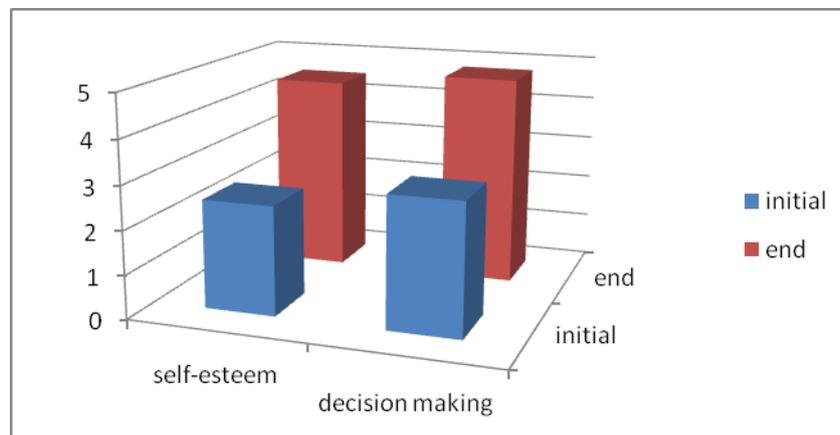


Figure 1. Self-perception and decision making recorded at the beginning and at the end of the project.

4. Conclusion.

This study shows two important aspects of a subject's personality, and more specifically of a teenager. There are two important aspects during adolescence, in other words the decision-making and self-esteem. We can see how sport can become the main space of self-realization and of the human condition. It can be a place of confluence of joy, light-heartedness and well-being. Rivalry, strength, courage, victory, defeat, competition, collaboration can be, in pedagogical perspective, opportunities of awareness in order to better know his own inner space. In conclusion, the benefits of sport, although confirmed not completely, can be a good starting point.

References

- G. Raiola (2002), *“La complessità dello studio in ambito sportivo”*, ed. Pensa Lecce Italia.
- Le Boulch, J. (1979). *La educación por el movimiento en la edad escolar*. Barcelona, Paidós
- Ceciliani, A. (2002). *Elementi di didattica dei giochi sportivi*. SdS-Scuola dello sport. XXI, 57. Roma.
- Manno, R. (1979) *I fondamenti dell'allenamento sportivo*. Bologna, Zanichelli.
- Singer, R.N. (1980). *Motor learning and human performance*. New MacMillan.
- Stryker & Burke, (2000). *The Past, Present, and Future of an Identity Theory*. *Social Psychology Quarterl.* Vol. 63, No. 4, Special Millenium Issue on the State of Sociological Social Psychology (Dec., 2000), pp. 284-297. American sociological association.
- Damon, W., & Hart, D. (1982). *The development of self-understanding from infancy through adolescence*. *Child Development*, 53, 841-864.
- Teodorescu, L. (1983). *Contributi al concetto di gioco sportivo di squadra*. In: *L'insegnamento dei giochi sportivi*. Selezione degli atti del congresso internazionale Teaching team sport. Roma, Coni-Scuola dello sport.

BODY, MIND AND LANGUAGE: A POSSIBLE COALITION?

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Abstract

Our team recognizes the value of the bodily entity and movement emerged among the new research in the field of psychology to understand, build and adopt new models of teaching intermediation of bodily activities in education. The stress on only predominance of mind can lead to neglect of the role played by the body / brain in the learning process. In the last years there has emerged a new perspective, the 'embodied cognition, which helps to overcome the traditional dualism between body and mind because the cognitive processes are based on sensorimotor processes. Based on these assumptions, the 'physical education is used here to promote delivery of teaching laboratory, the gym becomes a more fun setting for children in which to propose activities in different school subjects. With our work we focused on 'learning of English in the gym, using physical activities as a means for learning cognitive and psychosocial, because its language is universal, it is an instrument of growth of' person in a context of sharing rules. Our work is developed through lessons given at the gym, during which the teacher described the deliveries, using the' English. We called for a reflection on the coalition between body, mind and language to valorise the child because actively involved in the learning process and not forced to reproduce the language according to the old-fashioned grammar. This approach urges in 'pupil in a natural way, the desire to communicate and express demands, needs and requirements according to a conversational approach in English language.

Keywords: *embodied cognition, language, mind, disciplines, learning*

1. Introduction

The deep changes that have changed over the years the society in its social, economic, cultural and professional actually have also transformed the educational systems and training. The advent of new communication and information technologies have created new possibilities for each person to have access to information, to knowledge, also involves a change in the skills required to understand and act in the current social, national and international level and to carry out their functions. The change of the company brings as a consequence the transformation of the demand for education and training (P. Cattaneo, 2006). It is then proposed a school does not self-referential, but open to society, the processes of change that can improve its educational effectiveness in terms of outcomes of training. A school that expresses its offering educational curriculum and taking into account a possible coalition between body, mind, and language by taking a playful approach (Caon, Rutka, 2004). This new perspective comes to life from the theories of authors such as P. Dennison "movement is the door of 'learning', McLuhan" there is no learning without fun and there is no fun without learning ", A. Damasio "research has convinced me that emotion is an integrated part of learning", A. Einstein "means learning experience, anything else is just information."

2. Design

The research project was born from the need to promote innovative methodologies in the school for the learning of a foreign language. The study group, in fact, following a thorough analysis of the scientific literature that supports the interactive dialogue between mind, body and language, has built a supplement to a scientific background on which to build the proposal. Then he fostered an operational project in a school to launch an investigation to verify the empirical and relapse. In the proposed route develops a playful learning environment in which every child has fun learning. There has been served, in addition, verification tools for reading and understanding and observational checklist to analyze the psycho-relational aspects that determined the operating setting.

3. Objectives

The goal that has guided our research was to determine whether the coalition between mind, body and language is achievable and if you can lay the groundwork for an innovative teaching that makes the body the main vehicle for learning and cognitive psychosocial.

4. Method

The research is empirical. The sample examined is a fourth grade of primary school, composed of 19 students, including 10 males and 9 females. We have no control group used because a descriptive analysis was based on what was detected before and after the implementation of the methodology. To measure this difference have been used entrance test to measure the initial skills, multiple-choice test to measure actual knowledge of the language and unstructured tests to measure what were the social and relational skills of students. Observations were also implemented test samples initial, in progress and final, making use of the 'help of ceck list. The protocol, whose activities have had a period of 12 hours over three weeks, involved the use of different methodologies:

- cognition embodied, for which they are proposed games exercises in which the teacher makes deliveries using mostly English;
- role playing and mimicry;
- cooperative learning and circle time;
- playfull glotto-didactic based on the game play and movement.

Inspired by the theoretical assumptions of Giovanni Freddi we have supported the basic principles on which to base their methodology playful, namely:

1. the senses: in 'learning the student must be able to use all the sensory channels;
2. motor skills: the language is a means of communication pragmatic and functional;
3. the semioticy: the foreign language is part of the verbal language that is just one of the many languages that the student has at its disposal;
4. interpersonal relationship: the playful language teaching should foster relationships between the students and the teacher;
5. pragmatism: with the kids is crucial that the language is presented as a useful and practical tool to do things;
6. emotion: the language you can learn best if it is associated with positive emotions;
7. authenticity: in the game you create a real situation on a psychological level.

5. Results

The results were listed in excel and shown through the Figure 1. In red you can see the increase in reading skills and reading comprehension monitored following the protocol, in blue are represented instead the skills measured at the input.

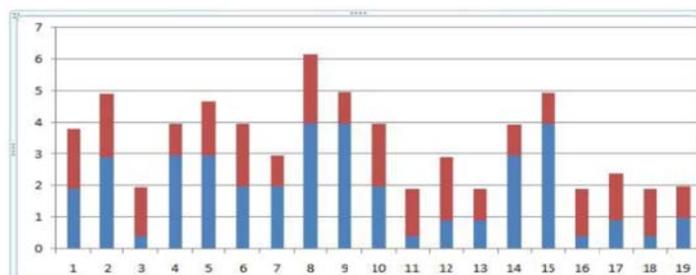


Figure 1. Increased ability to read and understand

6. Discussion/Conclusions

As shown in the figure there has been a considerable increase in reading skills and comprehension of the text in a foreign language. The subject number 3 is affected by DSA, and, albeit from a lower level of its ability than the average, showed, however, a slight improvement in the test output. Based on the data collected through classroom observations and in relation to disciplinary knowledge and skills, considered as indicators of learning in regular assessments, it appears that there is an improvement on both the attentional capacity of the pupil, as well as an improvement closely linked to learning the language. We arrived at these results by reference to specific indicators of learning such as:

- oral reception: Understand oral texts in known contexts and for different purposes related to 'personal experience and interpersonal relationships;
- speaking: to respond in a relevant way to personal questions and interact with classmates and teacher guided dialogues;
- Receive written: read and understand several simple text types for specific purposes and uses;
- Writing: write simple messages according to a given model and produce simple texts following a track.

Referring to these indicators we were able to estimate, with regard to language learning, an improvement in the performance of reading and understanding the text. There were no positive results only in the students involved in the project, but also in the teachers themselves because the methodology used does not provide for complex procedures and so it is easily applicable.

References

- Pellai A., Pellai P., (1998), *Playing with sports. The guide to grow with the sport*, Milan: Franco Angeli Ed
- Balboni P.E., (1998), *Tecniche didattiche per l'educazione linguistica*, Torino: Utet
- Caon F. Rutkas (2004), *The languages involved*, Perugia: Guerra Publisher
- Paloma Gomez F, (2004), *Corporeality and emotions*, Naples: And Guide Publisher.
- Paloma Gomez F., (2012), *Teaching ... Mind body*, Naples Guide Publisher.
- Sibilio M., (2005), *Lo sport come percorso educativo. Attività sportive e forme intellettive*, Napoli: Guida Editore
- P. Cattaneo et al-Being teachers between autonomy and reform-Ed *The Technique of the school*, Ct 2006
- Balboni, P.E. (2002) *Le sfide di Babele. Insegnare le lingue nelle società complesse*, Torino, UTET Libreria

WORLD-WIDE COLLABORATIVE NETWORK OF SCHOLARS: THE FLAGSTAFF SEMINAR EDUCATIONAL LEADERS WITHOUT BORDERS

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Abstract

The educational project to be presented in this poster session is to host a discussion with scholars world-wide interested in collaborative networking based on the common global denominator that every country has children underserved by schools. The organization's mission is built upon social justice issues, new technologies and the interconnectedness of world economies. Across the globe many children fall between the spaces of nation states and educational opportunities cannot be addressed by only one nation state. Our main objective is all children have a right to go to school. We believe as scholars we should try to confront the crisis that faces education from the neo-liberal threat in the U.S. (Sandel, 2012), in the remainder of the world (Kimber & Ehrich, 2011), and the exponential chasm between 'haves' and 'have not's' in access to schooling. It is truly a frightening vision to imagine a world where most people aren't educated because it requires too many tax dollars; because they are female; they are from a lower caste; they live rurally, or that they are educated, but only in a very narrow context that is intended to serve the needs of multinational corporations or a nation's dominant culture. The poster session will posit two fundamental questions: How do scholars become citizens of the world? And, how can educational leaders think above national boundaries and politics? The goal will be a discussion of these ideas and others posed by the conference attendees in Lisbon, Portugal.

Keywords: *Education, Leadership, International, Network, Schooling*

THE INFLUENCE OF E-LEARNING FOOD SCIENCE MODULE ON THE STUDENTS' KNOWLEDGE ABOUT CHOCOLATE

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Abstract

The purpose of this research was to determine if teaching with e-learning module about chocolate contributes significantly to students' higher scores than a traditional teaching at both the knowledge test performed immediately after the lesson and the delayed knowledge test performed one month later. The research also tried to determine students' attitudes towards e-learning strategies used in the Food science lessons. 130 secondary medical school students (aged 16) participated in the study. A paper-pencil knowledge test about chocolate concepts and a questionnaire about students' interest in e-learning were applied to the sample. t-test, ANOVA and χ^2 test were used for the analysis of data. The results show that the use of the e-learning module in the classroom can significantly improve the quality of food science teaching the topic about chocolate and students can learn the material significantly faster and they score higher on knowledge tests performed immediately after the lesson and the delayed knowledge test performed one month later than their counterparts learning the same topic traditionally (control group). Experimental group students expressed significantly higher situational interest (students' interest in engaging in the specific lesson) than the control group students and rated the lesson using the e-learning module as very interesting, varied and entertaining. It can be concluded, that the use of high-quality ICT learning strategies in Food science for secondary school students improves the acquisition of students' knowledge and that e-learning can increase students' interactivity and stimulates students' performance, motivation, cognitive performance and flexibility of learning Food science concepts.

Keywords: *ICT, e-learning module, knowledge*

1. Introduction

By entering the third millennium, education via the Internet or network represents a large and exciting opportunity for both teachers and students. Innovation in e-learning technologies lead into revolution of education that enables learning, which is individualized (adaptive learning), enhancing learners' interactions with others (collaborative learning), and transforming the role of a teacher (Ruiz et al., 2006). The use of ICT resources makes the lessons much more interesting and dynamic, and most importantly, the students should gain more knowledge than from the lessons, where a classical frontal method is used. Electronic Learning (E-learning), which is developing, is a dynamic and rapidly changing field, which is the product of advanced technology and informatics in educational opportunities (Anon, 2006).

2. Problem and research questions

More specifically an e-learning module about chocolate was designed and produced as the subject of research. One e-learning module about chocolate (its manufacturing, substances in chocolate and its dietetic properties) was developed and used by the teacher during teaching of selected topic. Three basic research question were formed: (1) Does teaching with e-learning module about chocolate contribute

significantly to the students' knowledge about chocolate than a traditional teaching?, (2) What is students' attitude towards e-learning strategies used in the Food science lessons? and (3) Do students, who learned about chocolate with the assistance of e-learning, achieve significantly higher scores on test about chocolate after one month than the students who learned the selected concepts by traditional learning?

3. Method

3.1 Participants

130 second grade students of nursing program of a secondary medical school (Food Science class) participated in this study. 75 students were taught with the assistance of e-learning module (experimental group) and the other 75 students had been exposed to traditional teaching (control group). All students were learning about concepts related to chocolate manufacturing, substances that form chocolate and its dietetic properties.

3.2 Instruments

The software of the e-learning module was designed in HTML, as a web page. First page includes the title and the hyperlink "enter" which leads the user to a page with links to individual chapters. Chapters follow one another in the following order: (1) cocoa, (2) cocoa beans, (3) history of chocolate, (4) from cocoa beans to chocolate, (5) the use of chocolate in the kitchen, (6) experiments with chocolate, (7) chocolate and health, and (8) didactical material.

3.3 Research design

Data were collected using quantitative data collection techniques (knowledge tests and questionnaires). Data were statistically analyzed with Excel program and the statistical program SPSS (Statistical Package for the Social Sciences). For analysis of the results were used the following tests: the t-test and χ^2 test.

4. Results

The results of the study showed that the use of e-learning module about chocolate as a multimedia unit on CD in the classroom can significantly improve the quality of teaching and students can learn the concepts easier and faster. When participating in the lesson that was carried out with a CD, the students were more excited and motivated than the students who participated at a traditional lesson, even though the material or concepts presented in both classes were the same. Students who were taught with the help of a CD, performed better at a knowledge test that followed the lesson and also at the delayed test that was carried out a month later, than the students who were taught in the traditional manner.

Differences in the total points in individual tests.

T-test showed that there were no statistically significant differences between the control group ($M = 2.11$, $SD = 1.01$) and the experimental group in solving pre-test ($M = 2.39$, $SD = 0.96$), $t = 1.745$ ($df = 147$), $p = 0.083$. The experimental groups' test achievements ($M = 7.44$, $SD = 0.575$) was significantly higher than the control groups' ($M = 5.45$, $SD = 0.81$), $t = 17.315$ ($df = 133$), $p \leq 0.000$. Also, the experimental group ($M = 5.68$, $SD = 0.738$), was significantly more successful in solving a delayed test than the control group ($M = 3.52$, $SD = 0.665$), $t = 18.829$ ($df = 146$), $p = 0.000$.

Difference between experimental and control group students' views about the lessons.

According to the results obtained by the questionnaire on how interesting the lesson was, the students who were taught with the CD, stated that the lesson was

better, more interesting ($M(\text{ex.g})=4.88$; $M(\text{co.g})=4.59$) and of better quality than those students who were not exposed to the teaching using the CD. Through the lesson the experimental group was paying attention in the class from the beginning to the end of the lesson ($M(\text{ex.g})=4.28$; $M(\text{co.g})=3.77$), the lesson was more entertaining ($M(\text{ex.g})=4.87$ $M(\text{co.g})=4.6$) and their understanding of this lesson was good ($M(\text{ex.g})=4.85$; $M(\text{co.g})=4.59$) and better than of the students who were not exposed to the teaching using the CD. They also showed more interest in the educational material than the students who participated at the lesson using a traditional teaching by the teacher. There is a connection between the execution of a lessons and performance of solving the test and delayed test, which both groups solved much better.

Difference between experimental and control groups students' achievements.

Experimental group achieve on all test items statistically significantly higher scores than control group. The difference was not possible to determine in item 5, since both groups, control and experimental, solved it correctly. The relationship between experimental and control groups in solving delayed test is statistically significantly different in favour of the experimental group. Items about cauliflory and free radicals are not statistically significant, while the results of other five items, which have included the same educational material as in the test, but were of different types, are statistically significant.

5. Discussion with conclusions

It can be concluded from the results that the students from the experimental group performed statistically significantly better at the test and delayed test than students from the control group. A more detailed analysis of differences in solving specific items of the test and delayed test among students who used the CD and those who have not, show that students, who used e-learning module about chocolate, show higher quality knowledge immediately after using the CD and forget learning content more slowly. The results of pre-and post-tests, that measured the pupils' knowledge, have shown that their knowledge improved with the use of e-learning. Increased performance of students who used the CD is also a consequence of these students having a greater possibility of repeating the learning content as they can easily move back to read the text again, look at illustrations or solve an exercise if necessary. Results, therefore, show that the educational material using multimedia should be promoted and used in the classroom more often. It can be advised, that by reducing the traditional frontal teaching and encouraging the use of high-quality ICT learning strategies does not reduce the acquisition of students' knowledge about nutrition, as experience with the use of e-learning show, that students are, by using multimedia, more motivated to work and the content is explained in an interesting and friendly way. However, it is important that teachers have access to quality ICT teaching materials that are proven in practice, since this is the only way for them to use modern ICT learning approaches in teaching. It is important to note that teachers are either not trained or do not have enough time to develop their own quality ICT teaching materials, so those who have the knowledge and resources should be more actively involved in creating this kind of teaching materials.

References

- Anon. (2006, last updated: not available). Learning in the New Economy. Retrieved January 21, 2012 from www.linezine.com/elearning.htm
- Ruiz, G. J., Mintzer, M. J., Leipzig, M., R. (2006). The Impact of E-Learning in Medical Education. *Academic Medicine*, 81(3), 207–212.

WORD...MOVING

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Abstract

The project, through reflection and didactic experiences, pointed out that the movement/gesture, combined with the traditional sense organs, can promote language goals. Acquisitions consolidated in science consider the gesture-moving part of the senses, it integrates and interacts with the senses usually play. Based on these assumptions and a scientific experiment carried out in the 90s which shows that cognitive development goes through the daily practice without neglecting the movement, we wanted to experience, through the educational project "Words in motion", in a primary school in the province of Naples, the link between movement and gesture-learning reading and writing. The classes involved were 2 primary school.

This project wanted to test if a strategy of teaching / learning active and creative, which reinforces the motivational orientation, the child leads to the acquisition of the tongue base. The methodological approach has served the contribution of analysis and synthesis with a peculiarity due to the presence of playful exercises on a floor-motor auditory-verbal and verbal-motor. The analysis of the data showed clearly that the experimental group has acquired more easily with the required skills. The teaching experience has shown the value of the applied methodology highlights the important contribution of recreational motor for learning the techniques of reading and writing. Body, communication and environment and coexist with each other, enabling children to realize their potential through the pleasure of perceiving and satisfaction manifest.

Keywords: *Action, competenze linguistiche, primary school, motor activity, gioco*

1. Introduction

In the last two decades there has been a proliferation of studies on the relationship between the mind - brain - the body that have highlighted the links between brain activity, mental and motor. Recent studies have shown that the development of the ego from the motor experiences that allow you to become aware of their limitations and of their own potential and came to the formation of self-image distinct from the other and from objects (Rosati, 2005). The body becomes the most effective means of perceiving themselves, others and the reality and push forward to experience sensory-perceptual, not limited to the operation and promotion of fine motor skills in themselves, but setting itself more global objectives, such as the conquest of the body consciousness, perceptual skills, language development, concepts of arithmetic and other school skills properly. (M.Frostig, 1978)

2. Design

The above experimental work, having as its goal the demonstration of a path-motor play activities for language learning, started from the specific literature exists. In

this sense, our project was supported by an experiment of the '90s focused on the linguistic method-motor which is based on the use of gesture-associated movement under which sight and hearing.

In fact consolidated acquisitions in science consider the gesture-motion part of the sensory, it integrates and interacts with the sight, hearing usually play. That method, while playing a role in general education of the child (motivation, creativity, relationships with others, etc.), Has as its fundamental objective the linguistic learning, step by step, leads to the acquisition of the base of the tongue with a 'playful approach that reinforces the motivational orientation. (The research was conducted by the School District 47 in Dolo (Venice). The source was driving the Erickson).

3. Objectives

The research aims to demonstrate, starting from the linguistic method-motor, the possible link between gesture-movement and learning of reading and writing.

4. Method

In the realization of the project the theoretical paradigm of reference was that of Erickson (A.Caforio, G.Carlin, R.Cossaro, 2008), with the explanation of n. 10 units of learning, through which, from the simplest steps to more complex steps, it has come, with a gradual transition from the phoneme to the grammatical sentence, in coordinations involving the entire body in his travels. The work lasted 4 months with a frequency of twice a week and the school that hosted the Comprehensive School is "Morelli and Silvati" based in Roccarainola (NA) in two classes of first grade one of which represented the group experimental constituted by n. 23 pupils and the other was the control group with 17 pupils. To evaluate the differences between the two groups and the tabulation of the data, use is made of tables already prepared and validated objectively by Erickson.

The methodological approach followed for such an experiment is started from the body. From here a number of activities which, in the form recreational motor, they see the child's interest towards learning. He outlined a path that led to the symbolization of the sequences and the subsequent graphical representation. The child has been projected towards an awareness of verbal language that uses phonemes, syllables, words and phrases; plays with them, accompanying them with gestures and movements this is the pre-alphabetic writing.

He later discovered the division of the sentence structure and word-united, visually and aurally, the building blocks of the terms that were presented through, so, as a representation of lived on an abstract setting up the experience. For example, in analyzing rhythmic-verbal choosing a random word "frog" was asked the children to scan out loud the first syllable and then the second clapping their hands at the same time, they realized that the pause between one syllable and the other without making any gesture and so. For the analysis of visual-verbal each child has created a card that says the word "frog" after the word has been cut into syllables and repeated by showing the various separate parts then " frog ".

5. Results

The data collection was done through check sheets and evaluation according to objective parameters. These data were percentualizzati, collected in Excel tables and represented in the Figure n. 1 using histogram. The x-axis values have been reported as a percentage, while on the ordinate skills that are assessed according to objective parameters during the course of its activities. As you can see the data is in line with the expectations of the research, in cases in which it was the highest score by both groups is pre-requisite skills.

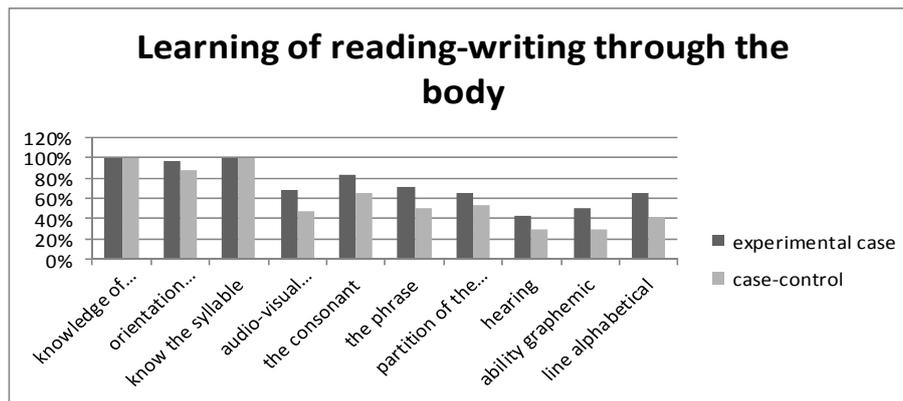


Figure 1. Results of the experiment

5. Discussion/Conclusion

A first global analysis of the data, it is clear that the experimental class has acquired the expertise needed because, through manipulative activities and exploratory children were able to pass from one thought to a global index. In the control class, lacking the concrete activity, the goal was reached with more difficulty, this is because when there is the step of concreteness, it is more difficult to achieve internalization of concepts. From here it is clear the importance of psycholinguistics that helped the students in the experimental group, initially favoring the phonemic awareness of the constituents of the word and then the phonological processes of analysis and synthesis. The result, then, even if isolated, plausibly represents the effect of the specific experience of the experimental group.

The development of this project has highlighted the importance of body language and movement, which favors those learnings arising from the processes sensory, proprioceptive, motors and their mental processing, learning those primarily related to the sphere of the 'SELF' "feel, perceive, understand, evaluate, modify itself. The knowledge of "immediate", experiential, direct, sincere and conscious of your body, with all its existential values, expressive and communicative, can only be achieved through a "teaching" school-centered action (Rivoltella, 2013) , movement, feeling, experiencing the, get in the game in a direct and immediate.

References

- Caforio, A. Carlin, G., Cossaro, R. Words in motion. The learning of reading and writing with the linguistic method-motor. Erickson (2008)
- Deva F. (1982), The paths of learning to read and write, Florence, New Italy
- Gomez Paloma, F. (2004). Physicality and emotion. An education for the psychomotor saper.essere. Publisher Alfredo Guide.
- E. Perrotta and M. Brignole (2000), Playing with words. Training phonological better to talk and get ready to write. Trent Erickson
- Rivoltella P.C., Rossi PG, (2013), The teaching act. Manual for the teacher, Brescia: La Scuola
- M. Frostig, with the collaboration of P. Maslow, Motor Education. Theory epratica, Omega Edizioni, Torino, 1978, p.60
- Rosati, L. (2005). Il metodo della didattica. L'apporto delle Neuroscienze. Brescia: La Scuola.

LEARNING MATHEMATICS THROUGH THE BODY

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Abstract

The present study aimed to address the educational and teaching aspects related to the development of logical and mathematical thinking of the child. Going beyond the mind-body dualism, neuroscience has shown that mind and body are indivisibly united and shape all aspects of knowledge through a dialectical relationship with the external environment. The child gets to know the world thanks to its sensorimotor experiences that allow them to build the concepts, increasing the capability to discriminate, classify, process and contribute to the construction of logical-mathematical thinking.

In addition to these scientific assumptions, this study was based on a survey carried out by the Third International Mathematics Science Study conducted in 1998, which showed the difficulty that children encounter in different types of schools when dealing with mathematical reasoning. The aim of this study was to test if a teaching / learning strategy based on active and constructive action that encourages exploration and research, would promote the comparison, discussion, creativity and reflective thinking of the child. The resource pack "Learning Mathematics through the Body" was used as a guide to plan the 14 units taught in the four-month period of this study which was conducted in a primary school in the province of Naples.

The methodology included a first recreational sensorimotor phase in which the child becomes aware of the proposed objective, followed by a second phase characterized by the representation of the experience on an abstract level. The final phase included a structured test to assess the knowledge and skills acquired and provide the data to compare the control and experimental groups. The analysis of the data clearly evidenced that the experimental group acquired and assimilated more knowledge and skills. This highlighted the value of the methodology applied and can be concluded that body, mind and the environment, coexisting with each other, allow the child to assimilate mathematical symbolism more easily when applying it to real life situations.

Keywords: Action, logical-mathematical skills, primary school, motor activity

1. Introduction

In recent decades, neurophysiologic studies and, in particular, the discovery of mirror neurons, have strengthened the theory of "Embodied Cognition" (Gomez, 2004), according to which all aspects of cognition are shaped by the perceptual system of the body that, moving and interacting with the environment, allows the construction of linguistic and logical-mathematical abilities. After Piaget's theory, according to which the concept of number is closely related to logical thinking and abstract reasoning (Piaget, 1967), starting in the 80s, thanks to scholars such as Ida Terzi and Marianne Frostig, it has come to prove that the construction of mathematical skills occurs through the interaction between movement, manipulation and language (Lacangeli, Ianniti, Carrier, 2007). The body is taken into consideration as a compulsory viaduct from concrete action to abstraction especially when learning mathematics. However, at present there is still a lack of consideration of the body as a subject capable of communicating and expressing the individual even during learning processes.

This research was supported by a survey carried out by the Third International Mathematics and Science Study (Benvenuti, Grimaldi, 2003), which revealed the difficulties that children encounter in assimilating mathematical symbolism and apply it to real life and to abstract contexts. The results obtained in this study were the outcome of repeated experiments of sensory motor activities in different classes and took into account two fundamental principles: the internalization of the concept of number and that the first channel for learning are the five senses, with special focus on sight, touch and hearing.

2. Design

The starting point of the research design was a theoretical analysis on the state of the art of the current literature, with the objective of determining an integrated scientific background on which to found the working protocol. Through the use of a hands-on and illustrative teaching strategy, this research aimed at identifying the educational and teaching aspects related to the development of the logical and mathematical thinking of the child. The sample of this study were 40 primary school pupils, whose ages ranged from five and a half to six years and had different verbal language capabilities, and mixed abilities as regards to visual perception and knowledge of reality, owing to their social and economic background that has formed their personality in different ways. The pupils were divided into an experimental group consisting of 23 pupils (16 males and 7 females), and a control group of 17 pupils (10 females and 7 males).

3. Objectives

The objective of this research was to demonstrate how teaching mathematics through the body promotes the acquisition of logical-mathematical competencies among children of this age.

4. Method

The research lasted four months (October 2012 - January 2013) with two lessons a week. The scheme of work was divided into 14 units of learning or topics, as suggested by the resource book "Matematica con il Corpo" by Christiana Benvenuti and Fiorella Grimaldi (Benvenuti, Grimaldi, 2003). These units, which interrelate with each other, have favoured the progressive acquisition of mathematical concepts expected at this level. In the control group the topic was only explained theoretically. Subsequently, the pupils were asked to work out an assessment sheet which was used to verify the acquired knowledge and skills. In the experimental group, the theme (Canevaro, 1997) 'Castle Games' was used as backdrop throughout all the lessons. This provided a context rich in ideas, encouraged research and promoted exploration in the children, thus allowing them to build their own personalised learning path (Piaget, 1994).

The methodology envisaged an initial phase, which took place in the school gym and in which through active games, free and guided pretend play and manipulative activities the children became aware of the proposed objective. This initial sensorimotor phase was followed by the representation of this experience on an abstract level. This phase, called the imprinting stage, is an intermediate stage in which the children are supplied with material they can manipulate or draw to give them the chance to reflect on the action they had done individually or in groups. At the end of these activities, the children were asked to complete the assessment sheet. This included the same exercises as the one given to the control group. Such teaching strategy reached the objective of creating a smoother transition from a sensorimotor stage to a symbolic-representative stage.

5. Results

The raw scores collected through the assessment sheets, were calculated into percentages, and then compared graphically. Figure 1, overleaf, shows the results obtained by the control and experimental groups in each of the 14 units and the final assessment conducted at the end of the course.

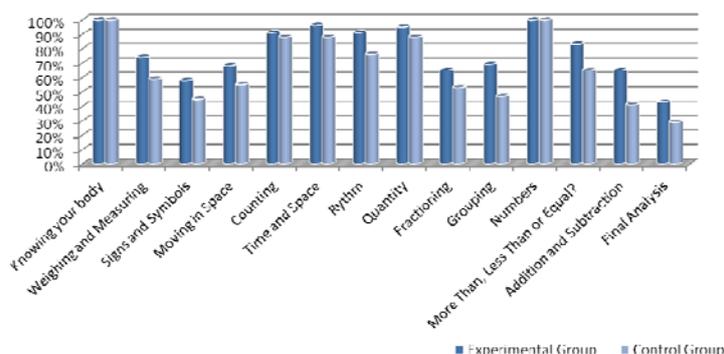


Figure 1. Results in percentages obtained by the pupils in the Experimental and Control Groups

6. Conclusion

Already at a first glance, it is clear that the experimental group acquired more knowledge and skills. Only when assessing knowledge on parts of the body and numbers, were the results equal and reached 100%. In both cases this phenomenon could be attributed to the fact that the children had prior knowledge and topics were less abstract. Looking at the results of the other units, it can be concluded that the teaching strategy adopted influenced the children's acquisition and imprinting of knowledge and skills. It can be said that activities which promote learning by doing were fundamental activities that allowed children to move from global reasoning to an analytical abstract thought and, through the work of pairing, discrimination and comparison, the pupils have consolidated the skills expected at this learning stage.

This study was a formative experience because it allowed us to show how the use of the body could be part of any school programme for teaching mathematics in which body, mind and environment, coexisting with each other, would allow the child to assimilate mathematical symbolism more easily and apply it to real life and the abstract world. The child would literally 'learn by doing'. This expression may seem obvious but actually implies the construction of knowledge through a methodology that invites exploration, encourages research, promotes comparison, stimulates creativity and reflection, hence encouraging the development of self-confidence. In conclusion, schools should promote a methodology that puts learning through movement high on their agenda, not only to learn mathematics but also other subjects.

References

- Benvenuti, C, Grimaldi, F. (2003). *La matematica con il corpo*. Trento: Erickson.
- Canevaro, A. (1997). *Programmazione per sfondi integratori*. La Didattica n.3
- Gomez Paloma, F. (2004). *Corporeità ed emozioni. Una formazione psicomotoria per il saper...essere*. Napoli: Alfredo Guida Editore.
- Lucangeli, D, Ianniti, A, Vettore, M. (2007). *Lo sviluppo dell'intelligenza numerica*. Roma: Carocci Editore.
- Piaget, J. (1964). *Six études de psychologie*. Ginevra: Gonthier.
- Piaget, J. *Lo sviluppo cognitivo*. Editore Armando, 1994.

USING INTERACTIVE WHITE BOARDS IN PRE-SERVICE EDUCATION: SMART ENGAGEMENT STRATEGIES

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Abstract

National University, as an innovative institution in the USA, is conducting a pilot project, which seeks to implement the use of Interactive White Boards (IWB) in Teacher Education courses. The project's goals include the integration of SMART Boards in on-ground classrooms, capturing lectures for immediate student use (e.g., reviewing content), and developing a video library of lectures for embedding in online courses. College classrooms of today are often present on computer monitors, iPads, and Smart Phones of the students. In order to keep students engaged, professional educators need to utilize the technologies of the digital age to capture and maintain their interest. When students are in the traditional face-to-face classroom environments, the use of educational technology can be instrumental in student engagement and learning. The use of Smart Boards is one tool that educators can use to increase engagement in the classroom. The ability to present content on a SMART Board and capture the lecture for online learning is a step further into the digital age for most universities. By combining strong curriculum with educational technology, universities can utilize the assets of their faculty expertise to educate students in every type of educational classroom environment. Enhancing the lecture capture with the use of SMART Boards can provide a multi-sensory learning experience for the instructor as well as the student.

Keywords: *Technology, Integration, SMART, Teacher Education*

1. Introduction

Salazar (2010) suggests that the educators of today need to incorporate “the use of educational technology” with “pedagogically sound” curriculum to engage students (p. 3). Further, Salazar argues that educational technology can facilitate online educational learning outcomes and improve student retention rates. The definition of educational technology is the hardware, systems, and software required for addressing the learners' needs. Computers, networks, and mobile devices are a part of the requirements according to Salazar. Dey, Burn, and Gerdes (2009) add to the definition by including the use of videos and lecturing capturing to the list of educational technology. The use of multimedia software and hardware provide a visual component to educational technology that can provide multiple benefits for the learners.

The use of an IWB during a lecture, which is captured on video for future uses, including online classes, adds to the educational technology possibilities for instructors. Lisenbee (2009) found the use of IWB facilitates positive learning outcomes in children. Mercer, Hennessy, and Warwick (2010) report case study findings, which support the use of IWB for dialogues that incorporate “reasoning (that is) explicit and support the cumulative co-construction of knowledge and understanding” (p. 201). Mercer et al. recommend the use of IWB in a Constructivist teaching method that includes multiple pedagogical applications. The scaffolding of learning, supporting of the temporal development of learning, involving pupils in co-constructing knowledge, encouraging of evaluation and synthesis, developing a learning community, supporting the provisionality of students' evolving ideas, guiding of the lesson flow, and developing of pupil questioning are cited as applications. The use of IWB in pre-service teacher

education coursework is another recommendation found in the literature.

Campbell and Kent (2010) support the training of pre-service teachers in the functions and pedagogical uses of IWB. In their published study, they present two case studies of universities that implemented IWB training with pre-service teachers. Their findings support the premise that pre-service teachers need the opportunity to learn the functions of IWB as well as how to integrate the technology into their pedagogy. In order for the future classroom teachers to accomplish these goals, universities must have faculty who are able to demonstrate by example the effective practices of IWB implementation in academics.

The use of iPads in K-12 school environments is a growing trend in educational technology applications (Price, 2011). The uses in education continue to develop as more uses of this technology are becoming evident in the practices of early adopters of the device (Hill, 2011). Higher education is finding an increasing number of students using portable devices in their studies, which raises the expectations as well as demands on universities across the globe (Miller, 2012). Miller describes multiple case studies of individual faculty at Indiana University that examine the faculty's use of iPads in their teaching practices, which supports the premise that "iPads and other mobile devices are making significant change to the higher education landscape" (p. 58).

2. Current Projects

2.1. Faculty Training in the Uses of Interactive White Boards

Salazar (2010) notes the need for training of faculty to ensure educational technology uses are pedagogically appropriate and technically sound. NU has retained two instructional technology specialists to develop faculty instructional materials and to provide the professional development necessary to facilitate the faculty's use of IWB, lecture capturing software, and video-conferencing. A website houses the instructional materials, which include videos of screen-captured presentations to aid the faculty in their professional development. Video-conferencing with all of the regional centers as well as site-specific training is part of the project's implementation. The goals for this project include developing the resources that will allow faculty to continue using the educational technology tools in online, blended, and face-to-face instructional environments.

2.2. Face-to-face Classroom Uses of Interactive White Boards

A goal for the NU project is to create an interactive environment in the face-to-face classrooms of the student teachers that foster the development of technology skills. Gronseth et al. (2010) note the "technology experiences during teacher training can help pre-service teachers see connections between current technology applications and the appropriate use in a classroom" (p. 30). The use of IWB by the NU faculty will include opportunities for the student teachers to observe as well as utilize the technology. The modeling by the faculty will provide a professional standard for the student teachers to modify in their own classroom practices.

2.3. Lecture Capture Parameters

Dey et al. (2009) note the "cognitive processes" of learners in online environments is different for students in multimedia rich environments (p. 380). The separation of visual and auditory input in cognition allows learners to integrate new knowledge into stored content. The results include the movement of the integrated content into a working memory, which facilitates the retention of the material or skills. The use of these design parameters in capturing lectures and professional workshops is a component of the NU lecture-capture design. The goals for the use of this

technology include the embedding of instructional content into the online (eCollege™) courses, which is a part of NU's support of pre- service teachers.

2.4. iPad Pilot Project

Geist (2011) presents the iPad use in teacher education programs as fostering changes to classroom interactions, a convenience, and as a teaching tool for educators. Geist study of iPads use supports the premise that mobile devices change teacher-to-student interactions in higher education by adding resources and interactivity options. Furthering changes in teacher education practices, NU is continuing an iPad Pilot Project that incorporates the device use in teacher education clinical practice.

3. Conclusions

The integration of the technologies in this project provides the opportunity to facilitate the educational development of pre-service teachers in the manner described in the literature. The prevalence of IWB in K-12 settings creates an imperative for university faculty to model and facilitate the use of technology with student teachers. The digital age students of today are adapt at the use of technology, which makes video conferencing a realistic as well as attainable addition to the communication tools faculty can use in their practices. Capturing lectures and professional development presentations will aid students and faculty alike in their performances in the classrooms. The growing use of iPads and other mobile devices in education from K-12 through higher education is continuing to expand. The current NU projects hold promises for providing all of the participants with the skills necessary for success in the 21st Century.

References

- Campbell, C. & Kent, P. (2010). Using interactive whiteboards in pre-service teacher education: Examples from two Australian universities. *Australasian Journal of Educational Technology*, 26(4), pp. 447-463.
- Dey, E. L., Burn, H. E., & Gerdes, D. (2009). Bringing the classroom to the web: Effects of using new technologies to capture and deliver lectures. *Research in Higher Education*, 50, pp. 377- 393.
- Geist, E. (2011). The game changer: Using iPads in college teacher education classes. *College Student Journal*, 45(4), pp. 758-768.
- Gronseth, S. Brush, T., Ottenbreit-Leftwich, A., Strycker, J., Abaci,S., Easterling, W., Roman, T., Shin, S., & van Leusen, P. (2010). Equipping the next generation of teachers: Technology preparation and practice. *Journal of Digital Learning in Teacher Education*, 27(1), pp. 30-36.
- Hill, R.A. (2011). Mobile digital devices: Dipping your toes in technological waters. *Teacher Librarian-Seattle*, 39(1), pp. 22-26.
- Lisenbee, P. (2009). Whiteboards and web sites: Digital tools for the early childhood curriculum. *Young Children*, pp. 92-95.
- Mercer, N., Hennessy, S., & Warwick, P. (2010). Using interactive whiteboards to orchestrate classroom dialogue. *Technology, Pedagogy and Education*, 19(2), pp. 195-209.
- Miller, W. (2012). iTeaching and learning: Collegiate instruction incorporating mobile tablets. *Library Technology Reports*, 48(8), pp. 54-59.
- Price, A. (2011). Making a difference with Smart Tablets: Are iPads really beneficial for students with Autism? *Teacher Librarian*, 39(1), pp. 31-34.
- Salazar, J. (2010). Staying connected: Online education engagement and retention using educational technology tools. *Clinical Laboratory Science*, 23(3), pp. 3-53.

A LEARNING-TEACHING TOOL IN FURTHER EDUCATION: ONLINE SELF-EVALUATION QUESTIONNAIRES

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Abstract

New technologies are present in our everyday life. The progress in the design and development of increasingly sophisticated electronic devices is closed to us. Let us focus on Higher Education, more precisely from the point of view of how apply to the classroom the new technologies and the need to encourage self-study and autonomy. We plan to put in practice a tool that allows to the teacher control the work of the students and also encourage the autonomy of the students respect to how they manage their time and evaluate their knowledge. Throughout this paper we describe the design and the contents of the tool, the software used, the reasons for our choice, the results and finally the feedback. We seek to draw up online self-evaluation questionnaires that make it easy the control and evaluation by the teacher and on the other hand allow students to improve self-study and self-critical point of view about their weak points of their work. We use the SCORM format to create the questionnaires and they are uploaded to MOODLE, a course management system. We put in practice this activity with seven questionnaires in a four months period with 139 students. The activity was widely followed by the students, although when the exams period was coming only students that manage their time in a more adequate way completed the activity. Surprisingly the average score was increasing over the time. Finally, most students (85%) made a positive assessment of the activity.

Keywords: SCORM, self-evaluation, online questionnaires, autonomy

1. Introduction

New technologies are present in our everyday life. The progress in the design and development of increasingly sophisticated electronic devices is closed to us. Mobile phones, tablets and computers have more advanced performance and they are more essential in our lives.

Within this framework, we must try to use all the tools and take advantage of all the potential that the information systems and technologies put with our reach. Of course, depending on the level in which we are considering the application of technologies (Primary, Secondary or Higher Education) will be different. The age of the students is an essential factor, firstly because it is necessary to get the maturity to handle with the electronic devices and also to have access to these devices. It is obvious that Higher Education offers the best opportunities respect both students and technical possibilities. Let us focus on University Education, more precisely from the point of view of how apply to the classroom the new technologies and the need to encourage self-study and autonomy. In fact, self-assessment makes the students active participants in their education. There are a variety of ways for teachers to provide the students with self-assessments. Research suggests that the simplest tools to encourage student self-assessment are evaluative questions that force students to think about their work.

Having all these in mind we plan to put in practice a tool that allows to the teacher control the work of the students and also encourage the autonomy of the

students respect to how they manage their time and evaluate their knowledge. Throughout this paper we describe the design and the contents of the tool, the software used, the reasons for our choice, the results and finally the feedback.

2. Design and contents

In this context we have to give answer to the following questions: What? How? and For whom?

2.1. What?

The subject about that we are going to work is Mathematics. This is important, because we are going to use symbols, equations and scientific notation. We seek to draw up forms or online self-evaluation questionnaires to get the two objectives that we mentioned before. We want questionnaires that make it easy the control and evaluation by the teacher and on the other hand allow students to improve self-study and self-critical point of view about their weak points of their work.

2.2. How?

The first problem is that teachers don't use to be experts in software and if you look in Internet, the variety of software is extremely wide. Finally, we decided to use the SCORM format (Shareable Content Object Reference Model) to create the questionnaires and then you can upload them to the Virtual Course (MOODLE), <https://moodle.org>. Moodle is a Course Management System (CMS), also known as a Learning Management System (LMS) or a Virtual Learning Environment (VLE). It is a free web application that educators can use to create effective online learning sites. In Moodle, you may add a variety of different types of questions in the Quiz and Lesson modules and this is quite useful but Mathematicians use special code (LaTeX) to introduce symbols and equations, so we looked for a software that allow us to use that. We finally, got Exe-learning. The eXe project developed a freely available Open Source authoring application to assist teachers and academics in the publishing of web content without the need to become proficient in HTML or XML markup. Resources authored in eXe can be exported in IMS Content Package, SCORM 1.2, or IMS Common Cartridge formats or as simple self-contained web pages. Also eXe uses LaTeX code.

When the questionnaire is created, Moodle allows us to set the options that we prefer.

1. Open/close dates may be set to restrict answering.
2. Display settings as (new or current window, width, height,...)
3. Number of attempts. Defines the number of attempts permitted to users.

When you permit multiple attempts for students, you can choose how to record the result in grade-book by first, last, average or highest settings.

Additionally, teacher can get a report of all results (all the attempts) obtained by the students, and of course, students obtained the score immediately.

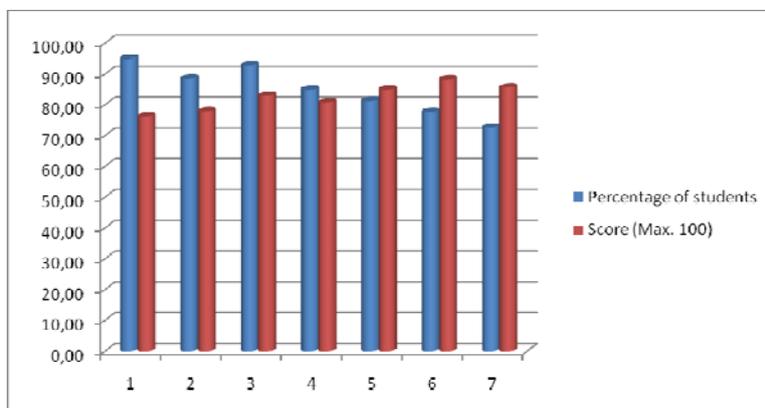
We proposed seven questionnaires through a four months course. The number of attempts for each test was three and the period of time to do it was limited.

2.3. For whom?

We propose this activity to 139 Engineering students in their first course.

3. Results

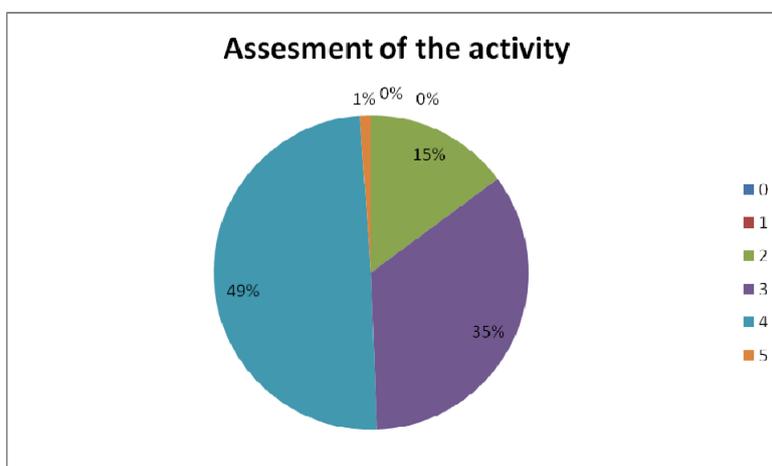
In the following graphic it is shown the percentage of students that made each of the tests and the average score obtained. It can be observed that the percentage of students that made the test number seven was significantly lower (72,66 %) compared to the percentage that made the first test (94,96%).



On the other hand, the average score was increasing, test number six (88,26) and text number seven (85,56). At the end of the course the period exams starts and only students that can organize their time are able to study and prepare their exams in a more appropriate way.

4. Feedback

Finally we wanted to know the assessment of the students. The following graphic shows the global punctuation that students gave to the activity (0 to 5).



References

Exe's web site, <http://www.exelearning.org>, latest update 02/23/2013.
Moodle's web site, <https://moodle.org>, n.d.

PEDAGOGY THROUGH CONSTRUCTING AN INTERCULTURAL SOCIETY

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Abstract

In Post-Modern society, the careful look at the increasingly multicultural population made it necessary to reconsider the human identity as enrichment, a relational value against prejudice in all its forms, giving prominence to its substance since from primary school. Indeed is teachers' civic responsibility building the horizons of pupils up to facilitate the transition from a simple restraint to a real coalescence of children from a different culture, than the one of the country in which they are. This is the reason why school symbolizes the educational institution which, before others, could be a concrete point of convergence about variances.

In this sense, this study carried out how pedagogy lies at the heart of creating an intercultural society and it also contemplates some implications well-structured on three levels:

- Training level, that is about achieving a suitable teachers' vocational training about the teaching of second tongue;
- Organizational level, applicable to workable plans of action in classroom;
- Relationship-wise level, that notices spotted benefits in behalf of local communities'future, as well as European and non-European connections, which makes on from discovering common features.

The study also analyzes the obstacles observed in the implementation of an integration project, bringing out clearly that, at the end of the work, we must ensure that we are talking about a unique culture and not a single culture, so that each consider the nation's culture like the other, adopting an ethnocentric vision that focuses on values and universal rights.

Keywords: . *Pedagogy, Inclusion, LLP, Culture*

1. Introduction

Pedagogical reflection has recovered the person as a fundamental element of the educational relationship, seen as a whole within which the elements come into relationship with each other and, therefore, the relationship takes the form of pedagogy, integrating and synthesizing all the elements related to cultural processes, finding the need to overcome the dilemma between universalism and relativism. It is important introducing the learning relationship starting from the knowledge of the stranger, through recognition and sharing,. We need construct a dialogic identity, emphasizing the need of process aimed at changing the negative influences and enhance the quality of relationships in the various educational life moments.

2. Objectives

Our research project is aimed to investigate the principles of intercultural pedagogy to extract a significant model that can recognize complex multi-ethnic society in the fundamental importance of the educational process.

3. Method

We started from the Unesco Declaration of 1966 that stated:

- Every culture has dignity and value which must be respected and safeguarded;
- All people have the right and duty to develop its culture;
- diversity and mutual influence of cultures, are part of the common heritage of humanity.

So changing is the process that involves both, strangers and natives, because one gives up something to take some elements of the other. It has come then to the implementation of an integration project carried out in a public primary school, with a high number of foreign students.

4. Results

From the theoretical argumentation and the collection of data that emerged with the realization of the project, the results were very interesting. The greatest difficulties were encountered in language learning for children whose families did not have basic knowledge of Italian language and, clearly, they were unable to offering help: socialization is, however, overall found satisfactory after only a few days before the start of school activities, despite the language barrier, which places emphasis on the function and value of non-verbal communication and relationship with the peer group. Slightly different was the integration of older children, inserted in the final year of primary school. It's possible to observe two cases:

1. a Brazilian child who came to Italy alone with his mother;
2. a Romanian girl who moved to Italy with his mother and his companion, Italian.

In the first case, the student has been shown to be affected, as understandable, the lack of a father figure: the child showed hostility towards the new environment, and to the teachers towards their classmates, that depression due to psychological mentioned above, refusing for about the first month after arrival to learn the language. In this case it was the decisive help of the other members of the class who, without prejudice, have favored the integration of the pupil stranger, making use of opportunities to meet in-school contexts (village festivals, birthdays) by entering the child in surrounding reality and making his elements belonging to the Italian culture in a natural and spontaneous way. In the second case, key role was played by the male figure already included in the family of the pupil, who has to the encounter with a different culture, the acquisition of the language and, more importantly, to life in a different country.

5. Discussion

Based on the experience of design and the logical correlation between the various topics covered, you can come to define a meaningful pattern that is characterized according to three levels.

The Organizational level provides guidance which is realizable through an educational-cultural and global. The strategies are:

- consider all aspects of the identity of individuals;
- operate making the most of the global dimension of the person, avoiding to assign a privileged role to cognitive factors and overshadow other types of learning;
- consider the footprint of emotion during the journey;
- be aware that communication is never neutral, therefore, the characteristics of relational teacher are crucial for the success of teaching, which makes it an active player of the moment of meeting;

- encourage community work, because co-operation, in view of a common obstacle to overcome, is a powerful factor approach.

Training defines the level that the teacher must be able in: places of learning are the most different so it would be appropriate to distinguish the educational processes depending on the context either formally or informally, with a view to a permanent education. The teacher, therefore, lies in the role of change agent and abilities that he must have regard:

- flexibility and creativity;
- dialogical thought; autonomy;
- problem-solving skills;
- knowledge;
- willingness to learn.

Relational level it is necessary to facilitate the sharing of core values for all, safeguarding the variety of cultures and taking account of some of the constants of the conflictual reality of the alien, such as:

- reducing psychological and emotional;
- pervasiveness of informal education in the training process;
- the need to enhance the place of origin and identity in the course of the integration process.

6. Conclusion

Shaped as a three selves synthesis, each other and the new reality in which the alien immersion, the integration process is constantly changing: even a single modification forces the entire system to evolve. Everyone is carrying a fragment of culture, which imparts its own characteristics through contacts took place with others. The same accelerative having to live is a factor of the definition of social identity and individual, encouraging openness towards others based on a mutual exchange, which does not mean to deny their origins, but this exchange, identifying the characteristics common to the respective peoples. The concept of difference, in fact, it may be contradictory: Gardner spoke about, for example, multiple intelligences, Vygotsky about zone of proximal development, which leads us to state that there are basic ways of thinking common to all peoples, and that thought is used in particular ways in different cultural environments: in this context, intercultural learning means reflecting on communication methods to assess assonances and differences that can facilitate or not the relationship. About strategies, educational intervention should solicit the desire to explore the expressive potential of the new language to understand each other, connecting to the words not only thoughts but also feelings.

References

- Gardner H., Hatch T.,1989. *Multiple Intelligences go to school: Educational Implications of the theory of multiple intelligences.*
- Moscato M.T.,2008 *Diventare insegnanti. Verso una teoria pedagogica dell'insegnamento*, La Scuola, Pedagogia 2000.
- Acone G., 2005,*L'Orizzonte teorico della pedagogia contemporanea*,Edisud, Salerno.
- Unesco Declaration, October 4th 1966.
- Magis C.,Zoderer J., 2003,*Identità e Multiculturalità*, Junior.
- Colombo E.,2002, *Le società multiculturali*,Carocci

IMMIGRANT PUPILS IN SLOVENIAN SCHOOL SYSTEM - BETWEEN SYSTEM AND PRACTICE

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Abstract

A number of international studies show that in most countries, pupils with immigrant backgrounds do not achieve comparable school outcomes; therefore some countries have developed a range of support mechanisms. We found that Slovenian school system does not provide the conditions to make it easier for immigrant pupils to learn Slovene and develop their own cultural identity - also the intercultural education concept is still refused by many teachers. The purpose of this poster is to present how some teachers in Slovene primary schools are forced to innovate their own practices to help immigrant students succeed and how they are (not) supported at the institutional, local and national level. Semi-structured interviews with teachers have been conducted. The research results show that many teachers strive to remedy the situation of their immigrant pupils by different innovative practices, which are not part of the school system. Due to the immigration to Slovenia, which has grown since we entered the European Union, it will be necessary to ensure more effective mechanisms of support for the academic and social progress and inclusion of the (newly) immigrated pupils, if we wish to implement some of the international documents (Convention on the Rights of the Child, Declaration of Salamanca, etc.). Also, from the point of view of the practicing teachers who often deal with this task on their own, it is to be expected that expert institutions prepare at least some teaching aids and didactical material that will help the teachers when working with newly immigrated student.

Keywords: *Intercultural education, Slovenian school system, innovative practices, teachers, immigrant pupils*

1. Immigrant pupils in schools in Europe

The number of immigrants in most of European countries is rising. Modern school systems, especially those that set justice as the fundamental value and the criterion of school's quality, give this area a lot of attention. Policy makers in the modern societies, where multiculturalism is incorporated into the national political program, strive for educational system to be accessible to all the students, regardless of gender, culture or language. Considering that the educational policies have to be adjusted to different vulnerable groups, if "school for all" is a guidance to follow, different methods and mechanism need to be innovated to enable children with different cultural and language environment to succeed. In most countries considered by the 2009 PISA report, significant differences can be noticed between achievements of immigrant pupils and those without foreign background. From the report, it is concluded that the differences are difficult to attribute exclusively to socio-economic factors or language spoken by those students, but undoubtedly, there is an interdependent link between the status of immigrant pupils and their achievements (PISA, 2010: 81).

According to MIPLEX research (2011), education emerges as a major area of weakness in the immigrant integration policies of most included (31) countries. Some

countries have, comparing to others, developed integration measures, support mechanisms and strive for equal opportunities in education. On the top of the Education Rankings, Sweden takes 1st place, followed by Canada, Belgium, Finland and Portugal¹. Comparing Sweden to Slovenia (which is slightly unfavourable and ranks in 24th place), we can clearly see that intercultural education in Sweden has been implemented in national policies as well as in school practice.

2. Immigrant pupils in Slovenia - Inappropriate policies and lack of systematic support?

In Slovenia, the law says that immigrant children should be given an education under the same conditions as Slovenian citizens and mother tongue tuition should be provided in accordance with international contracts (Article 10 of the Elementary School Act). In practice, this policy is mostly not realized. The opportunity to learn Slovenian language for children whose mother tongue is not Slovenian is provided by law based on various documents, but the extent and form of learning Slovenian are very different in individual laws (see Table 1). Learning immigrant pupils' mother tongue is not usual, but in practice mostly possible only if schools connected to active cultural associations. Schools that accepted high percentages of immigrant children were therefore forced to innovate their own practices, obtain funds, so they could implement intercultural principals in their school and give their pupils opportunity to succeed.

Table 1. Laws that regulate learning Slovenian for immigrants (Strategy..., 2009)

Immigrants	The right to learn additional Slovene language in basic state policies	The right to learn additional Slovene language in educational policies	Actual implementation (elementary school)	Financed by
Economic immigrants	The right is defined – the extent of learning is undefined.	The right is undefined.	35 hours/year.	Ministry of education.
Immigrants with Slovenian citizenship	There is a right – the extent of learning is undefined.	The right is partially defined in elementary school policy.	35 hours/year.	Ministry of education.
Asylum seekers' children	The right is defined – the extent of learning is 2 hours per week.	The right is undefined	35 hours/year.	Ministry of education.
Refugee's children	The right is defined – the extent of learning is 300 hours (+100 h) per year.	The right is undefined	35 hours/year.	Ministry of the interior, Slovenia.

3. Empirical study

Four interviews with teachers teaching in schools where the percentage of immigrant pupils is above 50 % were conducted.

The main research findings:

- Teachers prepare adjusted worksheets (simple language, illustrations and photographs added, including mother tongue words).
- When new issues are addressed, small dictionary is added (mother tongue – Slovenian).
- For teaching Slovenian, teachers use textbooks meant for children with special needs.
- Active cooperation of teachers with cultural associations (mother tongue tuition, multicultural events).

¹ Belgium, Finland and Portugal share the 3rd place.

- Teachers encourage parental involvement in schools with simple events (“food festival”).
- Most pupils do not even receive 35 hours of Slovene language tuition. Mostly up to 15 hours/year.
- Many times children are to be considered as children with special needs (this is the way to gain extra hours of Slovene language).
- Teachers who provide Slovene language tuition lack knowledge on how to teach Slovene as a second language.
- Didactical material is handmade – no funds are provided to print it or spread it.
- Preparatory class (1 week/1 year) – self-initiative of principal and teachers.
- Individual pupils’ plan.
- Students - as interpreters.
- Mostly, without national or local support mechanisms (except few NGOs).
- Teachers’ work and inputs are voluntary.

Teachers also mention that there is a lack of professional literature for intercultural education in Slovenia and that some teachers are not familiar with the intercultural education concept. There are truly no applicable handbooks or practical orientations, which teachers could use. Some short seminars are offered annually by Institute for education. The Ministry of education and sport has published the guidelines for educating foreigner children in kindergarten and school (2009) (- on 12 pages!), but they are not implemented in policies.

Some schools dare more than others, are more self-initiative and propose projects addressing this issue. They work closely with the NGOs and cultural associations, which unfortunately also mostly do not have enough finances to provide quality mother tongue tuitions or other events (except if they gain and run a project addressing this issue). At the end, we can say that teachers are the ones that carry most of the “burden”... It looks like national authorities do not support their work.

Not much research has been done on the thematic of showing actual situation in Slovenian schools. The results of the research, carried out by M. and I. Peček, Lesar (2006) are quite interesting. The argument, that the students prior to entering the school should take a course of Slovenian language, is supported only by 28.7% of the teachers. Teachers have rejected this option, even though research shows that transitional form of bilingual education assists. It is surprising that most of the teachers reject this option, even if they do not have any support when they are integrating an immigrant child in their classroom. At this point, it makes sense to pose the question: Are (most) teachers’ attitudes towards the implementation of intercultural education in Slovenian schools negative?

References

- Peček, M., Lesar, I. (2006). *Pravičnost slovenske šole: mit ali realnost*. Ljubljana: Sophia.
- British Council and Migrant Policy group. (2011). MIPEx III: Migrant integration policy index, (n.d.) www.mipex.eu
- OECD. (2010). PISA 2009 Results: Overcoming Social Background: Equity in Learning Opportunities and Outcomes—volume II, (15. 4. 2011) http://www.oecd.org/document/61/0,3343,en_2649_35845621_46567613_1_1_1_1,00.html
- The guidelines for educating foreigner children in kindergarten and school. (2009). Ljubljana: The Institute of education.
- Strategy of integrating immigrant children, pupils and students in Slovenian educational system. (2007). Ljubljana: The Ministry of education and sport.

COORDINATION PROJECT BY WORKING WITH THE ADVERTISING STUDENTS OF JAUME I UNIVERSITY FROM CASTELLÓN, SPAIN

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Abstract

Finding new ways of coordination and interdisciplinary relationship should lead to teachers to seek opportunities and exploit solutions that improve the results in the teaching - learning process.

Therefore, the need to relate knowledge, so that students understand that different subjects and skills that make up their education are not enough by themselves, what is more, they are only valid when all of them are put in relation and synergy.

For this reason, the Advertising and Public Relations Degree works in a project that seeks to give an overview, having as a framework of action classroom work, tutoring of teachers and the contact with professionals and companies, in order to get a complete symbiosis between theory and practice.

The subjects involved in this activity are Outdoor Advertising, Media Planning, Creativity in Advertising, Advertising Companies and Strategies of Communication.

Through a seminar, featured by the visit of well-known professionals, students are faced with a real problem, proposed by these professionals. The projects are worked in classrooms, and then there is a defense of each work and the results achieved.

In this way, the involved subjects interact and establish links in order to give an overview of the areas of interest. Teachers perform an important role of coordination and both groups manage to update their knowledge, thus causing a substantial enrichment at all levels.

Keywords: *Coordination, teaching-learning process, projects, advertising*

1. Introduction

The changes that are suffering the advertising media are doing essential to provide students with new skills -for good professional practice- based in innovation. The media are not isolated, otherwise they interact with other specialties and areas of communication, it is because of that the need of working together with different subjects of the Advertising and Public Relations Degree.

Furthermore, this project will give students the opportunity to work with real cases, in different subjects and interacting not only with teachers but with professionals.

This initiative answers to the way of conceiving the University Professor role by the teachers team of the Advertising and Public Relations Degree, due to the fact that the tasks of University Professor are: research, teaching and the tutoring of students¹. Therefore, the research is not a task to specialized and reserved for some people, but it is indispensable and necessary for supporting, guiding, questioning or remodelling the quotidian experience, in order to be developed by both, teacher and learner. In that sense, Perrenoud² points that the teacher must know how to involve students in research activities and knowledge projects thanks the skills of the

¹ Vázquez, G. (1975), pág. 17

² Perrenoud, P. (2004), pág. 29

teacher: doing accessible and desirable their own relationship with knowledge and research.

In that sense, some European pundits begin to talk about the third mission of the University, as well as teaching and research, the importance of the approach between the corporate world to University and vice versa. This third dimension of the University implies a constant dialogue between entrepreneurs and academics. Zabalza³ affirms that the three traditional functions that can be attributed to the University Professor are: teaching, researching and management through the various institutional levels, but that we should add, today, what someone calls business. It consists in the search for financing, negotiation of projects and agreements with companies and institutions, consultations, participation as experts in various scientific forums, etc.

2. Objectives

The objectives of this project are:

- A deep analyse of the advertising media by students.
- The application of the theories learnt in class to a real case study.
- Provide students with real-life experiences that help them to develop their activities.
 - Offer a critical view of the present and future of media advertising, with innovation as a theme.
 - Working with the latest developments in the Spanish market and even at international level.
 - Give students the bases for seeking links between subjects, concepts and materials in a critical way.
 - Creating the chance, for teachers and professionals, of sharing experiences and knowledge for a practical application in the classroom.

3. Methods

The methodology used in this project is based in the combination of theoretical knowledge, within the framework of the subjects involved -Outdoor Advertising, Media Planning, Creativity in Advertising, Advertising Companies and Strategies of Communication- with the resolution of practical cases.

At the beginning of the course, teachers and experts from the Asociación Española de Empresas de Publicidad Exterior, AEPE, reach an agreement about the case for being worked for students in groups. This exercise is supervised by teachers during the course.

The topics are always about current issues, for example: European elections, the economical crisis, climate change, support innovations, etc. The projects have a dual assessment: on one hand, they are evaluated with different criteria in the different subjects, and on the other hand, they are evaluated by the AEPE pundits who, from a public exhibition in the faculty, valued the work done, in terms of innovation, creativity and viability.

The best projects, chosen by teachers and professionals, are orally presented in order to choose the best solution to the case raised.

Students also have the opportunity to work with these professionals, thanks to a Seminary associated with this university project. During it lectures and roundtables take place for the purpose of putting together the current communication trends.

³ Zabalza, M. (2004) Pág.137

As a conclusion, the general methodology of the project has been providing both theoretical and practical information, the participation of professionals and the involvement of the students through their work.

4. Conclusions

The results obtained for the whole project has been appreciated very positively by students, teachers and professionals.

The most significant quantitative results are: 12 editions, 12 different topics worked, about 840 students involved and 240 works presented, 48 professionals from 40 different companies have participated in the seminar.

Qualitatively talking the results are:

- The students have been able to work on real cases in their degrees, to know different roles of advertising industry and to think about their professional future. This means that students have an additional motivation thanks to the opinion and the professionals pieces of advices.

- Agreements with different companies has been established so as to make the *practicum*.

- Teachers have carried out researches and collaborations with companies that have visited the University.

- Students were able to view the interrelationship of the subjects involved, obtaining an overall view.

- The mass media, both general and specialized, have spread the activities within the project, bringing the brand of the Jaume I University to the whole country.

- As a result of the seminar, every year the winners participate presenting their campaigns during the Annual Outdoor Advertising Congress organised by AEPE, which brings together more than 250 different professional profiles in the world of advertising.

- Some of the solutions presented throughout the 12 editions have been used by companies.

References

- PERRENOUD, P. (2004). *Diez nuevas competencias para enseñar, invitación al viaje*. Barcelona: Graó biblioteca de aula.
- SUÁREZ, B. & GALÁN, L. (2006). Conferencia Jornadas sobre Empresa y Universidad. Universidad de Zaragoza.
- VÁZQUEZ, G. (1975). *Técnicas de trabajo en la universidad*. Pamplona: Ediciones Universidad de Navarra.
- ZABALZA, M. (2004). *La enseñanza universitaria. El escenario y sus protagonistas*. Madrid: Narcea.

THE APPRECIATION OF CORPOREALITY IN EDUCATION

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Abstract

How was reevaluated corporeity in post-modern thinking?, how to reassess your body in current culture and teaching practices?

Our research work has outlined, through a theoretical analysis of argument, the overcoming of mind-body dualism by corporeality, for rethinking education offering to the individual which grows to a learning environment that allows, in particular, its body size and, through it, to contribute to the implementation of cognitive structures.

This objective was pursued thinking about cultural body models to change the meaning. First, they go from establishment of the marginal role assumed by the corporeality in Western thought since the Cartesian mind-body dualism, translated in the dualism between science and philosophy (Snow .1956) giving rise to a series of stereotypes on the concept of Science (Popper .1970). This work is the result of an accurate reflection, carried out in a few stages:

- the absence of "body" value considerations in the educational system, structured on cognition (Gomez Paloma .2004); the examination of Cartesian thought and the concept of corporeity in philosophy;
- contaminations between philosophy and education with the marginalization of corporeality in education
- analysis of recovered body function in learning through the "pedagogy of the body", "therapy", supported today by neuroscience (Gallese.2006; Damasio 2000)

To reflect on corporeality leads therefore to create a multidimensional and multidisciplinary discourse, trying a dialectical synthesis in mind-body. Recomposition of fragments in corporeality unit becomes the central node of the "pedagogy of the body" (Gamelli .2001). Research on corporeality draws links between body-emotional experience and learnings, paying attention to the role of the movement (.1998 Berthoz), and then physical education. The body is recognized as the seat of cognition, speak of "embodied cognition" (Welsh .2005), seat of emotionality (Damasio .1995), of sociality (Rizzolatti-Sinigaglia, 2006; Welsh, 2006; Siegel, 2001) and human behavior is the result of body and mind, "not separate entities, but intimately interconnected" (Goleman .1996).

Keywords: *Body, emotions, dualisms, philosophy, neuroscience*

1. Introduction

The increase of social complexity and the imperatives of the knowledge society redefines the concept of human educability in terms of "competence", requiring a rethinking and a re-evaluation of the element of human experience: the body size, both in education and in educational practices. Only in the twentieth century theories about body begin to be free from the constraints of rationalistic Cartesian reflection and moralistic and sexual limitations of religious culture, to land in new educational frontiers that consider the physical size of the child as a fundamental instrument of knowledge and relationships. The body is recognized as a language, active perception, pre-liberation intuition, categorical intellectual place, imaginative and communicative

potential. These conceptions have found expression in new interpretive paradigms and cultural models and, especially, in a series of research conducted in the psychological and neurobiological field. These studies are showing how and if a child can learn through the body and its senses. From Rousseau to Montessori, Piaget to Merleau-Ponty, Wallon and Gardner, cognitive exploration of the environment and the social interactions, the construction of personal identity and the first human conceptualization levels take place on the basis of movement and spatial-temporal coordination carried out by the experience of his own corporeality. Neuroscience receipts, results of studies on the nervous system, confirm, finally, the function of the motor area of the cerebral cortex to the perception, then the development of intelligence and the ability to adapt to the environment in the intersubjective relationship (Welsh, 2006; Rizzolatti and Singaglia, 2006).

2. Design

The research group has conducted studies to identify the importance of corporeality in education and didactic. The first stage was to highlight the need for a renewal in teaching traditional cognitive style to make significant learning's. To do this we have served for possible connections between the disciplines from the corporeality and physical education, and stress the importance of the formation of specific expertise in the professionalism of teachers.

3. Objectives

The aim of this work is to identify the pedagogical reasons and scientific assumptions for a reorganization of the traditional teaching based on the reassessment of human bodylines, to identify dialectical synthesis in the body of the modern dichotomy between nature-science and culture-philosophy.

4. Method

The theory and argumentative method has been used to review the philosophical literature on corporeality, in order to highlight, in the first instance, traces of marginality and mortification of the body in modern philosophical thought and research on humans, and its impact in education-educational. In the second instance, neuroscientific literature has been studied to support the need for a body based on experiential learning, identifying the educational implications of neuronal search, highlighting, in particular, studies on the motor area of the cerebral cortex and its possible correlation with the teaching-learning process.

5. Results

Through the comparisons of the empirical evidences collected it has been suggested that the basis of the teaching-learning process raises the corporeality, as a link between the ego and the world. Neuroscientific research has shown that the relationship between body, consciousness, intentionality, intersubjectivity, represent the starting point upon which human and educability rethink education through educational actions centered on bodily experience.

Corporeity calls into question the material and biological dimension of being human, inseparably linked to that deficit. To reformulate the concept of body, starting from the school experience of corporeality through the psychomotor and physical education implementation, allows the child to learn in a multidimensional and multi-sensorial environment, where the process of knowledge is carried out through the knowledge of one's own body identity formation. This ensures a holistic and integral training: thought, consciousness, memory is related to the motor behavior of the

individual, as is evident from the research on biological bases of action (Rizzolatti .1937) and mirror neurons (Rizzolatti-Sinigaglia, 2006).

6. Discussion/Conclusion

The rediscovery of the body through the neuroscientific research lays the groundwork for a rethinking of the education and training physical education role in the school context. To achieve this objective, it is necessary to restore centrality and dignity to those learning concept of person in which it finds itself, as Mounier, "the horizon of meaning of human action". Within the educational process, the attention to the subject-person, holistically understood in its entirety, cognitive, affective and emotional, is the crucial point for bringing out the potentialities, the excellence and talents of each student. The child who learns through the emotions triggered by body, can bind learning's to significant situations, which exceeds the typical verbalization of traditional teaching, allowing the formation of stable conceptualizations, stored in long term memory. The theory of Embodied Cognition of Vittorio Gallese confirms that knowledge happens in bodily and brain systems, in particular through the sensorimotor system. Several studies show a direct correlation between the implicit representation of movement and cognitive processing of language, in the process of "Embodiment". In this context seem to move innovative educational theories of the New Literacy Studies organized around the idea that the skills of reading-writing, acquired with alphabetic writing, are not the only skills to acquire alphabetical learners, especially in light of the information society. Specifically, it has been shown that the disciplinary learning experience can become significant when it binds to the experienced real or virtual body (game, Lim, Ipad). The meanings set is created when a word can be bound to an image, action, experience, talking in a real or imaginary world; However, if such an association is failed, the student may even pass a test, but couldn't easily apply that knowledge in a real problem — might find it difficult to develop skills through the single verbalization (Gee, 2007).

In fact, learning is not to store a definition or concepts in the abstract, but in building a repertoire of experience to operate strategically to predict how behave in similar situations. This is what explains the neuroscientific research talking about action repertoires and mirror neurons. If the teacher does not tell but solves the problems, by being looked in action, acts as a body model, and its action becomes an experience-model. The imitation of the model allows the subject to draw not from his repertoire pattern of motor actions, but building new ones.

References

- Berthoz,A (1998). *Il senso del movimento*. Milano: McGraw-Hill
- Damasio,A.R. (1995). *L'errore di Cartesio.Emozione, ragione e cervello umano*. Milano: Adelphi
- Damasio, A.R. (2000). *Emozione e coscienza*. Milano:Adelphi
- Gallese, V. (2005). *Embodied simulation: from neurons to phenomenal experience*. Phenomenology and Cognitive Sciences
- Gamelli, I. (2006). *Pedagogia del corpo*. Roma: Meltemi
- Goleman,D. (1996). *Intelligenza emotiva*.Milano: BUR biblioteca universitaria Rizzoli
- Gomez Paloma, F. (2004). *Corporeità ed emozioni. Una didattica psicomotoria per la costruzione del saper...essere*. Napoli: Guida editore
- Husserl, E. (2008). *I problemi fondamentali della fenomenologia. Lezioni sul cochetto natural di mondo*, a cura di V. Costa, Quodlibet
- James, W. (1948) *Principles of Psychology*. London: Mcmillan
- Marleau Ponty, M. (1945). *Phenomenologie de la perception*. Paris: Librairie Gallimard
- Mounier, E. (1961). *Le personnalisme*. Paris: Les Presses universitaires de France, 7e édition

CORPOREALITY AND NEUROSCIENCE FOR THE OVERCOMING OF CULTURAL DUALISMS

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Abstract

The globalization of markets and increased social complexity require a reform of educational systems to develop quality education, able to form the cosmopolitan and planetary citizen (Morin, 2010). Investing in human capital and training is a very interesting theme in European environment. The "ET 2020" shows that education should drive smart, sustainable and inclusive growth of nations. Faced with a steady increase of the complexity of a social reality more and more "liquid" (Bauman, 2002), it is necessary the encounter of scientific and humanistic knowledge, traditionally separated, to find solutions that are consistent with progress, promoting a holistic education.

How do you put in the dialogue? And how can you do this in the local reality of the school?

To find answers, our research team has carried out a theoretical analysis of argument on the unraveling of the educational phenomena in the concrete teaching practices in Italy, starting with the identification of variables that converge in the teaching-learning process and focusing on disciplinary curriculum separatism. The investigation began with an analysis of the philosophical and pedagogical literature, continuing with the examination of neuroscientific research, to identify the possible educational implications and the possibilities to improve the training offered. Sharing with the neuroscientist Antonio Damasio the noted "Descartes' error", they identified the effects of Cartesian thought in education-teaching, highlighting how the modern diarchy of mind-body and mind-emotions were reversed in school activities.

Our job was to examine:

- opportunities for encounter and dialogue between science and philosophy, neuroscientific research offerings (Welsh, 2005; Damasio, 1995; Rizzolatti, 2006);
- the separatism between "hard" disciplines, domain of rational logic and science, and "soft" disciplines, domain of corporeality and emotionality in school teaching practices;
- prejudice and cultural stereotypes on the concept of "Science" (Popper, 1996);
- the educational implications of neuroscience in terms of experiential learning;
- the importance of corporeality and emotionality in meaningful learning.

The correlation between the data showed the value of active and integrated teaching practices to ensure the holistic formation of developmental topics, and to offer the minds multiple intelligences opportunities for multidimensional learning (Gardner, 2000). In particular, it was pointed out the metacognitive and ludic approach of "serious game", in which the didactic discourse meets semiotics and hermeneutics, chanting the learning stages based on body, investigated in lived triarchy body-mind-emotions (Damasio, 2000; Welsh, 2005).

Keywords: *Neuroscience, experiential education, disciplines, corporeality, mind*

1. Introduction

The old dichotomy between nature and culture, philosophy and science, mind and body that has characterized Western thought finds a trait d' union in neuroscientific research, that lead to the centrality of the body as a place of knowledge, able to meet

the challenges of complexity. Challenges are overcome through a reformulation of the education system, a reorganization of disciplinary knowledge and teaching. The proposed attempt, through the examination of the different strands of research indicated, is to overcome the traditional oppositions between life sciences and human sciences, in order to link the material and corporeal dimension of the human cognitive dimension. The existing connections between the various interpretative models of human reality, draw attention to the physical education as a discipline of corporeality. Nature and culture, modernity and post-modernity, merge into a trail designed starting from the body and the stimulation of different areas of the brain, linking the concept to emotion, the symbolic system of meanings to the movement of the body, offering useful pedagogy for a multilingual educational and multidimensional design, careful to respect, to promote and to sustain the instances of the body and mind integrated into a single complex system. The importance of the body as a precondition of the learning's and educational subject, requires a rethinking of the role and function of physical education in the school context, because it enhances the apprehensive and expressive potential by motricity, which is a crossroads for connections between different fields of human knowledge. Mind, brain (such as material substratum of thought) and body are bonded and act in synergy with the environment in which they occur in educational and training experiences: pedagogical reflection solders to teaching reflection considering the importance that the organization of educational contexts (spaces, temples, cultural mediators, affective, interpersonal relations, climate) to turn on, support and enhance the natural availability to learning. The pedagogy is responsible for the full recruitment to the task of translating operationally this project, to build training courses addressed to the identification of new concepts and new knowledge, to the designation of new interpretive paradigms, promoting a vision of those poles holistically interdependent concepts that tradition has divided and put in opposition (nature/culture, mind/body, reason/emotion) for the development and dissemination of an integrated view of human formation in a unique cultural project.

2. Objectives

The objective of this paper is to outline the overcoming of cultural dualisms through research rehabilitation and corporeity as founding of the human dimension.

3. Design

The research group has conducted studies to determine the impact of rehabilitation research in the long debate on the subject of cultural dualisms and, in particular, in the dichotomy between science and philosophy, between rationalistic and ontological paradigm. A dichotomy that led to separatism among the subjects and, more specifically, to the distinction between the disciplines considered "scientific" and those considered "soft" instead.

4. Method

It has been used the theoretical method to query the argumentative neuroscientific literature and philosophy, physics, and humanities to find the commonality in the objects of investigation, or the investigation of human consciousness in the tension between nature and culture, synthesized in neuroscientific discourse of mind-body interaction.

5. Results

The dialogue between neurosciences and human sciences indicates that the Neurosciences and corporeity are the connection point and the various knowledge hub

on the man ((Welsh, 2005; Damasio, 1995; Rizzolatti-Sinigaglia, 2006). It is clear that the current scientific literature and social complexity highlight possible connections between the disciplines given by science, starting with a new logic based on problems of a complex reality (Morin, 1993).

Paradigm of complexity and simulation methodology, through the use of information technologies also allow to optimize the complementarity of the different research traditions on the mind; the interweaving of these various approaches allow to overcome the gap between traditional disciplines and disciplines of mind and to access to the study of the complexity of the mind-body system.

6. Discussion/Conclusion

It is necessary a new methodological approach in didactic, considering the changes introduced by neuroscientific research, which definitely can be considered the focal point of connection between different knowledge and the starting point to define a new perspective of teaching. It is indeed crucial to the meeting between knowledge in the management and resolution of issues related to social complexity and psychosocial phenomena, which require a multidisciplinary, multisectoral type but mostly integrated. A teaching that considers the development of the person in a holistic sense, starting from biological neuronal system allows the adaptability to the external environment. At the base of the teaching-learning process arises, in this way, the body, understood as the crossroads of knowledge and learning's, the synthesis between nature and culture. Perception, attention, memory and executive processes (Metacognition), language, emotional size require a study in which biology and cognition are integrated. Neurosciences assume the task of establishing a fruitful dialogue between scientific and humanistic culture, pedagogical-didactic terms translates into a renewed design is that educational methodology. In particular, body experiences express his educational potential in the use of new technologies including the corporeality in the process of knowledge, as in the case of serious game. In fact, the student learns within the semiotic domain of subjects as in the traditional video game; interacts with the content through the body real and virtual identities that give an emotional significance to the process of knowledge; enter in relation with others in team play and experience empathy; check your own process of comprehension. Through this approach, we emphasize the development of transversal skills that make it possible to consider the different subjects as views on reality and to build a unified and exchanged knowledge in the course of personal and professional training.

References

- Bauman, Z. (2002). *Modernità liquida*. Roma: Laterza
- Damasio, A. (2000). *Emozione e coscienza*. Milano: Adelphi
- Gallese, V. (2005). *Embodied simulation: from neurons to phenomenal experience*. Phenomenology and Cognitive Sciences
- Gardner, H. (2000). *Formae mentis*. Saggio sulla pluralità dell'intelligenza. Milano: Feltrinelli
- Gomez Paloma, F. (2009). *Corporeità didattica e apprendimento. Le nuove neuroscienze dell'educazione*. Salerno: Edisud
- Morin, E. (1993). *Introduzione al pensiero complesso. Gli strumenti per affrontare la sfida della complessità*. Milano: Sperling & Kupfer
- Morin, E. (2010). *Una testa ben fatta, riforma dell'insegnamento e riforma del pensiero*. Milano: Raffaello Cortina Editore
- Popper, K. R. (1996). *La società aperta ed i suoi nemici*, trad. italiana di Pavetto R., a cura di Dario Antieseri, Roma: Armando
- Rizzolatti, G., Sinigaglia, G. (2006) *So quel che fai, il cervello che agisce e i neuroni a specchio*, Milano: Raffaello Cortina

EDUCATIONAL POLICY ANALYSIS FOR INCLUSION IN ITALY

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Abstract

The European Agency for Development in Special Needs Education conducted a survey on best practices educational and inclusive in March 2003, involving fifteen European countries and starting with some basic questions. What pedagogical practices have produced positive results? How can they meet with the existing differences among the pupils in a class? And what are the necessary conditions to face them?

In this sense, our research group has carried out a theoretical argument about the state of art of the educational phenomenon inclusion in Italy, starting from the identification of causal variables that affect the actual educational practices, ranging from the innovative theories in pedagogical-didactic character, in order to arrive to of the combinations of possible resolutions, according to a logic of priority interventions and budgetary effects that they may bring.

Starting from the laws, the investment policies and the laws governing the application for inclusion in our teaching, our work was to examine: Italian politics and its investment in the real-inclusive process of education; the cultural predisposition of our faculty to recognize the value of diversity as a resource; empathic-vocational skills of our faculty to guide the profession; the best match of the results of the methods adopted.

With interesting data emerged from the analysis of the items stated above, the working group has finally selected some methodologies deemed important and necessary across elevation successful training. These include: the cooperative method in which the matrix is recognizable of Vygotsky's thought; metacognitive approach is fundamental to "learning to learn", the Mindfulness as promoting meaningful learning, facilitated by the use of technological tools and cognitive maps. Finally this scenery can be considered as an "international glue" in which ICF classification pay attention to the potential and overall resources of the subject, identifying, therefore, all that can be "barrier" or "facilitator" of the process of inclusion.

Keywords: *Cooperative learning, Life project, ICF, Cultural barrier*

1. Introduction

The European Agency for Development in Special Needs Education conducted a survey on best practices educational and inclusive in March 2003, involving fifteen European countries starting with some basic questions. What pedagogical practices have produced positive results? How can they meet with the existing differences among the pupils in a class? And what are the necessary conditions to face them?

Assuming the beautiful words of Marc Augé "The border is not a wall that prevents the passage, but a threshold that invites you to step in", with a view to underlining how, on the contrary, in the field of school learning processes, the differences which are considered deficit characteristic of disabled pupils, are usually confined to a main area of adaptation and compensation towards the "normal" pupils. The first ones, in most cases, are exclusive prerogative of skilled teachers, especially when they are so severely disabled that these differences actually represent a clearly defined line which limits their inclusion. In order to fully understand the limits of the integration model used in our country and put in context the need felt to protect what,

and with difficulty, we have achieved over the years at a normative level and also to firmly promote a change from the inside, it is essential to start from the analysis of the international pattern about the theme of the several approaches adopted for the integration of disabled pupils in common schools. According to what was established in a recent MIUR Convention on disability, which took place in Rome last December, they are basically due to three descriptions: totally inclusive, clearly distinct and mixed approach. The clear development of the first one is surely sign of the great recognition, suitably highlighted among the conclusions of the European agency, of the fact that what disabled pupils benefit from also helps the whole community.

2. Design

Initially we have focused our attention on the international and European scene in order to identify any analogies or differences to the Italian one. The premises, which have been determining the change to an inclusive model in Italy too, have been examined through the reading of the several proposals that literature has come up with: a change of perspective, which is certainly the effect of the several conventions and statements recorded either on the international or the European scene.

3. Objectives

The objective of our research is to analyze, in accordance with a theoretical-argumentative model, the development of the pedagogical and normative proposal related to the Italian integration model.

4. Method

The methodological pattern of the research that our study group has carried out is of a theoretical-argumentative nature, with a view to analyzing firstly the scene of the inclusion phenomenon in brief, then to thinking, also in relation to the policy promoted by the European countries, over the strategies which have to be added in order to face the critical problems arising in the Italian educational system.

5. Results

Among the above-mentioned international agreements, it is sufficient to mention the Universal Declaration on Human Rights (1948) and the Agreement on the Rights of Disabled People (2006), ratified by Italian Parliament too with the March, 3rd 2009 Law. However, on the European scene, the principles, stated in the Statute of Salamanca in 1994, are effective since they promote, really in brief, the equal opportunities as for the access to school and the consequent removal of differences, valuing each subject's strong points.

The concept of inclusive education and inclusion on the international scene takes shape exactly thanks to the Declaration of Salamanca, as well as the concept of personalization of the formative pattern consolidates, based on interests, attitude and need for individual learning (Lascioli A., 2001). In a similar way, not only does the Charter of Luxembourg (1996) reiterate the concept of "a school for everyone", but it also emphasizes the need to adopt flexible systems of education in reply to each pupil's several needs (Guide principles to promote quality in the inclusive school. European Agency for Development in Special Needs Education). The social and pedagogical message, expressed in these documents, has surely contributed to make sure that even Italy – a country which has boasted of a theoretical model of reference in Europe – in the light of crucial problems arisen at the either organizational or governance level starting from 2000, has been gradually going from the integration paradigm to the inclusion one, according to the Anglo-Saxon approach (Booth T., and

Ainscow M., 2008) “Inclusive Education”, conveniently adapted. Therefore, just in order to go along with the guidelines of the European Commission, the term “inclusion” has been first adopted in the recent Directive enacted by MIUR on BES (Special Needs Education) in 2012 and in the following circular of 6th March 2013. This with the announced purpose to open the regulatory framework to a more organic vision, which frees the so-called special needs of the sheer logic of medical diagnosis, and which recognises, according to a bio-psycho-social view of ICF, whatever difficulty in learning, even if temporary, as a substantial way of starting a personalized path, consistently with the requirements of the Law 53/2003 and the legislative decree 59/2004.

The Democratic Initiative Centre of Teachers on integration quality has carried out a significant research, which notices that just the 27,5% of the people interviewed think that this has been actually realized in the many school orders (Medeghini et al, 2013). In other words, it is about renovating the traditional integration model, whose focus is represented by the bipolar reality based on the recognition of pupils with or without disability, adapting it to the new and harder school reality, which forms part of the disadvantage area inside a much wider and more flexible link, capable of overcoming the “deficit” strict health dimension and of including again, in addition to the specific learning troubles, regulated by the Law 170/2010, as well as disability, cultural, social and economic disadvantages too.

Beyond the epistemological choice, the dropping of the ability view proves to be binding, highlighting the pupils with his/her deficit in a teaching-learning process, in favor of a well worked-out program of substantial changes to curricula and, more in general, to the whole educational system (Medeghini et al, 2013).

6. Discussion/Conclusion

The use of teaching approaches based on the institutional pedagogy principles, once more represent an essential way of facing this complexity with pedagogical strictness. For an incomplete reason, the cooperative learning and teaching (Dewey J, 1916; Comoglio M., 1999; Vygotskij L., 1978), the problem solving, the group work organized with kinds of tutoring among equal people (Johnson D. and Johnson R, 1987; Slavin R., 1991), as well as the metacognitive teaching (Flavell J.H. and Wellman H.M., 1977; Brown A.L., 1978) must be considered. On the other hand, in the current phase of discussion, we must urgently focus on the problem of how to reformulate the support teachers’ role and use, as well as the one related to the development of the same curricular teachers’ educational profile. As for the first ones, it must be highlighted that they certainly represent the heart of the current educational system, which is subject of hot debates even at a political level. In fact, in spite of several examples of good shared procedures, this professional role is still trapped in a kind of specialized teaching. On the contrary, the second ones lack of those specific competences required to deploy, according to lanes, a “special normalità” for all the pupils, addressing them, in some cases, to “expulsive” logics rather than “inclusive”.

References

- lanes D. (2006), *La speciale normalità*, Trento: Erickson
 Lascioli A. (2011), *Dalla teoria all'azione*, Milano: Franco Angeli
 Medeghini R. et al. (2013), *Disability Studies*, Trento: Erickson
Principi guida all'integrazione scolastica degli alunni in situazione di handicap. Raccomandazioni politiche (2003), European Agency for Development in Special Needs Education
Principi Guida per promuovere la qualità nella Scuola Inclusiva – Raccomandazioni Politiche (2009), Odense, Danimarca: European Agency for Development in Special Needs Education

PLAYING EDUCATION: MOTOR ACTIVITY AND PSYCHOMOTOR DEFICIT

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Abstract

Many studies have shown that playing education and motor activity are not only a means of psycho-physical therapy, but also an important means of social integration. The aim of our research project on motor activity based education, which has involved the participation of a primary school reception class of sixteen pupils, has been to integrate a pupil with psycho-motor disabilities into the class. The program was carried with the entire class, and the collaboration of the class teachers, in the school gym and available open spaces for two hours each week. In a quantitative way to plot the level of the gross motor skills which were carried out in the lessons we used the Ulrich TGM test. (Test of Gross Motor Development). The aim of the research for a greater integration was, instead, monitored using the Nominal Group Technique (NGT) method of evaluation. The NGT decision making method was used in the class at the end of the program to gather pupils' opinions, positive or negative, on the statements proposed by the experimenter in reference to their perceptions of the intrapersonal and interpersonal dynamics which emerged from the group activities carried out. The exercises in the program involved suitable equipment (skipping ropes, balls, hula hoops) which greatly aided the integration of the pupil with disabilities into the class activity. The results of the research project clearly show a successful outcome, which highlights the effectiveness of couple or group work in co-operative games programs as an means of facilitating greater interaction, integration and support systems amongst students.

Keywords: *Play, Integration, Participation, Psyc-motor disabilities*

1. Introduction

Many studies have found that play and motor activity represent not only a means of physiological and psychological rehabilitation but also an important tool for social integration (Wehman e Schleien, 1981; Donati, 2004;L. De Anna, 2005).“Playing Education” is a project which aims to use motor activities as an effective method to promote the integration of a child with psycho-motor disabilities with fellow classmates through play. Play directed towards inclusivity allows all involved parties to participate in the sporting activity and take pleasure in the basic skill level acquired without being excluded for being diversely able (A. Carraro,2004). Play education though motor activity means becoming more conscious of the value of our bodies as a means of expressing our personality and communication. Play education also promotes the development of important like skills such as respecting rules, problem solving, taking initiative and learning to accept defeat and turn it into stimulus to improve.

2. Design

The research project was carried out in a school in the suburbs which had little focus on motor activities, due in part to the absence of a physical-education teacher. The school's profile increased interest in setting-up a project based on motor activity as

a means of social integration, with the collaboration of the school, to promote the wellbeing and pleasure of movement.

The project was carried out on the reception class of a primary school with a pupil with psycho-motor disabilities who displayed very little language communication and intolerance towards the proposed teaching methods. During the research period the activities were proposed gradually both in terms of intensity and level of difficulty. The program was carried out in collaboration with the class teachers and took place both in the school's gym and outside in open spaces for two hours per week during the trimester October-December 2013.

3. Objectives

The objective of the research was to verify if a program of motor activity carried out on a primary school class could facilitate the process of integration of a pupil with motor psycho-motor disabilities.

4. Method

The sample group which participated in the activities was made up of 16 children which were divided into three groups (two of 5 students and one group of 6 students) over the course of the program. The methodology proposed included:

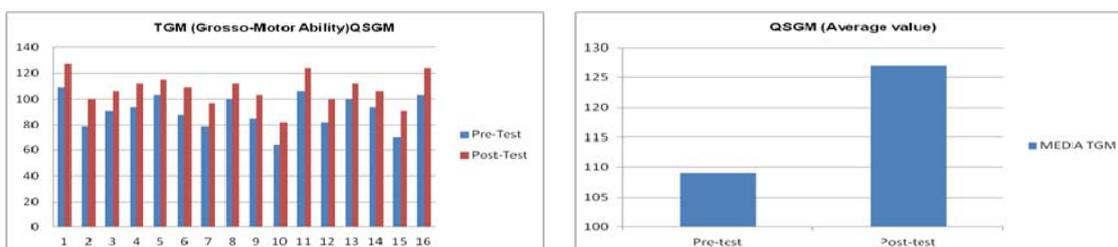
1. Quantitative assessments of the *gross-motor ability* of the students at the beginning of the program was carried out using the TGMD Test Ulrich (1985). The development of gross-motor abilities predominately concerns functions connected with the moving of the body from one place to another and the grasp and movement of objects. The test measures the 12 gross-motor abilities. At the end of the Pre-test (TGMD) the motor activity program was put into place to later evaluate the results with a Post-test (TGMD). The operative protocol for the proposed activities included:

exercises with light-weight equipment (skipping-ropes, balls, hula-hoops) to improve movement; group games, both inside the school gym and outside, represented the instrument which facilitated the participation of the disabled pupil and promoted greater socialization and relationship forming between students; running; exercises to improve awareness and knowledge of body movements.

2. Assessment of the students' perception of disability and integration through a further instruments called *Nominal Group Technique (NGT)*. The NGT was used on the class in circle time at the end of the program through the presentation of 5 statements on the perception of intra and interpersonal dynamics emerging from the class activities carried out. Individual students could then express their degree of agreement or disagreement with each statement on a scale of 1 to 3. At the end of the process a group discussion was carried out on those items with did not receive a shared class opinion.

5. Results

TGMD graphics clearly show an improvement of the gross motor skills in the students at the end of the intervention protocol.



Then it is possible to read the results of NGT regarding integration; on the left there are the percentages before the debate, on the right those after the debate; in the middle there is the statement to be answered, exactly: NO (for those who did not agree) , I DO NOT KNOW (for undecided), YES (for those who were in agreement).



6. Discussion/Conclusion

It is clear, in fact, that in the first administering there has been a higher percentage of positive answers for all five statements, but in the second administering the percentage increases after that pupils have discussed and reflected on every single statement. These results, regardless of the positive results of the TGMD, can strengthen the argument that motor activity is a highly effective educational and re-educational tool. The result was a positive response towards the items proposed with largely shared opinions and emotions among students. Each expressed their own ideas and feelings, and perhaps saw previously unconsidered potential in those classmates thought to be less able than themselves, especially so in the case of their classmate with psycho-motor disabilities. In particular the student with disabilities reached a higher level of coordination, a greater control of body movements, of gestures and actions whilst other students registered a greater accuracy in motor-abilities.

References

- Canevaro, A., Mandato, M., (2004). *L'integrazione e la prospettiva inclusiva*. Roma: Monolite.
- De Anna L. (2009). *Processi formativi e percorsi di integrazione nelle scienze motorie. Ricerca, teorie e prassi*. Milano: Franco Angeli
- Bandura, A., (2000). *Autoefficacia. Teoria e applicazioni*, Trento: Edizioni Erickson.
- Gomez Paloma, F., Sgambelluri R., (2012). *La disabilità tra didattica e sport*. Napoli: Ed.Simone.

SELF-EVALUATION OF ELEARNING EFFICIENCY BY USE OF DATA MINING METHODS

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Abstract

Expansion of online teaching and demand for offers in informal learning over the Internet enhance the competition among the suppliers of learning contents, developers of system solutions and providers of learning platforms. In this context the efficient shaping of learning offers becomes crucial in attracting more users. Nowadays it is a standard to have an eLearning platform at the college or at the university. Almost all such platforms offer a wide range of activities both for the individual learning and for the team working, e.g. Assessment, Quiz, Forum, Chat etc. But is it really used as a high intelligence learning environment or does it remain only a storage for pdf files with contents of the lectures, that are accessible to the students over the internet? A new tool which has been developed within our research project, offers a possibility to analyze the behavior of students within the eLearning platform and to visualize the results of the analysis. Our methods include the data mining algorithms. The poster presents the outcome of the case study which analyzed the behavior of the students during two semesters and allowed to identify the merits and shortcomings of didactic methods employed by the teaching staff. By using this approach, the lecturers and the developers of the learn modules can evaluate their own learn offer and thereby improve the didactic quality and the learning success of students.

Keywords: *eLearning, evaluation, visualization, didactics.*

1. Introduction

Nowadays, learning at high schools, colleges and universities is hardly imaginable without daily usage of electronic teaching offers. In this context, the evaluation of efficiency of different forms of online learning acquires high significance. Commonly, collection and processing of data for such evaluations is expensive and time-consuming. To tackle with this sort of problems, three Berlin Universities of Applied Sciences have initiated a joint project "Monitoring of learning processes on personalizing and non-personalizing eLearning environments", guided by Albrecht Fortenbacher, Agathe Merceron and Margarita Elkina [1][2]. The ultimate goal of the project was to develop a tool which would enable the teaching staff and the operators of learning platforms to perform the analysis of the behavior of students on a platform, and to visualize the outcome of that analysis. Here we employ this tool in order to evaluate the module "Programming and Software Development".

2. Results of evaluation

From the point of view of the teaching staff, the ability to analyze the behavior of students within an online teaching platform in order to draw conclusions how to adapt/improve the teaching process, is of urgent importance. Nearly all learning platforms offer for this purpose several statistical techniques which, for example, estimate the number of mouse clicks per time unit or record the last access to the

learning materials etc. However, this kind of information is often too general: it does not tell the lecturers, how the students learn, in which order they use the learning materials, and whether this order is logically comprehensible and should be therefore recommended to the students or, is, on the opposite, chaotic and unpredictable.

2.1 Navigation analysis

In Fig.1 we show the aggregated path through all learning objects of the course during two months. The size of the nodes corresponds to the number of accesses to them; the arrows display the order in which the objects of learning are visited online.

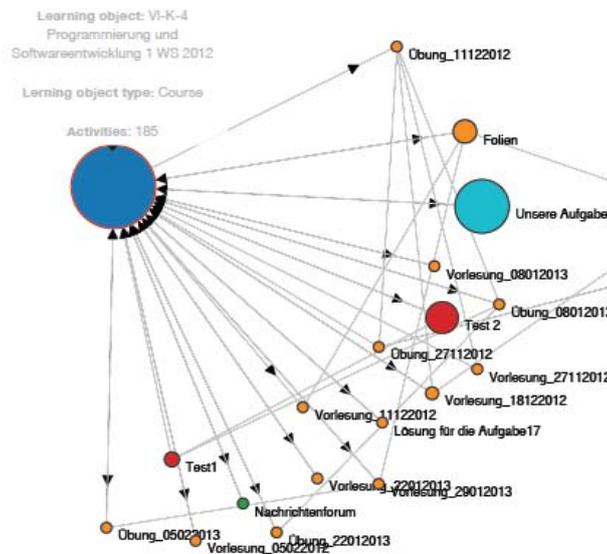


Figure 1. Navigation analysis

The immediately identifiable big blue node on the left corresponds to the starting page of the course, and appears to play the coordinating role: almost every transition from one object of learning to another one goes via the starting page. On identifying this graph pattern, the lecturer should consider whether the results of visualization indicate the desirable behavior of the students, or the explanation is that the materials do not possess a sufficiently comprehensible logical structure and do not contain direct references like lecture ->exercise, exercise ->solution, lecture ->test etc. Remarkably, the solutions for the exercise tasks are relatively seldom accessed (small nodes) and, moreover, they are visited in random order. Could this result indicate that the exercise home tasks are not proven by the teacher?

2.2. Frequent Path

The abovementioned results concern the entirety of evaluated learning paths of all participants of the course. In order to determine the frequency of certain selected learning paths, the tool offers another kind of analysis, which, by means of the Sequential Pattern Mining Algorithm, describes the recurrent patterns of navigation and indicates a group of user with the same or similar behavior (Figure 2).

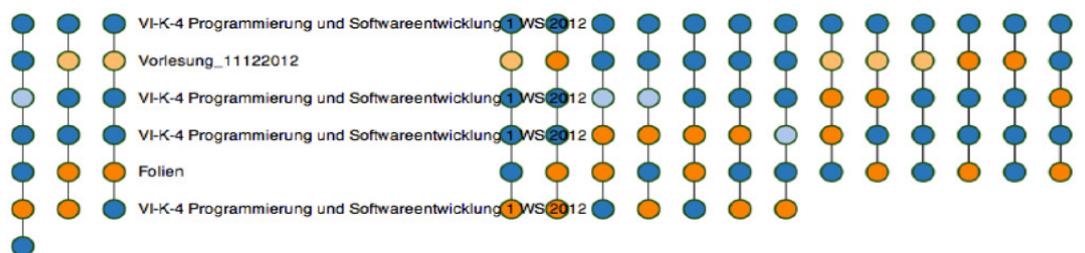


Figure 2. Frequent Path with support = 0. 6

A characteristic attribute for this kind of analysis is the value of the parameter “support” which measures the proportion of participants for whom the corresponding navigation patterns could be identified. The results are highly sensitive to the way how one chooses the parameter “support”. For example, at support values 0.7 or 0.5 (this means, respectively, 7 from 10 or 5 from 10 participants) mostly only the learning objects “Slide for the Lecture” and “Lecture” are requested (cf. Fig. 2). At support values of 0.1 or 0.2 (resp. 1 or 2 from 10 users) we resolve also the learning objects like “Exercises”, “Solutions” or “Wiki” on the frequent paths. However, the didactically correct sequence Lecture->Exercise->Solution->Test is only seldom recovered. This confirms the conjecture that the direct links both in the lectures to the exercises, and in the exercises to the solutions are missing. For a lecturer this means that the teaching materials should be reconsidered and improved.

The same result comes from the analysis of the frequent path Exercise->Lecture->Exercise->Lecture->Exercise->Lecture->...: here, apparently, the student repeatedly seeks some particular content. This indicates that the teaching materials do not have the proper structure or lack comprehensive descriptions.

3. Conclusions

The presented short description of possible behavioral patterns of the students displays manifold types of learning types and learning techniques. We were unable to identify the model scenario which would embrace at least half of the students. Rather, on the opposite, we ascertained that the behavior of students is random and chaotic, which, of course, might put obstacles into the learning process of certain students and obstruct successful learning. The necessity to improve the structuring of the materials which accompany the learning offer has been clearly recognized; this should be accomplished before the start of the next semester.

There is a set of other techniques as well, which can help a lecturer to analyze independently and in due time the progress of his/her e-learning course. It is important, that the lecturers see only the information which pertains to their own courses: thereby the results of evaluation serve exclusively to the increase of the quality of teaching, and have no consequences for the administrative assessment of the teaching activity of the faculty [3].

References

- [1] <http://www.lemo-projekt.de>
- [2] Beuster, L.; Elkina, M.; Fortenbacher, A.; Kappe, L.; Merceron, A.; Pursian, A.; Schwarzrock, S.; Wenzlaff, B.: LeMo- Lernprozessmonitoring auf personalisierenden und nicht personalisierenden Lernplattformen. *In proceedings of GML 2012*, 63-76.
- [3] Sanders, J. R. (1994). *The program evaluation standards. How to assess evaluations of educational program*. 2nd edition. Thousand Oaks, USA: Sage Publications.

HELP, MY FLASH VIDEO CONTINUES TO BUFFER! DIFFERENTIATING INSTRUCTIONAL CONTENT IN THE DIGITAL AGE

Stuart Bishop

Quantum Business Consulting Inc., Chief Technology Officer

Abstract

The use of video media within the education industry is fast evolving from simple Talking Head Lectures or How to Videos and is now used as an extension of the traditional classroom with the same need to address differentiated instruction.

Videos, especially those that are lecture captures, allow for the classroom to be brought into the entire world, especially where web-based learning is occurring. The digital age learner expects to be able to learn from content that is delivered to their computer or mobile device without delays in streaming. To address the need for differentiating instructional content in the digital age, the use of closed captioning and picture-in-picture for sign language needs to be integrated into the video media used in education. Miracle Media™ creates an inclusive educational experience that addresses the needs of students.

Miracle Media has empowered educators with an easy to use, state of the art, solution that embodies not only the management and distribution of video based education across the globe, but couples this with all the tools required to also teach students with disabilities. Providing automated video encoding and delivery across a variety of devices that meets the needs of students is the mandate for educators today. Bringing differentiating instruction to the online curriculum with a video platform that delivers high quality media to tablets, mobile, and broadband devices, is the best combination available to the digital age student. Our beginning work in the field of higher education is presenting unique opportunities to support the work of educators in the global society we work in today.

Keywords: *Video, differentiated, lecture capture, mobile devices, closed captioning, automated video encoding*

1. Introduction

Greenberg & Zanetis (2012) talks to the adoption of video technologies in the classroom requiring a clear vision, alternative methodologies, and a strong technical foundation. Qualifying the statements with the view of meeting today's and tomorrow's learners, video will enable the absorption and interpretation of information on how children and youth prefer to learn. Salazar (2010) discusses how combining technology with pedagogically sound curriculum is a powerful and engaging model for graduate student education.

The use of Video Lecture Capture Technology (VLCT) for asynchronous online courses delivering educational content via streamed video, either on-demand or at a pre-defined schedule supports student retention by engaging students through interactive class content. Augmenting VLCT with a Learning Management Systems (LMS), such as Moodle®, Sakai®, Blackboard®, Angel®, or WebCT®, coupled with a Digital Asset Management System (DAM), such as Miracle Media™, educators can manage digital assets including course materials, multi-media files, discussions, and other educational tools as a hub for a rich instructor managed engaging curriculum for use both synchronously and asynchronously delivery in a customizable and flexible manner.

2. Solving the Digital Classroom Complexities

2.1. Managing Educational Curriculum

In the creation of 21st century citizens whom collaborate with others globally, Greenberg & Zanetis (2012) shares that a common element is the “practice of students creating multimedia content and delivering presentations to stakeholders and audiences throughout their education”. The rapid availability of video tools is changing the educational landscape and the role of the educator far beyond the bricks and mortar classroom and into a worldwide universal multimodal classroom. The resultant complexity of managing media beyond the classroom walls has been a barrier to many faculties embracing this fast emerging educational paradigm. With the use of Quantum Business Consulting, Inc.’s (QBC) Miracle Media™ web based DAM to augment their existing LMS, educators and students alike have a multi-media toolset simplifying the management and delivery of digital video and multi-media files. This toolset augments the existing classroom curriculum with automatic adaptation of multi-media files for delivery across tablets and mobile devices such as, iPad, Android Tablets, and Smart Phones furthering students expectations of embracing new and emerging technical trends.

2.2. Information Technology Burden, when Educating Beyond the Classroom

As educators adopt higher volumes of multi-media within their curriculum, and on-line educational institutes offer a higher propensity of multi-media curriculum, schools internal Information Technology Departments are being asked to provide flexible solutions supporting intuitive and simple LMS integration within existing budgets. O’Hanlon (2012) discusses the worries of digital upgrades while schools funding continues to fall, often resulting in previously procured text book funds being used for technology improvements. This has resulted in many educators outsourcing their digital archives to shared infrastructure in Cloud Server farms enabling them to provide state of the art LMS/CMS without the associated infrastructure costs of high volumes of file storage and media streaming infrastructure. QBC’s Miracle Media™ platform adopts Mircea & Andreescu (2011) views offering a cloud service based globally extensible DAM and Content Delivery Network (CDN) for educators to deliver their multi-media learning materials at lower costs and complexity of in-house information technology solutions.

2.3. Multi-Media Educating for Students with Disabilities

The section 508 Amendment to the Rehabilitation Act of 1973 is a federal requirement making electronic and information technology accessible to people with disabilities. While this concept varies from country to country, the Web Content Accessibility Guidelines of the W3C also work to globally regulate such requirements. When adopting video and multi-media file based classrooms, educators cannot alienate students with disabilities. When moving to a digital classroom, costs associated with captioning, and/or sign language, further increases the cost of the digital media itself, therefore creating another fiscal obstacle to delivering digital content to students with additional learning requirements. QBC’s extensive research and experience working with the deaf community in the USA has enabled a comprehensive understanding of the technologies supporting people with disabilities. QBC has also extended their DAM to support multi-lingual captioning, secondary video injection for sign language, and the selectable audio soundtracks supporting a global multi-lingual digital experience. QBC differentiates itself from other DAM providers by enabling educators to manage and build these additional multi-media files in-house within Miracle Media™.

3. Conclusion

While budgets continue to tighten, and the requirements of faculty and students to capture and deliver digital materials is a conundrum that educational facilities are fighting daily, the ability to support the adoption of video technology is a vital step towards the advancements of an evolving technological ecosystem. With the use of QBC's Miracle Media™ DAM and CDN provides an inclusive service to educators at a significantly lower cost than that of an in-house option. With Miracle Media™, educators and students continue to use their existing LMS with augmented video/multi-media file management capable of delivering online curriculum to a global student base including those with disabilities. Students' use of technology is pandemic across all aspects of their lives. Students today expect an interactive learning environment to enhance their skills. By taking the classroom to a virtual world, built for the future, educators are embracing technology and harnessing its power to engage and stimulate the students of the future which increases faculty and student satisfaction rates globally.

References

- Greenberg, A., & Zanetis, J. (2012). The impact of broadcast and streaming video in education: What the research says and how educators and decision makers can begin to prepare for the future. Retrieved from www.cisco.com/web/strategy/docs/education/ciscovideowp.pdf
- Mircea, M., & Andreescu, A. (2011). Using cloud computing in higher education: A strategy to improve agility in the current financial crisis. (IBIMA Publishing, 2011, Retrieved from <http://www.ibimapublishing.com/journals/CIBIMA/2011/875547/875547.pdf>
- O'Hanlon, L. (2012). Common core tech. demands raise budget worries. *Education Week*, 6(1), 26-28. Retrieved from <http://www.edweek.org/dd/articles/2012/10/17/01budget.h06.html>
- Salazar, J. (2010). Staying connected: online education engagement and retention using educational technology tools. *Clinical laboratory science: Journal of the American Society for Medical Technology*, 23(3), 53-58.
- U.S. Department of Education, National Center for Education Statistics. (2012). Digest of Education Statistics, 2011 (NCES 2012-001), Chapter 3.

USE OF BOTANICAL SPECIES ON THE CAMPUS AS A TEACHING TOOL

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Abstract

Introduction. Educational process is changing nowadays. Due to these changes, it is essential to examine them in order to check the current innovations.

Objectives. Our purpose is describes student and teacher satisfaction with this activity and to analyze benefits obtained by collaboration of participants from different areas of knowledge.

Methods. A nature trail is performing on campus. Students and teachers are the participants in this project. The satisfaction level of each participant is evaluated using questionnaires and field notebooks in the middle and at the end of this methodology.

Results. There are no definitive results yet. But preliminary results suggest a high level of satisfaction and motivation in more than 95% of participants.

Conclusions. The involvement of students in teaching seems to increase their level of motivation.

Keywords: *Education, Investigation in teaching, Technology in learning*

1. Introduction

Currently education is being influenced by incessant changes. Some of them are based on the use of methodologies that encourage active student participation.

Nevertheless it is necessary to examine whether these innovations are getting goals for an appropriate and useful improvement in education. Thus, teaching research would be essential for the adequate evolution of educational process.

2. Purpose

1.To describe student and teacher satisfaction being both involved in the same activity.

2.To analyze benefits obtained by participation of students and teachers from different areas of expertise in performing the same project.

3.To rate student motivation with activities outside classroom.

3. Methods

Performance of a nature trail on campus participating students in the degree of Medicine, Computing, Biotechnology and Pharmacy. It identifies the following stages in our schedule:

1.To collect botanical, pharmacological and toxicological information about species located on the campus.

2.To design a specialized website where the information collected can be found.

3.To place placards with the name of the scientific species next to the studied species.

4.To evaluate the satisfaction level of each participant according to the tasks carried out using questionnaires and field notebooks.



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Buscar... BUSCAR

Senda Botánica
Un paseo por las plantas del campus

Está aquí [home](#) » [Plantas](#) » Magnolia

- Home
- Quiénes somos
- Plantas
- Acceso usuarios

Magnolia

Magnolia grandiflora L. ; Magnoliaceae

Magnoliaceae

Botánica | **Farmacognosia** | Localización

Introducción

Etimología: El género *Magnolia* fue puesto por Linneo en honor de Pierre Magnol, profesor de botánica en Montpellier en el siglo XVII-XVIII. *Grandiflora* alude a sus flores de gran tamaño.

Sinónimos

Magnolia foetida (L.) Serg.
Magnolia virginiana var. *foetida* L.

Nombres vernáculos

Español: Magnolio, Magnolia.
Inglés: Southern magnolia.



Posición sistemática

Reino Plantae, División Magnoliophyta, Clase Magnoliopsida, Orden: Magnoliales, Familia: Magnoliaceae, Especie: *Magnolia grandiflora*.

Cuestionario final para alumnos - Microsoft Word

Questionnaire

Cuestionario de inicio "SENDA BOTÁNICA"
Alumnos

1 - ¿Consideras que en el proceso de enseñanza existe una fluida relación bidireccional entre estudiante y profesor?

Sí, y es muy elevada
 Sí, la suficiente
 La relación es poca
 No hay ninguna relación
 Considero que no es necesario

2 - ¿Has colaborado con alguno de tus docentes en proyectos de investigación?

Cada año, en varias ocasiones
 Una vez cada curso
 En una ocasión
 Nunca
 Desconozco que fuese posible hacerlo

3 - ¿Has publicado algún artículo de investigación junto con alguno de tus profesores?

Cada año, en varias ocasiones
 Una vez cada curso
 En una ocasión
 Nunca
 Desconozco que fuese posible hacerlo

4 - ¿Te han pedido opinión en el diseño de alguna herramienta de evaluación académica en alguna de tus asignaturas?

Siempre
 Casi siempre

Algunas veces
 En una ocasión
 Nunca

5 - ¿Has participado en algún proyecto de investigación en colaboración con otras titulaciones universitarias distintas a la tuya?

Varias veces, cada año
 Una vez por curso
 En una ocasión
 Nunca
 Desconozco que fuese posible hacerlo

6 - ¿Has publicado algún artículo de investigación donde intervinieran profesionales y estudiantes de varias titulaciones universitarias?

Cada año, en varias ocasiones
 Una vez cada curso
 En una ocasión
 Nunca
 Desconozco que fuese posible hacerlo

7 - ¿Crees que los recursos existentes en el campus están suficientemente integrados en la actividad docente?

Muy buena la de todos ellos
 Es buena la utilización de algunos recursos y mala de otros
 Bastante
 Poco
 En absoluto

8 - ¿Verías posible realizar alguna actividad académica fuera del aula?

Creo que sería conveniente en la mayoría de asignaturas
 En algunas materias podría hacerse

4. Results

Nowadays, our team is working on the design of the website. Although there are no definitive results yet, first data suggest a high level of satisfaction and motivation in more than 95% of participants.

5. Conclusions

The active involvement of students in teaching methodologies seems to increase their level of motivation and the quality of learning.

References

- Diego-Rasilla, F. (2007). La investigación-acción como medio para innovar en las ciencias experimentales. *Pulso*, 30, 103-118.
- Fierro, C.; Fortoul, B.; Rosas, L.;. (2003). Transformando la práctica docente. Una propuesta basada en la investigación-acción. Barcelona: Paidós.
- Latorre, A. (2003). La investigación acción. Cambiar y mejorar la práctica educativa. Barcelona: Graó. .
- Tejedor, J. (2004). Investigación educativa: ¿Hacia dónde vamos? En D.-P. (. L. Buendía, Temas fundamentales de investigación educativa. (págs. 63-107.). Madrid: La Muralla.

A TECHNOLOGY LEARNING PREFERENCES INSTRUMENT TO DESIGN AND DEVELOP TEACHER EDUCATORS' PROFESSIONAL DEVELOPMENT PROGRAMS IN THE WORKPLACE

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Abstract

The knowledge-based economy, advances in information and communication technologies as well as new pedagogical perspectives all influence the needs to improve the population skills and competencies in the 21st century. Emerging technologies bring opportunities to reconsider teaching and learning in higher education. Innovative educational ideas and concepts transform the roles of teacher educators and their students. To accomplish the new roles, teacher educators need to learn to work with a new set of information and communications skills and knowledge. In other words, adequate technology training is a prerequisite for the 21st century teacher educator to develop prospective teachers who are able to use new technologies so as to support and improve their own students' achievement gains. In order to deal with the new challenges, teacher education institutions are designing, developing and facilitating teacher educators' technology professional development programs. However, the majority of these efforts fail, since they are for most part based on a formal, institutional delivery of instrumental knowledge and skills. Adequate technology training is a major factor that can help teacher educators to integrate emerging technologies into the curriculum, which is in turn, beneficial to their students. The technology learning preferences instrument designed, implemented and evaluated in this research is intended to make a link between teacher educators' technology learning needs in the workplace and the way in which professional development programs should be designed, developed and evaluated.

Keywords: *Technology professional development, teacher educators, workplace learning preferences*

1. Introduction

In today's world, one of accelerating change, in which many skills become obsolete nearly as fast as they are learned, schooling and learning in general are under siege (Collins & Halverson, 2009). New forms of both formal and informal learning forces a rethinking of education and how it should be designed in an age of new technologies (Kwakman, 2003; Collins & Halverson, 2009). As a result there is a growing need for teacher educators to be ready for lifelong learning in order to provide their students, the teachers of the 21st century, with knowledge and skills that will enable them to become active learners. This means that teaching staff need to acquire new theoretical insights as well as skills with regard to how learning is conceived (Brandsford, Brown & Cocking, 1999; Putnam & Borko, 2000), since a "successful 21st century school system depends on a highly skilled and motivated workforce that consistently performs to the highest standards and engages in effective PD (professional development)" (Training and Development Agency, 2009, p.8).

How are teacher educators prepared for this new role? Technology professional development programs in universities, colleges and schools focus primarily on formal learning such as delivering workshops and organising study days (Cuban, 2001; King, 2002). As a result, teacher educators' technology professional development is

sometimes disconnected from the professional context or genuine need. In other words, traditional technology professional development activities fall short of supporting teacher educators in acquiring new Information and Communication Technologies (ICTs) knowledge and skills. Technology professional development should be intensive, on-going and connected to ownership based on authentic reasons and learning contexts.

2. Aim of the study and research question

The study presented in this paper is part of research being carried out for a doctoral award at University Roehampton, London. The subject area of the research is, as the title suggests, technology professional development. The approach to technology professional development which it promotes is determined and underpinned by a commitment to integrating teacher educators' learning preferences and workplace learning in terms of learning to cope with emerging technologies as well as integrating new technologies in educational contexts.

The general aim of this research is to design and develop a technology learning preferences instrument that will make a link between teacher educators' technology learning needs in the workplace and the way in which professional development programs should be designed, developed and evaluated. The central research question is:

How can a continuing learning preference instrument be designed in the service of teacher educators' technology professionalization based on formal versus informal and individual versus collective learning preferences?

3. The proposed methods

The study employs a design-based research approach which is cyclical in character: analysis, design, evaluation and revision of activities are iterated "until a satisfying balance between ideals ('the intended') and realisation has been achieved" (Plomp & Nieveen, 2010, p.21). Design-based research has usually a number of stages or phases: a preliminary phase, a prototyping phase and an assessment phase (Plomp & Nieveen, 2010; Van den Akker et al., 2006). During the preliminary stage, needs and contexts analysis with regard to teacher educators' technology professional development as well as the development of a conceptual framework will be conducted. During the prototyping phase, based on iterations, each micro-cycle of research will undergo a formative evaluation in order to refine or improve future interventions. During the assessment phase a summative evaluation of the design will be used to whether the solution or intervention meets the specific requirements (Van den Akker et al., 2006).

To answer the research question, a mixed methods approach is used. To be more specific, a convergence model will be utilised in which quantitative data and qualitative data are analysed separately and then converged for interpretation of findings (Creswell & Plano Clark, 2011). Data is collected within a constructivist stance in order to gain practical knowledge about teacher educators' technology professional learning at the workplace.

4. Preliminary results

Based on the results from an online questionnaire (Table 1), teacher educators indicate that they prefer to take the initiative as well as the responsibility for their own technology learning processes. In fact, teacher educators report that they prefer to select, assess and manage their own technology learning activities and prefer to pursue this learning preference at any time, and in any place. Usually learning is considered as something that occurs in educational institutions under the supervision

of an expert such as a teacher or trainer and based on a pre-set body of knowledge. However, this traditional approach of learning is in most cases directive in nature and consists mostly of formal learning activities.

Table 1. Teacher educators' formal technology learning preferences (N=98)

Formal technology learning preferences	Cross-institutional survey: Six different teams
<i>Example items</i>	<i>%</i>
I prefer to study a pre-established body of ICTs knowledge and skills (n=98)	20.59
I prefer to have a well-defined time-span regarding my ICT learning process (n= 98)	30.30
<i>1 = disagree, 2 = slightly disagree, 3 = have no opinion, 4 = slightly agree, 5 = agree</i>	

4. Discussion

A closer look at teacher educators' learning preferences regarding formal versus informal learning provides a more nuanced understanding of these two learning paradigms in teacher educators' technology learning. The results based on the online questionnaire show that teacher educators are not quite willing to be directed in their learning but at particular moments they prefer to get formal feedback or guidance in order to improve their knowledge and skills.

References

- Bransford, J., Brown A., & Cocking, R. (1999) *How people learn: brain, mind, experience, and school*. Washington: National Academy Press.
- Collins, A., & Halverson, R. (2009). *Rethinking education in the age of technology: The digital revolution and schooling in America*. New York: Teachers College Press.
- Creswell, J., & Plano Clark, V. (2011). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.
- Cuban, L. (2001). *Oversold and underused: Computers in classroom*. Cambridge: Harvard University Press.
- King, P. (2002). Educational technology professional development as transformative learning opportunities. *Computers and Education*, 39, 283-297.
- Kwakman, K. (2003). Factors affecting teachers' participation in professional learning activities, *Teaching and Teacher Education*, 149-170.
- Plomp, T., Nieveen, N. (2010). An introduction to educational design research. *Proceedings of the seminar conducted at the East China Normal University, Shanghai*, November 23-26, 2007, Enschede: SLO.
- Putnam, T., & Borko, H., (2000). What do new views of knowledge and thinking have to say about research on teacher learning? *Educational Researcher*, 9(1), 4-15.
- Training and Development Agency for Schools (2009). *Strategy for the professional development of the children's workforce in schools 2009-2011*, Manchester: TDA.
- Van den Akker, J., Gravemeijer, K., McKenney, S., & Nieveen, N. (2006). *Educational Design Research*. London: Routledge.

THE QUALITY OF EDUCATIONAL RELATIONSHIP AT SCHOOL A FIELD RESEARCH

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Abstract

The educational relationship is the starting point in the learning process. It is based on a dynamic relationship which makes the learner's personality growth possible. Since '90s the importance of the emotional aspect in the learning process has been arising, as the studies by Bion and Klein show. The teacher's new role is to act as a mediator, a "filter" between the learners and the subject contents.

In order to make teaching an effective and meaningful process, it has to acquire flexibility and to be learner-oriented. The teacher's task is "teaching to learn", he gives learners methodological instruments useful to develop their competence.

This work, composed by four chapters, is intended to study the educational relationship in the Italian school. The first chapter deals with the importance of establishing an emotional relationship between the teacher and the learners. The second chapter analyses the educational relationship at school among the teacher, the learner and the class-group. The third chapter offers a short excursus about the teacher historical profile to get to the teacher who can thrill learners and who teaches to study. The last chapter shows the results of a field research, carried out by means of the handing out a questionnaire made up of 16 questions addressed to 30 teachers of the 1st Circolo Didattico in Villaricca, Naples, Italy. The data collected have satisfied the starting assumption.

Keywords: *Educational relationship, affective sphere, learning, quality, field research.*

1. Introduction

We definitely believe that, as Galanti claims, thinking of "relationship" as the very core of the teaching process and, on the whole, of the educational one, enables to consider those involved in it as global subjects, since it regards these processes as capable of improving and transforming, at the same time, both educators and learners (Galanti, 2001).

Education, indeed, was, for years, a mere transfer of information from teachers to learners; lessons were almost always professorial, that is, simple notions given to the class and never questioned or debated by learners (Alberico, 2010).

In such a context, the individual, emotional dimension was totally ignored nor was the idea of a personalized teaching taken into consideration either, differently from these last years when it has, increasingly, become a necessary and fundamental didactic route in all educational processes (Alberico, 2010).

According to C. R. Rogers, the educational relationship needs three key – attitudes: authenticity or congruence, unconditioned positive consideration, empathy. "When people are listened to with empathy it is possible to more accurately perceive the flowing of their inner experiences. Yet as a person increasingly becomes more aware of himself/herself, the "self" becomes more congruent through experience. So the person becomes in this way more authentic, more genuine" (Capurso, 1969 p.64).

2. Design

Our team of researchers has started from the experience achieved over these teaching years which made us understand how fundamental it is, for our learners, to have concrete reference points enabling them to build firm foundations which all their life will be erected upon. Aware of the main role of school and family in education and of how fundamental the building of a clear, stable, educational relationship is for their psycho-physical growth, we thought of a research plan whose features are:

- the territorial reality of Villaricca near Naples
- analysis of the situation about the state of educational relationship in primary school
- data gathering through a questionnaire and their quality evaluation by means of a debriefing.

3. Objectives

Our team of researchers has reflected and then enquired into the types of educational relationship arising in the classroom, in primary school, between teacher and learner, teacher and the whole class, teachers in the various classes.

4. Method

The school we work in is located in a structurally heterogeneous territory with a diversified human (social) context. As far as we have been able to observe over these years, childrens' life style has undergone some changes which are making the teacher's approach in educational relationship more and more complex. In this way a team of 30 teachers was selected, belonging to six chosen classes (3 fourth classes and 3 fifth classes) since the students' age (9-11) allows a more mature interaction or relationship with teachers. To analyze the various types of relationship, an anonymous questionnaire has been used, made up of 16 questions, 12 of which with multiple choice answer and 4 with a simple one, including these topics:

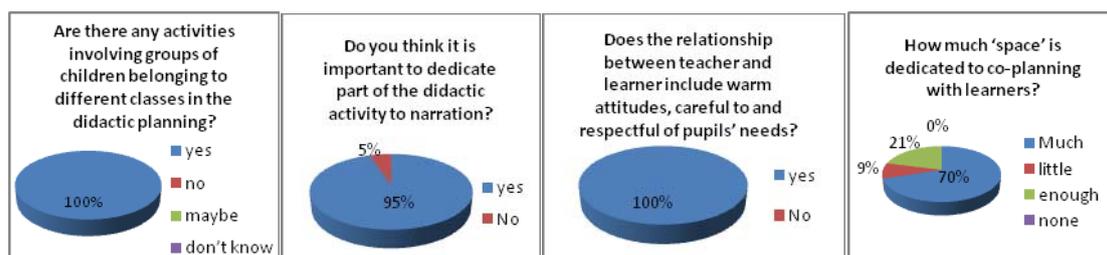
- didactic activity planning
- class atmosphere and its influence on pupils' learning
- active participation in the educational relationship

Specific questions have been given (asked) such as:

1. how does your didactic activity start? (multiple choice answer)
2. does the relationship between teacher and learner include warm attitudes, careful to and respectful of pupils' needs? (single answer)

5. Results

Data was gathered through a listing on Excel which has led to the elaboration of a graph for each question. The same graphs have been expounded and commented on by all teachers of the chosen group by means of a debriefing carried out by our team of researchers (Marcato, 1995).



6. Discussion

From the data reading through graphs, it follows that:

1. the 100% (hundred per cent) of the chosen team of teachers, as far as the didactic organization is concerned, plans activities which involve groups of learners belonging to different classes;

2. the 95% (ninety-five per cent) of the team considers it important to dedicate part of didactic activity to narration;

3. the 100% (hundred per cent) of the team confirms that relationship between teacher and learner includes warm, respectful attitudes, careful to the learners' needs;

4. the 70% (seventy per cent) of the team considers the value of co-planning as an effective instrument.

In relation to point 1 it has unanimously been confirmed that among the various activities, labs, class and outdoor projects as well as sports activities are to be included.

In relation to point 2 it emerges, from the answers given, that narration is one of the fundamental ways by means of which the learner can express his own emotions and 'communicate' with others.

In relation to point 3, a significant answer was given by a teacher to the question "to what extent"?

If I understand what the learner 'feels' I have a reliable ground to propose other ways; if I am able to involve him through strategies as "circle time" or "brainstorming", I build the cognitive background of the class and consequently I plan the cognitive and cultural relationship.

In relation to point 4, after drawing up a report on the experience, we came to the conclusion that co-planning is the effective instrument to make participation concrete allowing both adults and children to achieve together some results.

7. Conclusion

From our research work, as a result, it has emerged that "attention" represents the necessary basis of every relationship, yet it is through listening that it expresses itself as a process of participation through which 'the other' is understood in his deep thoughts, feelings and needs. To learn to listen to, therefore, means to be able to arrange an inner space, as an aware choice, for an inclination to be involved, to meet each other, to have relations and cooperate for the same educational values. Perhaps this is the cultural and social challenge for the coming years: save time while spending it in listening to one another and mutually agreeing.

To arrange a space, a time, an occasion, an inner inclination to more deeply get in touch with the other: this would be the altruistic attitude to carry out in our community of teachers, to be carried on in the family, hoping in the growth of a wider, more careful and helpful community.

References

- Alberico, L., 2010, *La relazione educativa*, aprile 22, 2010, da URL www.mentesociale.it/psicologia/speciale-scuola
- Capurso, M., 2004, *Relazioni educative e apprendimento: modelli e strumenti per una didattica significativa*, Gardolo (Trento): Erickson
- Galanti, M. A., 2001, *Affetti ed empatia nella relazione educativa*, Napoli: Liguori
- Marcato, P., 1995, *Gioco e dopogioco*, Molfetta: La Meridiana
- Goleman, D., 2007, *Intelligenza sociale*, Milano: Rizzoli

COUNSELING IN ACTION. THE EXPERIENCE OF UNIVERSITY OF SALERNO

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Abstract

The University Counseling Center supports the students about any type of discomfort related to university learning experiences. The hypothesis is that, through both the counseling experience and the relationship with counselor, the students will be able to: 1. Detect the sense of discomfort within development trajectory; 2. Amplify the awareness of the discomfort symptoms; 3. Promote improvements in affective, cognitive and relational dysfunctional areas.

Fifty students asked to Counseling Center for having a psychological support, about different reasons. As counselors, we submitted them a test for the socio-demographics' information and the SCL- 90R test (Symptom Checklist-90-R) before and after the Counseling activities.

The results suggest that, following the counseling action, the symptoms decreased and the students activated their individual and relational resources to mediate the person and his problems relationship and to reactivate the capability of troubleshooting (Telfener, Casadio, 2003).

Keywords: *University counseling, discomfort, psychological support, empowerment, students*

1. Introduction

The University Counseling is a service offered to the students, with the aim of responding to the forms of discomfort related to experience university education. The discomfort, according to the systemic-relational perspective (Eldeistein, 2009) and cultural Development (Iannaccone, 2010; Bruner, 1990), is the manifest form of crisis adaptive requested by transitions identity and role, and it appears as a reduction of the areas of individual and relational functioning (Oyeserman, Destin, 2010). It results in a dysfunctional intrapsychic of mental functioning (Baldascini, 2002).

The activity of Counseling focuses students in the needed asked redefinition, and in overcoming difficulties expressed by the condition of disorientation or psychological impasse.

2. Objectives

Verify the following hypothesis: through the therapeutic relationship, rebuild sense of discomfort within a path evolution, is configured as an augmenting path in the users awareness of their symptoms and their function, promotes an improvement in the areas of affective, cognitive and relational dysfunctional.

3. Methods

3.1. Participants

The sample was done by 50 students (30 females and 20 males) with a mean age of 26 years (SD = 3.7), which, due to several reasons (e.g. difficulty and blocking

studies, adjustment difficulties, disorders anxiety, disorientation with respect to the choice made, difficulty concentrating), required psychological support.

Attending Faculties are: Economics (3%), Law (15.2%), Engineering (21.2%), Humanities (18.2), Foreign Languages and Literature (6.1%); Sciences Education (27.3%), Political Science (6.1%), Mathematical and Physical Sciences (3%).

With regard to the characteristics of the sample:

63% of the students are on track, whilst 37% are off track with their studies.

60% of students are single, 37% is engaged, 3% lived with their partner.

49% of students live on-site, while 51% comes of outside.

Students guess do not practice sporting activities. About 64% said that it did not participate in sports, while 36% make physical activity.

48% say they feel fit, 45% say the opposite, while 2% said that sometimes he feels fit.

53% takes on alcohol at least once a week, 13% never takes alcohol, 34% sometimes drink alcohol.

3.2. Tools

Students were given a socio-demographic information and the SCL-90R test (Symptom Checklist-90R), which assesses a wide range of psychological problems and symptoms of psychopathology, by measuring both the internalizing symptoms (depression, somatization, anxiety), than for externalizing (aggression, hostility, impulsivity).

It presents the subscales:

somatization (SOM), obsessive-compulsive, (OC), interpersonal hypersensitivity (IS), depression (DEP), anxiety (ANX), hostility (HOS), phobic anxiety (PHOB), paranoid ideation (PAR), psychoticism (PSY).

Detects and 3 global rates:

-Global Severity Index (GSI), which assesses the intensity of the level of psychological distress;

-Positive Symptom Total (PST), which provides information on the number reported symptoms;

-Positive Symptom Distress Index (PSDI), used as estimating the index of response style.

The SCL-90R was given before (PRE-test) and after (POST-test) the Counseling action. The POST-test was given as follow-up, six months later after the first action.

4. Discussion

Data were subjected to quantitative analysis of inferential types:

a) The ANOVA test was performed between categories variables sex and University attended and subscale mean scores of SCL-90R. Data analysis shows that the average values of the symptoms are not distributed in a significantly different for the variables ($p > 0.05$). Instead, the correlation between age and the subscales of SCL-90R shows an increase in average values in the pre-counseling for areas depression, anxiety, psychoticism, paranoid ideation, GSI, PSDI, with increasing age.

b) It was also used the Student's t test for paired samples, with the aim to compare the average scores obtained in the different subscales of SCL-90R to the stages of PRE-test and POST-test.

We compared to the individual subscales of the following is noted (see charts 1 and 2):

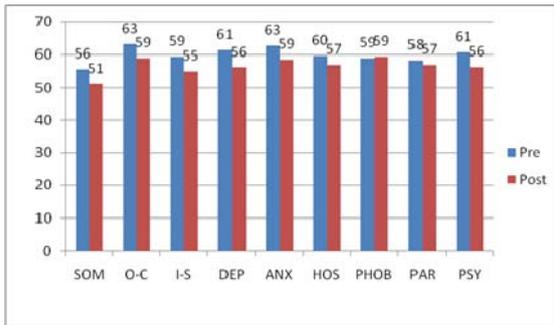


Chart 1.

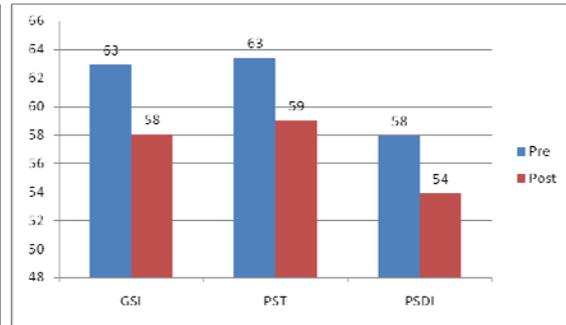


Chart 2.

The average comparison between the mean values of the subscales shows that in the POST-test decreased almost all symptoms, as well as the intensity of the perceived inconvenience, the discomfort level connected to the symptom and the number of reported symptoms ($p > 0.05$, $df = 49$). In hostility, phobic anxiety and paranoid ideation scales the difference between the averages is not significant ($p > 0.05$).

5. Conclusions

The results show the effect of Counseling action:

- reduce the symptoms;
- activated individual and relational resources that mediate the relationship between the person and his difficulties;
- reactivate the individual psychological tools for problems solving.

In general, Counseling action seems to stimulate the overcoming of evolution obstacles, by using a greater self-awareness, and increase self-determination and a sense of efficacy (Telfener, Casadio, 2003), as well as new strategies for empowerment (Gore, 2008). The availability to find a reception area relational helps students to deal with psychological blocks, often due present and past relational and individual situations. This allows the symptom of losing their function and find a different symbolization fiction.

It is also highlighted aid a process that transforms the blocks in projections. For example, the projected anger against self may take the form of hostility.

They show, however, some limitations. For example, the SCL-90R provides information on the presence / absence symptoms. However, it must be integrated with process aspects related to the history of past and present they are part of the symptoms. The process factors are also important for understanding how the path Counseling drive "changes".

References

- Derogatis L. R. (2011). *SCL-90R*. Firenze: Giunti O.S
- Eldestein C. (2009). *Il counseling sistemico pluralista. Dalla teoria alla pratica*. Trento: Erickson,
- Baldascini L. (2002). *Legami terapeutici*. Milano: Franco Angeli.
- Bruner J. (1990). *Acts of Meaning*. Cambridge, MA: Harvard University Press
- Gore P. jr. (2008). Counseling e successo accademico. *Counseling*, 1(2),119-137.
- Iannaccone A. (2010). *Le condizioni sociali del pensiero. Contesti sociali e culturali*. Milano: Unicopli
- Oyserman D. & Destin M. (2010). Identity-based motivation: Implications for intervention. *The Counseling Psychologist*, 38, 1001–1043.
- Telfener U. & Casadio L., (eds) (2003). *Sistemica. Voci e percorsi nella complessità*. Torino: Bollati Boringhieri.

INQUIRY THE COLLEGE OF TEACHERS WORKS IN A TRANSFORMING WALDORF SCHOOL IN TAIWAN

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Abstract

The College of Teachers is responsible and provides leadership for all pedagogical aspects by Rudolf Steiner and to provide vision of the Waldorf School. However, it was not a custom that the teachers manage the school administration affairs. That is because it was differ from most mainstream schools in Taiwan. Even though the curriculum autonomy was developed in each school, but about building up school policies and governing school which are upon the authority of the principal.

This study was used qualitative approach and narrative inquiry to expound the small public school in countryside of Taiwan which is transforming to Waldorf School. Just like other public schools, there is a principal to be a leader to manage the transformation. This research tried to inquiry the shift of authority from the principal to college of teachers, and focuses on them how to deal with all pedagogical practice in administrative management. In order to provide a journey which could response bureaucracy in this process.

Keywords: *Waldorf School, college of teacher, bureaucracy*

1. Introduction

In 2011 summer, there were two mainstream elementary schools transformed to Waldorf School in Yunlin, Taiwan. Yunlin is an agricultural county with 68% of farmland in its total area. Due to its fertile land and good weather, Yunlin has many kinds of agriculture products in different seasons. For these reasons, Yunlin was as known as "The Capital of Agriculture of Taiwan." Even though the agriculture production of Yunlin supplied three-fourth needs for the whole country, the population was declining with the speed of 1000 people per year. Some reports indicated that youth people intend to move to other cities to find other career besides agriculture.(reference) In fact, the most important reason that people want to leave Yulin was because farming was such a harsh work; hard work, gain a little, and cannot be respected according to the traditional social rank. In addition, the economic recession for years had made youth difficult to earn a living, never mentioned of raising children. As a result, most of elementary schools in Yunlin were facing a serious problem that there might be no students in the near future.

The shortage of students affected the education system in Taiwan. The county government would shut down some elementary schools if those schools cannot contribute a lot. Schools had to find their specialist or transform to survive. That also meant the schools need to design and find new elements for their curriculum. As a result, transferring to Waldorf school could be a choice.

2. Methods

Narrative Inquiry is interested in people's stories, told in their own words, about some aspect of their life experiences. A personal narrative process is involved in a

person's sense of personal or cultural identity, and in the creation and construction of memories; it is thought by some to be the fundamental nature of the self. Especially to inquiry the stories in the college of teachers in this transforming, they have some struggle under bureaucracy. NI could express this case with another kind of presentation.

3. Wave Case- The plan of principal's transformation

The principal had worked in this position for two years and he was from Yunlin. He was good at finding new elements in curriculum. For example, there were sugarcane and peanuts farms around Wave, he supervised school teachers to put those local agriculture elements into their curriculum. The curriculum was promising because it brought the connection between the students and their own neighborhood. The magistrate of Yunlin County nominate this principal to be in charge of this transformation. When the other new teachers and I first arrived Wave, the principal told us that he had a very good relationship with the community, and the community would support this transformation since he was the person who in charge.

The principal thought since Waldorf education came from overseas and parents in Taiwan took English ability quite important, then emphasizing on developing English curriculum could be one way to introduce Waldorf education to parents. He said if we could provide more English lessons, Waldorf education would be acceptable to parents since they expect their children gain more ability while studying.

Moreover, the principal intend to make students stay longer in school. He intends to make teachers provide more lessons and take care of the students after regular school hours. He thought by doing this, we could make parents accept Waldorf education more since we were providing extra and free lessons. In Taiwan, it was a common thing to send children to private cram school after regular school hour. Thus, it could reduce the cost for parents on children education since they do not need to send their children to cram school any more. However, it was violate the rule which established by Ministry of Education (MoE) in Taiwan. MoE had a very strict school hours regulation for each grade students.

3. Transforming of the College of Teachers

The transformation policy was not only on managing but also recruiting, according to the policy, Wave recruited five teachers out of 600 participants by opened examination and selection. Two new teachers were local from Yunlin and one of them was a student of the principle while study primary school. Three teachers were from outside of Yunlin; two were from Taichung City and one from Taipei.

The principal decided to remain mainstream education for Grade Three to Six and applied Waldorf for Grade One and Two. Ru and Lala had given Waldorf lectures for several years. The principal nominated them to teach Grade One and Two which required develop their own curriculum just like other Waldorf School.

Every Monday, Wave had an administration meeting, which can gather principal and department leaders together and announced important issues. Usually in the last section of the meeting, teachers were allowed to discuss any related issues.

The first thing Lala was concerned about was about the school bell. It was an electric bell. But according the idea of Waldorf education, the students should stay on a "nature" atmosphere; which means no artificial items such as plastic flower or fragrance. A electric bell certainly would become a issue in a Waldorf school. Lala suggested to purchase a real bell and guided the older students, Grade Five and Six, to ring the bell by turns. It would have extra benefits because by ring a real bell instead of a radio electric bell, kids in kindergarten would not be bothered during their nap since the have longer nap period.

However, it was not that easy to make it practical. Teacher of Grade Six had to guided students to do the job, otherwise sometimes the students forget their duty and did not do their job in the right time and it made students came back late. A teacher suggested to ring the bell by the teachers, the other teachers suggest using the electric one again. Ru, one of the experienced Waldorf teachers, had different opinion. She thought as a teacher, we should be more careful of the time and firmly follow the school timetable. If even the teachers relay the sound of bell only, how could we teach students self-discipline on daily schedule.

The principle cared about recruit many students into Wave, but as experienced Waldorf teachers, Ru and Lala concerned more about how to make Wave become a real Waldorf school. Furthermore, the way principle promoted Wave was actually misleading parents to think Waldorf school as a education system provide extend teaching hours and more English course. However, that was the core idea of Waldorf education and the misleading may make parents has a improper expectation.

Waldorf Education use a lot of art elements to emerge the curriculum. The previous study showed early childhood artistic education could gain children's intellect. People will discover how great a power resides in an artistic manner of instruction for the development of will and feeling (Rudolf Steiner, 1919). Furthermore, alien language were introduce in an imaginative way; instead of regular textbook, Waldorf teachers such lecturing via singing songs, telling stories, making poetry. That is far from what the method of a mainstream school. English letters would not be taught until Grade Three; before that, students only develop on listening and talking. Compare to other English lecture courses in mainstream public schools or English cram schools, the method of Waldorf education is not a shortcut fast, but it shall establish a strong foundation on language learning.

3. Conclusions

It is not easy for a Waldorf School fallow with ordinary bureaucracy. Although the teachers with strong willing to transfer in curriculum and instruction, they face many struggles in it. In Waldorf School, the administration should develop with philosophy of Anthroposophy, but just management. The community is not ready to accept this kind of ideal school, so does the principal. They do not have any background of this ideal of education, so that what is the teachers concern about is not the same with the community. It is a process that those teachers eager to practice the Waldorf Education in a small village in Taiwan, and what they had done to cultivate the students is not just about the theory.

References

- Rudolf Steiner (1919). *An Introduction to Waldorf Education*. The Anthroposophic Press.
- Rudolf Steiner (1924). *Human Values in Education*. The Anthroposophic Press.
- Rudolf Steiner (1927). *Reordering of Society: The Fundamental Social Law* The Anthroposophical Publishing Company.
- Dennett Daniel C. (1992). *The Self as a Center of Narrative Gravity*. In: F. Kessel, P. Cole and D. Johnson (eds.) *Self and Consciousness: Multiple Perspectives*. Hillsdale, NJ: Erlbaum.
- Dan McAdams (2004). "Redemptive Self: Narrative Identity in America Today". *The Self and Memory* 1 (3): 95–116.

VIRTUAL PRESENTATIONS



FOSTERING DIFFERENT TYPES OF READING IN EFL LESSONS

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Abstract

Reading in EFL lessons is a crucial activity and teachers are well aware of the importance of working on this skill. Therefore, they always search for new ways in which to encourage their students to read. Most of the times, however, the success or failure in the reading task is very dependent on the kind of activity given to the student and not so much on the text chosen. If teachers want their students to become proficient in the foreign language, a range of different reading tasks will have to be experienced by them. Thus, the aim of this article is to offer a series of possible activities that EFL teachers can use in their lessons in a way in which each text type receives a correct approach by means of an appropriate task in each case.

Keywords: *Reading, EFL, Prose, Non-prose*

1. Reading in EFL Lessons

Teachers of foreign languages should take into account that "(...) if students are to become independent language users, they will need to experience a range of reading tasks corresponding to the kinds of reading they intend in the target language" (Silberstein 1994: 11). Thus, a variety of reading materials should be used in the lessons, together with a proper approach to each of them, guaranteeing not only the improvement of the reading competence of the students, but also the development of their vocabulary, oral and written competence and creative ability. However, the activities proposed in the foreign language lessons and in the textbooks followed by teachers are usually not designed to make the most of the reading process and they are sometimes oblivious of the fact that reading implies comprehending. Therefore, some activities in which the reading task is presented as useful, comprehensible and enjoyable for the student are displayed below.

2. Non Prose Materials and How to Work with Them: Some Examples

Once the Communicative Language Teaching became a common approach in the foreign language classroom by the end of the 70s (Larsen-Freeman 2000), a change generally accepted in the field of Foreign Language Teaching was the use of authentic materials¹ in the lessons that would ensure an effective transfer to the real world. This kind of material has the main drawback of not being graded to the level of the students, but this is easily overcome with the richness of materials that can be found on the net today. Non prose material is an important part of this: as Silberstein (1994: 37) states "Nonprose material can prove an important component of a reading curriculum. (...) it affords opportunities for productive practice in both top-down and bottom-up processing. Students rely on prior knowledge as they learn to interpret familiar types of nonprose material".

¹ It has to be noted here that, "(...) the language that is authentic for native speaker users cannot possibly be authentic for learners (...) it has to be localised so that learners can engage with it as discourse" (Widdowson 1998: 711-12).

Some examples of work which can be carried out with non prose material are as follows:

a) Maps: including street maps and public transport ones in which the student has to give directions and indicate the most appropriate route. In general, maps also include some prose too. What kind of reading can be done in this case? The most appropriate one is the scanning (Brown 1994), which implies the search for something very specific. An example of an activity of this kind could be to ask the students several questions regarding a map of the tube of any famous city and prepare an interactive communication exercise to give directions, making sure a proper reading of the map is being done. This kind of activities trains the students in abilities that are useful for them in the context of use of the foreign language.

b) Ads, signs and warnings: the students may be presented with diverse material ranging from a traffic sign to a “Danger” poster in a public building. The most appropriate reading task in this case would be one involving skimming (Brown 1994) or a quick reading with the aim of grasping the general idea of what is being read. Thus, an example of such an activity could be to show the student several signs and ask them to discern among different answers related to those signs and locate them in their correct place, eg. (a library, a museum, a zoo, a public building, etc). Likewise, an exercise with open-ended questions may be proposed, where the students should indicate the main objective of those signs or ads which will serve as an introduction to a more in-depth reading of a prose text related to the topic the signs dealt with.

Most of the signs or ads we encounter in life include some text and therefore the most common use the teacher does of them is as a cue for further reading practice, since “perhaps the most important feature of nonprose material is that it often accompanies prose” (Silberstein 1994: 37). Thus, the constant interaction between both types of material is something the student will perceive as natural, something to which pupils are not so used to in the language classroom.

c) Comic strips or cartoons: apart from the evident attraction this material has for students, comic strips provide with an excellent practical exercise for recognizing the relations that take place between different ideas in a text. The cultural background they normally imply and the cultural assumptions underlying them make the students practice their critical ability, assessing the material in relation to their own system of beliefs. Besides, the extended use of the new technologies in the classroom makes easy the access of the students to many examples of cartoon strips and their own creation of them, thus fostering creativity. Likewise, the “Jigsaw” technique or puzzle by means of which the student is asked to put in order a comic strip with the aim of checking their understanding of the cause-effect relation of the story presented is a good exercise to foster comprehensive reading.

These are only some examples of a kind of material which can be used successfully in the reading lessons in a foreign language and which sometimes is undervalued, with the consequent posterior inability of the student to face it when he or she really needs it.

3. Prose Materials and How to Work with Them: Some Examples

The kind of exercises usually found in EFL textbooks consists of the reading of a prose text and then multiple choice or true/false questions concerning it. The material we indicate below is susceptible of being used by the teacher in the classroom in a different manner, one in which the actual comprehension of the text by the student is assured:

a) “Minute mysteries”: this format is also known as “lateral thinking puzzles” (de Bono 1968) because they imply a kind of thinking which is different from a mere linear one with the aim of solving a problem or mystery. This kind of exercises is attractive for the students and challenges them to solve the mystery, thus adding motivation to the task. The questions which are allowed are only “yes/no” ones and they can give rise to

different inferences, right or wrong ones, but which allow practicing vocabulary and structures in the foreign language².

b) Kamishibai³: this resource implies a form of storytelling which has its origin in the Japanese culture. On the whole, the kamishibai technique is composed of twelve to sixteen colour illustrations that include some text on their back part. Those illustrations are embedded in a cardboard theatre with two windows that, when open, look like a pictorial tri-fold leaflet. The use of kamishibai as a teaching resource allows the teacher to focus not only on the use of the language that the students need to do when reading the story but also on the students feeling part of the making of the story by asking them to create it (thus connecting reading and writing), to impersonate it (thus interacting with the spectator, composed of the rest of the students) and to compose it including cross curricular links with other subjects in their academic context. Its efficacy in the classroom has already been confirmed in Japan and its use is becoming more and more common in the Western countries (Cid Lucas 2009: 145). Its exploitation in the languages lessons is therefore a rising value not to overlook.

4. Final Remarks

Effective reading is essential for success in acquiring a foreign language. When teachers employ proper reading tasks with their students, they know that they are working on the basis of instruction in all aspects of language learning. The reading tasks normally included in textbooks are prose texts with a series of questions which don't guarantee the comprehension aim of the whole process of reading. As Barrera Benitez states (2007: 7):

Another important reason to foster reading in English is that, on many occasions, it is the most useful skill for the majority of our students in the future, since many of them don't use the language abroad but they constantly find messages in English: advertisements, product labels, instructions for use and, mostly, surfing the web. (my translation)

As the important stimulus it constitutes in the learning of a foreign language, reading should be fostered in a proper way. The guidelines presented in this paper are only some indications on how to do this. They need to be contextualized and implemented by the teacher, who, with his or her expertise, will be the one in charge of exploiting them in the lessons.

References

- Barrera Benítez, I. (2009). Motivación a la lectura en el aula de inglés. *Innovación y Experiencias Educativas*, 22: 1-7.
- Brown, H.D. (1994). *Teaching by Principles*. New Jersey: Prentice Hall
- Cassany, D., Luna, M. y Sanz, G. (1994). *Enseñar lengua*. Barcelona: Graó.
- Cid Lucas, F. (2009). El 'Kamishibai' como recurso didáctico en el aula de educación infantil y primaria: una experiencia educativa. *Propuestas para un entendimiento Oriente-Occidente. Bordón*, 61 (4): 141-149.
- De Bono, E. (1968). *New Think: The Use of Lateral Thinking in the Generation of New Ideas*. New York: Basic Books.
- Larsen-Freeman, D. (2000). *Techniques and Principles in Language Teaching*. 2nd edition. New York: Oxford University Press.
- Silberstein, S. (1994). *Techniques and Resources in Teaching Reading*. New York: Oxford University Press.
- Widdowson, H.G. (1998). Context, community, and authentic language. *TESOL Quarterly* 32/4:705-15.

² For examples of this kind of resource see, e.g.: <http://oneminutemysteries.com/>

³ For a summary of the history and development of this kind of resource, as well as examples of Japanese stories and ideas to work with students, see: <http://www.kamishibai.com/>

THE STUDY OF PRE-SCHOOL CHILDREN'S COGNITIVE PERFORMANCES WHO ARE COMING FROM LOW AND HIGH SOCIO-ECONOMIC LEVELS

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Abstract

The present study examined children's cognitive performances developmentally who are coming from low and high socio economic levels. The sample of the study consists of 138 children from the province of Konya from low and high socio economic levels. The research findings show that cognitive performances of pre-school children between 48-66 months differ significantly ($p < .05$) regarding low and high socio-economic levels in favor of children coming from the upper socio-economic levels.

Keywords: *Cognitive performance, development, child, socio economic level.*

1. Introduction

The development of active mental activity helping the individual learn and understand the world around him is called cognitive development. Cognitive development includes individual's changes facing the functions of language, thought, and intelligence (Senemoğlu, 2005). Studies describing cognitive development focus on what the changes are between different ages and how these changes will appear (Meadows, 1989). Children having weak early childhood development and coming from poor families who are in the vicious cycle of poverty will show poor cognitive development as a result of being at low socio-economic levels (Carneiro & Heckman, 2003; Heckman & Masterov, 2004; Paxson & Schady, 2007). Researches have shown that children growing up in families who can communicate well and offer rich stimulants have more positive cognitive performances. This situation seems to emerge more dominant within low-income sample groups (Bradley, 1985; Bradley, Whiteside, Mundfrom, Casey, Kelleher & Pope, 1994). Skills such as perception, language, memory, and problem solving are included in this mental process. The present study aimed to investigate 48-66 month old children coming from upper and lower socio-economic levels developmentally and examine their cognitive performances.

2. Method

2.1. Model of the study

The study is in "relational survey model."

2.2. Population and Sample

The sample of the study consists of 138 children from the province of Konya coming from low and high socio economic levels. While 73 of the children (% 52.9) were from low socio economic levels, 65 were from high socio economic levels (% 47.1). 77 of the mothers participated were housewives (% 55.8), 49 were officers (% 35.5) and 12 were from other occupational groups (% 8.7). 51 mothers were (% 37.0) primary school graduates, 31 (% 22.5) secondary school graduate and 56 of them were (% 40.6) undergraduates or above.

2.3. Data Collection

In order to find out whether the children's levels in four development levels were normal or not 'Ankara Development Scanning Inventory' consisting of 154 items is used. To determine the cognitive performance levels "Basic Skills Test 5-7" is used. In addition, a personal information form is prepared and applied by the researcher.

ADSI (Ankara Developmental Screening Inventory)

Ankara Developmental Screening Inventory (ADSI) survey is a test that can identify babies and children at an early stage showing developmental delays and irregularities and considered to be at risk. Total raw scores of the overall development, mean 50, transformed to T scores having standard deviation of 10 (AGTETP). In this way, children of different age groups can be evaluated with a common type of score. (Savaşır, Sezgin and Erol, 1994).

Basic Abilities Test (5-7 Age) Group Intelligence Test

Basic Abilities Test (5-7 Years) is a group test and developed for 5-7, 5-7, 7-11 and 11-17 age groups by T. G. Thurstone ve L. L. Thurstone in three different forms. BAT 5-7, is formed with a total of 130 questions and four sub-parts. These are: the concept of language, differentiation speed and the number concept. BAT 5-7 Group Intelligence Test is translated into Turkish in 1953, and partly adapted (M.E.B., 1994).

2.4. Data Analysis

"Independent Samples T-Test" is used while analyzing the data.

3. Results and Discussion

Table 1. The T-Test Results of Pre-Schoolers' Cognitive Performances Regarding Their Socio-Economic Levels

BAT Sub Dimensions	Group	N	X	S	sd	t	P
Language Concept	Low SEL	73	34,12	6,31	136	7.28	.000*
	High SEL	65	41,20	4,92			
Differentiation Speed	Low SEL	73	19,96	5,11	136	3.69	.000*
	High SEL	65	22,95	4,33			
Number Concept	Low SEL	73	13,78	5,15	136	8.89	.000*
	High SEL	65	20,66	3,73			
Place Concept	Low SEL	73	13,15	4,67	136	3.24	.001*
	High SEL	65	15,49	3,68			
Total	Low SEL	73	81.01	13,96	136	8.48	.000*
	High SEL	65	100.31	12,61			

*significance level is 0.05. BAT:Basic Abilities Test (5-7) *SEL:Socio-Economic Level

When the results are analyzed according to their socio-economic levels, significant difference was found in children's language, number, location concepts, differentiation speed and total scores in favor of the children coming from high socio-economic level. A pre-school child's is expected to walk on a fine line easily, to draw the geometric shapes as a part of their physical and motor development; expected to have basic knowledge of colors and make simple addition operations as they a part of

their cognitive and language development; being able to express their feelings easily, to play group games as a part of their social and emotional development and dress by himself as a part of self-care (Ucur, 2005). Children who are socioeconomically disadvantaged in early childhood are prone to developmental retardation (Burger, 2010). Low socioeconomic status is associated with, poor gross motor skills (Bobbio, Morcillo, Barros, & Gimenes Goncalves, 2007; Handal, Lozoff, Breilh, & Harlow, 2007), poor cognitive development (Kiernan & Mensah, 2009; Paxson & Schady, 2007) and school age cognitive skills (Piek, Dawson, Smith, & GASSO, 2008).

4. Conclusion

When the results of cognitive performances of children between 48-66 months are analyzed, according to low and high socio-economic level, a significant difference was found regarding children's language, number, place concepts, differentiation speed and total scores in favor of high socio-economic levels. Disadvantaged families across the country should be supported by providing rich environment stimulants with the help of visual and printed media. Public and private institution activities and programs should be organized for children in these families to support their cognitive performances.

References

- Bobbio, T. G., Morcillo, A. M., Barros, A. D. A., & Gimenes Goncalves, V. M. (2007). Factors associated with inadequate fine motor skills in Brazilian students of difference socioeconomic status. *Perceptual and Motor Skills, 105*, 1187–1195. doi:10.2466/PMS.105.4.1187-1195
- Bradley, R. H. (1985). The home inventory: Rationale and research. In J.Lachtenmeyer & M.Gibbs(Eds.),Recent research in developmental psychopathology(book supplement to the Journal of Child Psychology) (pp.191-201). New York:Gardner.
- Bradley, R. H., Whiteside, L., Mundfrom, D. J. , Casey, P. H., Kelleher, K. J. & Pope, S. K. (1994). Early indications of resilience and their relation to experiences in the family environment of low birthweigh, premature children living in poverty.*Child Development, 65*, 346-360.
- Handal, A. J., Lozoff, B., Breilh, J., & Harlow, S. D. (2007). Sociodemographic and nutritional correlates of neurobehavioral development: A study of young children in a rural region of Ecuador. *Revista Panamericana de Salud Pública, 21*, 292–300. doi:10.1590/S1020-49892007000400004
- Kiernan, K. E., & Mensah, F. K. (2009). Poverty, maternal depression, family status and children's cognitive and behavioural development in early childhood: A longitudinal study. *Journal of Social Policy, 38*, 569–588. doi: 10.1017/S0047279409003250
- Meadows, S. (1989). *Understanding Child Development*, Routledge: New York.
- Piek, J. P., Dawson, L., Smith, L. M., & Gasson, N. (2008). The role of early fine and gross motor development on later motor and cognitive ability. *Human Movement Science, 27*, 669–681. doi:10.1016/j.humov.2007.11.002
- Savaşır, I., Sezgin, N., Erol, N. (1994). *Ankara Handbook of Developmental Screening Inventory*. Ankara: Ankara University Medicine Faculty, 1-27.
- Senemoğlu, N. (2005). *Development, Learning and Teaching: Kuramdan Uygulamaya*. Ankara: Gazi Bookstore.
- Ucur, Z. E. (2005). The Effect of Different Parental Attitudes on Pre-School (Age 5) Children's Cognitive Performance Levels. Maltepe University Social Sciences Institute, İstanbul.
- MEB (1994). *General Skills Test- Age 5-7. The Study of Türkiye Standardization and Norm*. M.N.E. Special Education and Counseling Services General Directorate. Ministry of National Education Publications. Ankara.

THE STUDY OF CHILDREN'S ATTENTION AND VISUAL MOTOR PERCEPTION LEVELS WHO ARE STUDYING IN PRE-SCHOOLS AND HAVING MONTESSORI EDUCATION

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Abstract

In the present study attention and visual motor-perception levels of children having Montessori education and studying in pre-schools are investigated. The study is in relational screening model and conducted in the province of Konya with 70 children who are studying in pre-schools giving Montessori Education (N=35) and with the ones who are studying in pre-schools without Montessori Education (N=35). 37 of the children in the sample were girls (52.9 %) and 33 of them were boys (47.1 %). In order to measure children's attention skills "Frankfurt Gather Attention Test" is applied. To evaluate children's visual perception levels "Bender Gestalt Visual Motor-Perception Test" is used. In addition, a personal information form is prepared and applied by the researcher. When children who are having education with Montessori Method and children who are having education according to the Ministry of Education Pre-School Education Program were compared, a significant difference is found regarding attention and visual perception in favor of the children educated with Montessori Method.

Keywords: *Pre-school education, child, visual perception, attention, montessori education*

1. Introduction

Attention is the gathering of feelings and thoughts on a topic or issue, and the wide awake state of the mind "(Oğuzkan, 1974). Perception is the interpretation of one or more sensory stimulus that the brain body has recorded (Aral et al, 2001). As for visual perception, it is the ability to grip the things that the individual has seen (Kaya, 1989). The purpose in visual perception is providing children to focus on the characteristics of an object or nature of assets (Artut, 2004). Perceptual skills show development at the highest level approximately between the ages of three to seven. Development of the perception depends on both maturation and the experience. There is a significant association between maturation and perception as the individual needs sense organs to perceive his environment. As for the experiences, they help the child 's to obtain information from his environment (Aral et al, 2001; Ozer and Ozer, 2004). The individual forms most of his impressions of the external environment by means of visual sense. Visual perception process begins when the person starts seeing by choosing from the image mess around him (İnceoğlu, 2004). Based on this information, the study aimed to investigate the attention and visual motor-perception levels between the children who receive regular training and Montessori education with special materials and to give recommendations based on the results obtained.

2. Method

2.1. Study Model

Present study is in "relational survey model" which is a part of general screening model.

2.2. Population and Sample

The study is conducted in the center towns of the province of Konya with 70 children who are studying in pre-schools giving Montessori Education (N=35) and with the ones who are studying in pre-schools without Montessori Education (N=35). 37 of the children in the sample were girls (52.9 %) and 33 of them were boys (47.1 %). While 39 of them were first-borns (55.7 %), 31 of them were not (44.3 %). 12 of the mothers were housewives (17.1 %), 43 of them were officers (61.4 %) and, 15 of them were from other occupational groups (21.4 %). In addition, 18 mothers were secondary school graduates (25.7 %) and 52 of them were undergraduates (74.3 %). 38 fathers were officers (54.3 %), 4 of them were shopkeepers (5.7 %), 28 of them were from other occupational groups (40.0 %). According to their educational levels, 13 of the fathers were secondary school graduates (18.6 %), 42 of them were undergraduates (60.0 %) and 15 of them had Masters Degree or above (21.4 %).

2.3. Data Collection

In order to measure children's attention skills "FTF-K Attention Test for the Children at the age of five" is applied. The test is developed by Raatz & Möhling (1971) and aims to measure children's gathering attention skills, the children are asked to find the pears among the ones mixed with apples within the 90 seconds and mark them. Test was applied to 266 children who are at the ages of 5; 0-6, 3 in 1968. And in 1970 it was applied again to 1170 children at the ages of five and six. The correlation between the two applications was $r = .85$ (Kaymak, 1995). To evaluate children's visual perception levels "Bender Gestalt Visual Motor-Perception Test" is used. The test was developed by L. A. Bender (1938) and adapted to Turkish by Somer (1988). In test re-test reliability The Pearson Product Moment Correlation Coefficient was .80 for the first grades, was .73 for the second grades and was .81 for the third grades. The interscorer Pearson Product Moment Correlation Coefficient was found as .93 (Öner, 2008). In addition, a personal information form is prepared and applied by the researcher.

2.4. Data Analysis

In the analysis of the data "Mann-Whitney U-test" is used.

3. Findings and Discussion

Table 1. The Mann-Whitney U-Test Results of Children's Levels of Attention and Visual Perception Regarding Group Scores

	Group	n	\bar{X}	s	Rank Average	Rank Sum	U	p
Total Attention Scores	Normative group	35	34.82	7.33	25.77	902.00	272.0	.000
	Montessori group	35	42.11	6.90	45.23	1583.00		
Visual Perception Total Scores	Normative group	35	12.91	3.25	30.21	1057.50	427.5	.028
	Montessori group	35	15.05	1.78	40.79	1427.50		

According to Table 1, there was a significant difference ($p < .05$) in attention, and visual perception mean scores between the children who are educated according to the Pre-School Education Program of the Ministry of Education and the ones who

had Montessori education, in favor of the children educated with Montessori method. This finding shows that Montessori Method is effective in enhancing the attention, and visual perception skills of children. Montessori Method is one-to-one educational approach. In this method, the teacher is involved with each child as an individual and many of the activities are applied individually. Therefore, the teacher has to identify the individual needs of each child and has to prepare an individual activity program for each child in accordance with these requirements. Self-study, the original choice of materials, the child's unique way of working pace requires self-organization ability and develops this skill. Child learns to plan, to prepare, to share, briefly he learns to behave effectively and proper to its goal in his own way. However, when individual studies can be done in Montessori groups, teachers can't prepare individual programs within classrooms where the National Training Programme is implemented because classrooms are very crowded and the number of children makes it difficult to practice. For this reason, it is very normal that the resulting scores of the children in these classes are lower than the children's scores who are educated with the Montessori Method regarding their attention, and visual perception (Çakıroğlu Wilbrandt, 2009; Kayılı, Koçyiğit & Erbay, 2009).

4. Conclusions

There was a significant difference in attention, and visual perception mean scores of children who had Montessori education and the ones who had education with the Pre-School Education Program of the Ministry of Education, in favor of the children who were taught with Montessori Method. According to findings in classrooms where National Training Programme is implemented, the environment can be formed by teachers in order to support and stimulate the development of attention and visual perception of children. Private or in-service training courses can be arranged for teachers who are working in schools where National Training Programme is administered.

References

- Aral, N., Baran, G., Bulut, S., Çimen, S. 2001. *Child Development I*. İstanbul: Ya-Pa Publications
- Artut, K. (2004). *Theories and Methods in Art Education*. (3th Edition). Ankara: Anı Publishing.
- Çakıroğlu Wilbrandt, E. (2009). *The Education of Children With Mari Montessori Method Handbook for Educators and Parents*. İstanbul: Sistem Publishing.
- İnceoglu, M. 2004. *Attitude-Perception communication*. Ankara: Elips Book.
- Kaymak, S. (1995). Gathering Attention Studies of five-year old Children who attend Nursery Schools. Unpublished Master's Thesis. Ankara: Ankara University, Institute of Social Sciences.
- Kaya, Ö. (1989). 'The Effects of Frostig Visual Perception Education Program on Pre-School Children's Visual Perception and Cognitive Development'. Unpublished Master's Thesis. Ankara: Hacettepe University.
- Kayılı, G., Koçyiğit, S. & F, Erbay. (2009). Examination Of The Affect Of Montessori Method On Receptive Language Of Kindergarten Children. *Turkiyat Studys Journal*. No: 26. ISSN 1300-5766.
- Oğuzkan, F., (1974). Education Terimleri Glossary Turkish Language Society Publications <http://tdkterim.gov.tr/?kategori=bakdetay&sozid=EGT> date of access: 20.03.2013.
- Öner, N. (2008). *Psicological test samples used in Turkey*. (2th Edition). İstanbul: Bogaziçi University Publication.
- Özer, D. ve Özer, K. (2004). *Motor Development in Children*. Ankara: Nobel Publication.

THE RESEARCH ON MOTHERS' OPINIONS ABOUT SCHOOL READINESS OF THEIR 66-72 MONTH-OLD CHILDREN

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Abstract

The present research aimed at studying mothers' opinions about school readiness of their 66-72 month old children receiving and not receiving pre-school education. The scope of the research consists of mothers from Konya province whose children receive pre-school education and do not receive any pre-school education. The sample of the research consists of 60 mothers having 66-72 months of children that receive preschool education and 60 mothers whose children do not receive preschool education (n=120). The data was collected via 'Mother's View of Child's School Readiness Scale'. It has been determined that there is a considerable difference between mothers' opinions about school readiness of children and the condition of receiving and not receiving preschool education in terms of readiness from mother's viewpoint, intellectual-linguistic, social-emotional and physical development sub-dimensions and general total points. There was no difference in self-care skills sub-dimension.

Keywords: *Mother's opinion, child, pre-school education, school readiness*

1. Introduction

Starting school is one of the most important milestones in a child's development. Besides school has the feature of being the first social institution after family and it also means a new social environment. In this environment, a child encounters increasing demand for well-arranged and goal-oriented activities, which also include the capacity of obeying rules, establishing and continuing positive relationship with teachers and peers. The experiences, knowledge and skills gained before starting school have a considerable effect on development and achievement of children in meeting the demand. From this perspective, children find the needed environment to develop their cognitive and linguistic skills and get ready for learning reading-writing through the activities in preschool education programs. (Yavuzer, 2006; Umek, Kranjc, Fekonja & Bajc, 2008; Unutkan, 2007; Tuğrul, Duran, 2003).

The present research aimed at studying opinions of mothers on school readiness of their 66-72-month-old children that received and did not receive pre-school education.

2. Method

2.1. Scope and Sample

The research is in screening model. The sample of the research consists of 120 mothers- that is, 60 mothers having 66-72 months of children that receive preschool

education and 60 mothers whose children do not receive preschool education. In the study group, 71 mothers(59.2%) are primary school graduates, 32 mothers(26.7%) graduated from secondary education institutions and 17 mothers(14.2%) have bachelor's degree. 75 participant mothers(62,5%) are housewives, 13 participant mothers(10.8%) are officials, 13 participant mothers(10.8%) are tradeswomen, 19 participant mothers(15.8%) have other occupations. Fifty-five of mothers (45.8%) have daughters and sixty-five of mothers (54.2%) have sons.

2.2. Data Collection

In the research, while personal information form developed by the researchers was conducted on parents of children in order to obtain the information related to the parents, 'Mother's View of Child's School Readiness Scale (MVCSRS)' developed by Kotil(2005) was employed to evaluate mothers' opinions about children's readiness for primary school and development. Mother's Views of Child's School Readiness Scale consists of five sub-dimensions including readiness from mother's viewpoint (20 items), intellectual and linguistic development (29 items), social emotional development (12 items), physical development (21 items), self-care skills (12 items), and 94 items in total. The scale is based on information that mother can observe at home. According to replication frequency, the behaviours of children are graded by mother as never(1), rarely(2), sometimes(3), often(4), always(5). The Cronbach Alpha value of the scale is .95.

2.3. Data Analysis

The perceptions of mothers about school readiness levels of their children depending on the condition of receiving-not receiving preschool education were analysed through "Independent T-test".

3. Findings

Table 1. Results of dependent t-test conducted for total and sub-scale points of mother's views of child's school readiness scale depending on receiving-not receiving preschool education

		The Condition of Receiving Preschool Education	n	\bar{X}	S	sd	t	p
Readiness from Mother's Viewpoint	Receiving Preschool Education		60	96,10	8,67	118	4.30	.000
	Not Receiving Preschool Education		60	88,78	9,88			
Intellectual-Linguistic Development	Receiving Preschool Education		60	137,30	9,58	118	4,73	,000
	Not Receiving Preschool Education		60	126,53	14,76			
Social-Emotional Development	Receiving Preschool Education		60	55,43	5,22	118	2,39	,018
	Not Receiving Preschool Education		60	52,88	6,38			
Physical Development	Receiving Preschool Education		60	100,55	9,87	118	4,93	,000
	Not Receiving Preschool Education		60	91,28	10,67			
Self Care Skills	Receiving Preschool Education		60	56,88	5,69	118	1,33	,186
	Not Receiving Preschool Education		60	55,55	5,26			
General Total	Receiving Preschool Education		60	446,26	29,56	118	4,87	,000
	Not Receiving Preschool Education		60	415,03	39,80			

When t test results in Table 1 is examined, it is seen that there is a meaningful difference at 0.05 level on behalf of children receiving preschool education between mothers' opinions about school readiness of children and the condition of receiving-not receiving preschool education in terms of readiness from mother's viewpoint, intellectual-linguistic development, social-emotional development, physical development sub-dimensions and general total points. The same difference was not observed in self-care skills sub-dimension.

4. Discussion

Providing children with appropriate learning opportunities for their development and the environment supporting children emotionally improve linguistic, social, emotional and intellectual development significantly (Downer, Pianta, 2006; Fontaine, Torre & Grafwallner, 2006). Preschool education provides children with self knowledge of all features and self-acceptance, awareness of their own cultural aspects and other cultures' aspects, impressive communication via language, music, dance, drawing, and it contributes to skills such as multiple thinking and problem solving and creativity Senemoğlu (1994). Erkan and Kirca (2010), Kiernan, Axford, Little, Murphy Grene and Gormley (2008) and Unutkan (2003) showed in their studies that primary school readiness of children receiving preschool education is higher.

5. Conclusions

Consequently, there is a considerable difference between mothers' opinions on school readiness of children and the condition of receiving and not receiving preschool education in terms of readiness from mother's viewpoint, intellectual-linguistic, social-emotional, physical development sub-dimensions and general total points. Future studies can be done in order to demonstrate the importance of preschool education, and its effects on developmental stages of children especially in their school readiness skills.

References

- Downer Jason T., Pianta Robert C. (2006). Academic And Cognitive Functioning in First Grade: Associations With Earlier Home And Child Care Predictors And With Concurrent Home And Classroom Experiences. *Social Psychology Review*, 35 (1), 11-30.
- Erkan, Semra, Kirca, Aylin (2010). Examining the Effect of Preschool Education on School Readiness of Primary School First Grade Students Hacettepe University Journal of Faculty of Education, 38, 94-106.
- Fontaine, Nancy S., Torre, Dee Linda and Grafwallner, Rolf (2006). Effects Of Quality Early Care On School Readiness Skills Of Children At Risk. *Early Child Development And Care*, 176 (1), 99–109.
- Kiernan Gemma, Axford Nick, Little Michael, Murphy Cliano Greene Sheila, Gormley Michael (2008). The School Readiness of Children Living in A Disadvantaged Area in Ireland. *Journal of Early Childhood Research*, 6 (2), 119-114.
- Kotil, Çiğdem (2005). *The Relationship between Mother's Views of Child's School Readiness and School Readiness Levels of Children*, Master's Thesis, Marmara University, Institute of Educational Sciences, İstanbul.
- Senemoğlu, Nuray (1994). Which Competence Must Preschool Education Bring?. *Hacettepe University Journal of Faculty of Education*, (10), 21-30.
- Umek Ljubica Marjanovi ; Kranjc Simona; Fekonja Urška, Bajc Katja (2008). The Effect Of Preschool On Children's School Readiness. *Early Child Development and Care*, 178 (6), 569–588
- Unutkan, Özgül Polat (2003). *Development and Standardization of Marmara Primary School Readiness Scale*, Doctoral Thesis, Marmara University Institute of Educational Sciences, İstanbul
- Unutkan, Özgül Polat (2007). Starting Primary School First Grade: Child-Teacher and Parents (Editor. Ayla Oktay, Özgür Polat Unutkan). *A General Look at Primary Education Period*. İstanbul: Morpa Publications, 27-40.
- Yavuzer, Haluk (2006). *School Age Children with Educational and Developmental Features (Twelfth Edition)*. İstanbul: Remzi Bookstore.

THE EDUCATION OF AN INSTRUMENTALIST IN ITALY PAST EXPERIENCE AND NEW HORIZONS

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Abstract

Instrumental teaching in Italy has a long and impressive historical tradition which is significantly linked to the development of the Music Conservatoires. Taking an analytical approach which is both historical and musical, the aims of this research are as follows:

a) To highlight, by way of an investigation which compares historical aspects and data from contemporary institutions, the way in which the abilities and skills of an instrumentalist develop.

b) To assess the relevance of the education received for the reality of the contemporary professional music scene.

c) To identify salient factors in the music education system, foreseeing appropriate educational and institutional strategies necessary to overcome them.

We have used different modes of investigation according to the various aims of the research. The questionnaire asked teachers to choose from and evaluate (using a numerical scale) a list of skills considered fundamental both to the instrumentalist and in general. Amongst the abilities proposed as being particularly relevant are: faithfulness to the score, expressiveness, technical ability and motivation. From these identified abilities, the teachers then chose three, attributing to each a number indicating the level of importance (3 for the most important and 1 for the least important). Analysis of the data reveals a profile of the Italian instrumentalist which has much in common with the Romantic model of the virtuoso musician.

Keywords: *Education, instrumentalist, Italian Conservatoires, historical contexts.*

1. Theoretical background

Since the 19th century, the Italian Music Conservatoires have performed a crucial role in the education of professional musicians, performers and composers alike. Founded initially as educational meeting places for less fortunate groups of the population (lacking wealth, station etc.), they immediately became educational institutions of the highest level, thanks to the useful work which they carried out. There have been two further important moments of reform: Law 508 in 1999 and its successive modifications. These have brought us to the realization of a composite scheme where, within an established statutory framework, each conservatoire can design their own curriculum.

2. Method

In the first section we placed the subject matter within its historical context; the second section is based instead on analysis of data obtained from an anonymous questionnaire presented to a sample of 88 teachers working in conservatoires in Northern Italy. The questionnaire consisted of 8 items; 3 were general and 5 were more specific.

3. Data and Results

The historical analysis of the first section gives a context for the statistical analysis which will now follow. It has shown that, amongst the many aims of those institutions which provide professional musical education, there is ongoing work to keep up with the demands of music production; to teach technical skills which are useful to the ever-changing language of composition. This places us to a point where we can consider the questionnaires presented to sample of 88 teachers. These teachers expressed their views by considering different contexts of evaluation and choosing from amongst a list of abilities considered central to the professional self-identity of a musician.

The questions required a choice and valuation of three of these abilities with reference to four typical contexts of assessment: during an exam, assessing a period of learning, giving the maximum mark, giving a very low mark. They assigned the number 3 to the ability which they found most important in their institutional experience. They assigned the numbers 2 and 1 to a further two abilities which they considered suitable but less important. Ultimately, in the eighth question, they were asked to put 7 abilities in order of preference, assigning numbers in order of decreasing significance from 7 to 1 according to their experience and opinion. In the context of an exam, the choices were distributed as follows: 19% rated the ability of precision in performance, 25% rated expressiveness, 28% technical ability and 9% motivation. The remaining choices allocated low values to more institutional aspects such as the curriculum, artistic performances and disciplinary issues. In the context of assessing a period of learning, the choices of precision, expressiveness and technical ability were slightly reduced to 17%, 20% and 22% respectively, whilst the choice of motivation rose significantly to 19%.

The data referring to giving the maximum mark (e.g. 10/10) shows a similar situation in the case of precision (17% of choices) and expressiveness (20%). The choice of technical ability decreased to 15%. However, there was a significant rise in the choice of personal characterization (16%) and a small allocation of choices to knowledge of musical styles (9%). In the case of giving a very low mark (e.g. 4/10), the choices were grouped around the primary three abilities: precision (25%), expressiveness (12%) and technical ability (22%). The choices which were most frequently rated were undoubtedly those of precision in performance, expressiveness, technical ability, motivation and personal characterization.

Data from the question requiring arrangement (in descending order of importance) of all the abilities shows a distribution consistent with the results obtained from the previous 4 questions. 42% of teachers assigned the number 7 (the highest in the scale) to precision in performance, 23% to expressiveness, 16% to technique, none to knowledge of different musical styles and 5% to personal characterization.

Motivation obtained the majority of maximum value ratings only in the assessment of a period of learning. Meanwhile personal characterization reached its peak point in the context of giving the maximum mark, but this was still only 15% of the total choices. One result which is particularly relevant is the absence of ratings given to knowledge of musical styles. In fact, this ability was allocated only 5% of maximum value ratings in the context of giving the maximum mark to students, and this percentage drops to 1% in the context of giving a very low mark. Furthermore, not one teacher rated this skill as most important in the descending ranking of abilities and skills. In any case this data requires further research given the assertion that in very few cases does a maximum mark indicate adequate maturity in historical performance practice. A second important consideration results from analysis of the data pertaining to the choice of personal characterization. Whilst, in the context of giving the maximum mark to students, the teachers chose it 16% of the time, when asked to place it in the decreasing ranking according to their experience, the ability of personal

characterization is almost absent from the higher part of the ranking (7, 6, 5) and is barely present in the lower part.

The choices made by teachers who have been working for more than ten years are clearly grouped around technical ability in the three contexts of: exams, assessing a period of learning and giving a very low mark. Only in the case of giving a maximum mark is expressiveness considered more important than technical ability.

4. Conclusions

Taking an overview of the situation from 1860 up until the recent reforms, we can see how technical musical skills specific to individual instruments and/or musical disciplines have determined the overall structure of the education framework.

The musician formed by our current institutions seems to be fundamentally equipped with precise performance ability, good communication and an adequate level of technical ability, but falls short of a higher artistic profile/ideal, in which correct practice of style and character are adequately developed. On the one hand, therefore, this practice is rooted in the 18th century tradition of the virtuoso, elevating the abilities which have always distinguished this discipline: precision, ability in communication and technical brilliance. On the other hand it does not cultivate or value the artistic nature of the profession, which continues to rely on talent and on experiences not included in the educational curriculum of the institution. The teaching of a specific artistic discipline is therefore the most important aim of the Institution which concerns itself with educating musicians.

Comparing the profile which emerges from our data with that of the musicians educated in the institutions of Verdi's, we can see that the pressure of the demands of the 'musical market' has always been very much present. However this is achieved today, through a more mature pedagogical approach, through the application of objective curricula. These finely individuate abilities and skills of the student and also have the intention of creating a unified standard of educational course in line with the requirements of the 'Process of Bologna'. Our educational institutions have not always proposed professional models which take account of a social and musical scene which is profoundly changed. Also it may be that technological advances and changing conditions have rendered the figure of the professional musician anachronistic. This could be the subject of future studies. In any case, this research puts forward an important reflection on institutional qualitative standards, on professional profiles and on the place of the Italian educational system in a European and worldwide context.

References

- AEC (2010) Admission and assessment in higher music educations, Utrecht: AEC.
 AEC (2008) Document d'orientation - Vers un processus de Bologne des disciplines après 2010, Utrecht: AEC,.
 Bressers, H. (2008) Handbook How to Develop a Joint Programme in Music, Utrecht: AEC.
 Cox, J. (2007) L'Elaboration et l'évolution du cursus dans l'enseignement musical supérieur, Utrecht : AEC.
 Montemorra Marvin, R. (2010) Verdi. The student-Verdi the teacher, Parma: Istituto Nazionale di Studi Verdiani.
 Prchal, M. (2008) 'A Guide to Third Cycle Studies in Higher Music Education', in: European University Association Bulletin, Brussels

KNOWING HOW STUDENTS BUILD CONCEPTUAL KNOWLEDGE: A STUDY OF MATHEMATICAL INFINITY

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Abstract

The concept of infinity is often confusing to students. This research investigates different concepts in adolescent and adult on the mathematical infinity. With the hypothesis that the notion of infinity is constructed which occurs through successive levels, the theoretical background is based on Constructivism. An interview and three experiments were created with concrete materials that lead an argument to the infinity state. The interview is used to observe how the people concerned deals with the difference between very large numbers and an infinity one. Furthermore, the abstraction is considered when carrying out the task to reduce the size to half when the materiality no longer exists. The methodological reference is the Clinical Interviewing. Data analysis categorizes the various notions of mathematical infinity. Based in how the subject interacted with the proposal activity the three following categories have being proposed: Does Not Grant The Infinity: The reasoning is sparse and attached to the concrete world; Existence Little Conceivable: Infinity means something big or not known; Infinity Cannot Be Measured: Thinking is disconnected from the material world coming to abstract, the subject's thought is able to understand that infinity is not a real number but an idea. The results indicate that the notions of mathematical infinity are built independently of the age, education level or work expertise. To be successful in teaching a specific content is crucial to know the mathematical notions of our students.

Keywords: *Mathematics learning, infinity, Constructivism, human development.*

1. Introduction

For centuries the concept of infinity has been one of the most fascinating and mysterious ideas to provoke mankind and the minds of scholars. What does the concept of infinity mean in mathematics? Do people who are not specifically related to mathematics, have some notion of what infinity is?

This research aims to investigate different notions of the mathematical infinite in subjects of various ages, regardless of their level of education or their professional experience. Furthermore goal to discover and understand the mental processes developed by interviewees when solving problems which lead to infinity. We suppose that if the subject has already constructed cognitive structures to conceive and use this concept, then even those with an elementary understanding can also comprehend the most refined ideas about infinity. This research addresses how people learn within a particular context. Therefore, the explanations that the subjects give about what they think is based on how their thinking, is based on how their thinking is organized.

2. The theoretical background

Constructivism is an epistemology to reveal how knowledge is constructed in the brain of human beings when information comes into contact with existing knowledge that has been developed by experiences. Furthermore, the goal of the

theory is to explain the mechanisms and processes by which the subject develops into an individual who can reason and think using hypotheses.

Piaget's theory of cognitive development suggests that humans cannot be given information, which they instantly comprehend. Conversely, learners must construct their own knowledge through experience. Experiences allow them to create schemas mental models of the world. These schemas are enlarged, changed and refined through two complimentary processes: assimilation and accommodation. Assimilating provokes an individual to incorporate new experiences into the old experiences. Accommodation, on the other hand, is reformulating the world and new experiences into the mental capacity which is already present (Piaget, 1970).

The term equilibration defines the overall interaction between assimilation and accommodation. The interactionist theory of Piaget states that knowledge construction occurs through the relationship between subject and object, and that this modifies both. By interacting with abstract objects, the ideas are manipulated in the subject's head, without dependence on concrete manipulation and so the ability to think about abstract ideas and hypothetical issues becomes possible (Inhelder & Piaget 1958).

To comprehend the meaning of infinity, the individual needs to develop the ability to think in an abstract manner, the ability to combine and classify items in a more sophisticated way, and the capacity for higher-order reasoning.

3. Mathematical infinity

Infinity is a concept of something that is unlimited and endless in its origin, whereas infinity is a philosophical idea (Abbagnano, 1961). Three main types of infinity may be considered: the mathematical, the metaphysical and the physical. In mathematics it is important to be conscious that infinity is not a real number, it is an idea of something without an end.

The mathematician Georg Cantor towards the end of the 19th century developed a more detailed way of defining mathematical infinities. Cantor recognized that there was a smallest type of infinity: the unending list of natural numbers 1, 2, 3, 4, 5, He called this a countable infinity (Kouremenos, 1995). The first infinite set which we are acquainted with is the set of natural numbers. Cantor showed that there are also other types of infinity that are in some sense infinitely larger because they cannot be counted in this way. One such infinity is characterized by the list of all the real numbers, which cannot be counted.

4. Methods

The methodological reference is Clinical Interviewing. The interviewer proposes a problem to solve, something to explain or just something to think about and the interviewee is encouraged to engage with it (diSessa, 2007). The goal of a clinical interview is to allow the interviewee to reveal his/her natural way of thinking about the situation at hand.

An interview and three experiments were created with concrete materials. The first steps were the realization of Infinity Interview with 13 questions, which was used to observe how the subject thought about the very large numbers and finally the infinite numbers in different situations. The second steps were the realization of the three concrete experiment: (1) The experiment of square: which consists of cutting a square of paper (30cm x 30cm) several times, making new smaller squares. The possibility of cutting tends to result infinitely large number and the size of the square tends to result in infinitely small numbers. The number of divisions that can be done without materiality is infinite, it would be the same as if he had imagined it with thought rather than action. (2) The experiment of sand: Consists of putting some sand in a bottle using a spoon. The result of this activity is a very large number but it's finite. The subject can just make an estimate of the result. (3) The experiment of circle: Consists of drawing the radius of

a circle made of wood. When the subject draws the radius of the circle, they may notice that it always is possible draw one more because they are infinite. Thirteen participants were questioned, each with different ages, different levels of education and different professions. The data were collected using a recording device.

5. Results

Data analysis categorizes the various notions of mathematical infinity. Based on how the subject interacted with the proposed activity and the similarities in the organization of reasoning, the three following categories have been proposed: *Does Not Grant The Infinity*: This is the elementary level and the people concerned did not concede the infinity. Their reasoning is sparse and attached to the concrete world. They don't remove the thought from the concrete and supported, for example, that there was no number between 0 (zero) and 1 (one). Their thinking is based on intuition but is still not completely logical. They cannot yet grasp more complex concepts such as the size of the universe or the finite number of inhabitants in a city. *Existence Little Conceivable*: The intermediate level includes people who were able to adopt alternative viewpoints how for example, there could be infinity numbers but affirm that a river hasn't ended. The thinking still can't tackle a problem with several variables in a systematic way, for whom infinite means impossible to say, something big or large and affirm, for example, which in a glass full of sand there were infinite grains. *Infinity Cannot Be Measured*: The first level refers to people whose thoughts can be abstract and disconnected from the material world. The subject thoughts comprehend that infinity is not a real number but an idea and are able to understand, for example, that there are infinite rays of a circle. They constructed the ability to think in an abstract manner, the ability to combine and classify items in a more sophisticated way, and the capacity for higher-order reasoning.

6. Conclusions

To conceive the infinity requires the subject to think logically to understand and use principles of scientific thinking such as hypothesis-testing, inference, deduction and ruling out alternative hypotheses (Inhelder & Piaget 1958). The ability to think about the unseen and to consider a range of possibilities are essential conditions to apprehend this concept. The results indicate that the notions of mathematical infinity are built independently of age, education level or work expertise. The fact that some attended university does not mean that their notion of infinity was more accurate than those who didn't go. Piaget's theory of constructivism argues that people produce knowledge and form meaning based upon their experiences.

To be successful in teaching a specific content, it is crucial to know the mathematical notions and thought of our students. The appropriate methodology to teach the infinite was not a focus of this study, and thus requires further research.

References

- Abbagnano, N. (1961). *Dizionario di Filosofia*. Torino: Utet.
- diSessa, A. (2007): An Interactional Analysis of Clinical Interviewing. *Cognition and Instruction*, 25(4), 523-565.
- Inhelder, B. & Piaget, J. (1958). *De la logique de l'enfant à la logique de l'adolescent*. Paris: Presses universitaires de France.
- Kouremenos, T. (1995). *Aristotle on mathematical infinity*. Stuttgart: F.Steiner.
- Piaget, J. (1970). *Genetic epistemology*. New York: Columbia University Press.
- Scoular, S. (2005) *The Unlimited Infinite: Exploring the Philosophy of Mathematics*. Florida: Universal Publishers.

WILL THE BOLOGNA PLAN BE ABLE TO CREATE EDUCATION OF GOOD QUALITY?

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Abstract

New educational legislation has replaced teaching of detailed contents to acquisition (or improvement) of several skills by student.

Therefore the usual didactic act into university classroom, purely concentrated on activity of transmitting the knowledge, will be gradually given up.

This work is trying to overcome the Bologna Plan application for two mathematical subjects to first course in the ETS Agronomics Engineering of Madrid (E.T.S.I.A.), which belongs to the Technical University of Madrid (U.P.M.).

Because of our students often give those subjects up earlier, a proper planning of teaching and learning is necessary. In that work we can prove that selection of disciplines is less important than the proper choice of a way of approaching or a good choice of proper method and later how training students for better practical using of them.

We want to try out a work method to achieve very flattering results, making the most advantage of the time by doing exercises, problems, questions, tests, exams into the classroom. And we can reward every individual or collective effort made and our students can motivate and be encouraged to study these disciplines. And they could like a lot Mathematics. But at present we can still offer no results.

Consequently there will be a new kind of tests. Students will need to use not only the memory but understanding, creativity, practical applications...

Keywords: *Learning, teaching, education, innovation, mathematics.*

1. The entrepreneurship education of the European Bologna Plan

Three years ago, the E.T.S. Agronomics Engineering of Madrid (E.T.S.I.A.) instituted the Bologna Plan but the results of previous plans have not still overcome.

New education must be up-to-date, based on acquiring professional and academic skills to obtain greater opportunities to students of starting earlier their professional work. This new style must be broader, including some attitudes and aspects of professional career, and in such way the concept of superior education can be returned to an original "Holistic Learning", as focusing on to the whole learning procedure and not on its parts.

Despite a sensible choice of syllabus is still being relevant but it has become less important because of its foreseeable brief applicability in a so fast changing world, therefore any university teacher's principal objective has to be that his students can know and learn the practical applications which are in current use at the time.

2. Application of Bologna Plan for "Calculus I" and "Linear Algebra"

"Calculus I" (September - January) and "*Linear Algebra*" (February - June) are two mathematical subjects of first course in E.T.S.I.A., where both achieve a certain level, however lacking necessary appropriate precisions of a science degree at

present. For reference both subjects are considered suitable to learn and apply to agricultural and environmental problems of science and engineering.

Both subjects provide a “Schedule of students’ activities of work” where different types of activities, that are going to be carried out each week, are briefly described, and besides, the time to spend for every one is shown.

Both Curriculum and “Schedule of students’ activities of work” are available on web using MOODLE from beginning to end of term, and student knows them since first few days of September. Student can access to a detailed content of each lesson.

For both subjects the Department has proposed two reliable textbooks which will be enough to achieve our purpose. In addition a *Calculus problems collection* and a *Linear Algebra problems collection*, classified by lessons and available on web using MOODLE, are employed.

However that will also depend on previous student’s studies or works in Mathematics and most our students have often given up on passing and on assisting at classes.

Calculus I

- A main textbook: Stewart J. “*Calculus, Concepts and Contexts*”. (2005). Brooks Cole. 3rd edition.

- Reference or complementary textbooks for unusual questions: Larson R., Hostetler R.P., Edwards B.H. (2006) “*Calculus with Analytic Geometry I*”. Houghton Mifflin Company. 8th edition. Mc Graw-Hill (Spanish edition).

Linear Algebra

- A main textbook: Larson-Edwards-Falvo. (2004). “*Elementary Linear Algebra*”, First published by Houghton Mifflin Company, Boston, Massachusetts, United States of America. (5th spanish edition. Pirámide). Selected for covering the whole subject, except *Systems of linear differential equations* and *Numerical Calculus*.

- Reference or complementary textbooks for unusual questions or applications: “*Introductory linear algebra: an applied first course*”, 8th ed., Kolman, B.; Hill D.R. published by Pearson Education, Inc., publishing as PRENTICE HALL, INC., 2005. And 8th Spanish edition 2006. Pearson Prentice Hall. (For *Systems of Differential Equations*).

Numerical Calculus. M.E. G^a Mouton, C. Vega Lombana. (1999). Madrid. Published Notes by ETSIA

3. A new planning for teaching and learning

Last three years, though we had been spending the majority of the class time explaining concepts and lessons while students were taking notes, or even we have been doing a class-wide activity with the students, they had not understood and had not comprehended the concepts before they left the classroom with their homework assignments. Therefore authors want to make more profitable the fixed timetables into or out classroom.

The application could be made in a little different way in several of Engineering Schools, such as Industrial or Telecommunications, and perhaps through another subjects, including Statistics; however this application provides a very usefully method. One way to create more class time and not to lose education time will be to have them to take notes at home and to do the work in class.

That requires be careful about what we do, because this effect can be useful or very inappropriate. It depends on the kind of the matter to be considered. If matter is hard to understand we can spend more time and efforts to make student’s workload lighter, on the contrary if matter is not very difficult, an average student will be able to study it easily. Later any doubts or problems will be clarified by teacher.

Therefore, the selected textbooks, such as the aforementioned ones, have to be very adapted to a first or previous study (not during class schedule).

Teacher can make feedback (*scoring rubrics*) in the classroom for creating

enough information (self-assessments, assessments to classmates, etc.) and other way could be that students make a summary of studied theory, which will be useful for helping them to assimilate. Therefore student ought to do several profitable actions, such as to study thoroughly a lesson for summarizing it accurately, and afterwards writing it.

Students must be thoroughly instructed to write and to make those summaries - with a certain good level of mathematical formulas, calculations and diagrams, etc. - so as they can be understood by the student himself and also by anybody who could read it. Students must know what degree of precision and briefness is necessary, and what style (manner of speaking and writing) is demanded, and also to be instructed on use of diagrams for those tasks.

We will probably achieve other benefits like this students are less frustrated and disruptive in class because there is someone on hand to help one-on-one, and a much larger percentage of assignments are completed and to a much higher quality.

4. A credit system (ECTS) for the assessment of study performance

Teacher can reward student for his efforts of memory, understanding, creativity... in order to motivate and encourage him/her to work usefully each lesson, enjoying it.

Student knows as soon as possible that examiner will allow him consult any kind of books, notes or problems in order to increase attention, interest, effort and attendance throughout teaching hours, and to avoid some useless efforts of memory, product of a hurried study before an exam.

5. Conclusions

Nowadays the selection of a syllabus is less important than the choice of, both together, a suitable way of approaching them, and of a manner for training students for their practical use and therefore a work method to achieve better results teaching has to be not aimed at preparing for exams but at employing usefully human resources.

At present time authors are shifting to these ways, and later they will be able to present results, and adjust procedures.

References

- World Conference on Higher Education. (5-9 October 1998) *Higher Education in the Twenty-First Century: Vision and Action*. Paris. UNESCO. http://www.unesco.org/education/educprog/wche/declaration_eng.htm
- World Conference on Higher Education. (5-8 July 2009). *The New Dynamics of Higher Education and Research for Societal Change and Development*. ED.2009/CONF.402/2. Paris. UNESCO. www.unesco.org/...2009/FINAL%20COMMUNIQUE%20WCHE%202009.pdf
- European Commission. *Education&Training. Higher Education*. ("n.d."). http://ec.europa.eu/education/index_en.htm
- Altbach P.G., Reisberg L., Rumbley L.E. (2009). *Trends in Global Higher Education: Tracking an Academic Revolution*. World Conference on Higher Education. Paris. UNESCO. <http://www.uis.unesco.org/Library/Documents/trends-global-higher-education-2009-world-conference-en.pdf>

RELATIVE EFFICIENCY OF EDUCATION SECTOR IN THE NEW EU MEMBER STATES: THE CASE OF PRIMARY EDUCATION

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Abstract

The paper joins the efforts of other scholars in investigating education efficiency by applying a non-parametric methodology. Most importantly, Data Envelopment Analysis (DEA) technique is presented and then applied to the wide range of the EU and OECD countries, including new EU member states, to evaluate technical efficiency within the selected education sector in 1999-2008 period. The empirical results show that within a selected group of EU member states Denmark, Hungary and Portugal are seen as most efficient in primary education sector. In addition, some countries come very close to the frontier (e.g. Czech R. and Italy), while the other countries are further away and therefore less efficient (e.g. Turkey and Croatia). On the other hand, the least efficient countries (among new EU member states) are Slovenia, Poland and Latvia. The empirical findings also point out that the new EU member states are relatively more efficient than non-EU countries in the sample, however, they show relatively low efficiency against the old EU-member states.

Keywords: *Efficiency, Primary Education, DEA, New EU Member States, OECD*

1. Introduction and Objectives

The purpose of the paper is to present and apply Data Envelopment Analysis (DEA) technique to the wide range of the EU and OECD countries, including Central and Eastern European (CEE) countries¹, to evaluate technical efficiency of the primary education. The importance of examining public sector expenditure efficiency is particularly pronounced for emerging market economies where public resources are normally insufficient. When services are publicly provided, performance measurement becomes an inevitable management tool because when inefficiency continues, the constituents of that inefficient unit suffer. The government needs benchmarking tools to provide incentives to good performing sectors and to induce inefficient sectors to perform better. However, the focus of the paper is not on how to cut (public) expenditures, but rather more on investigating potential reserves to increase the value for money of public spending, i.e. how to make the most of limited public (and private) resources.

2. Design and Methods

The way in which the DEA program computes efficiency scores can be explained briefly using mathematical notation (adapted from Ozcan, 2007). The variable returns-to-scale (VRS) envelopment formulation is expressed as follows:

¹ In this paper, the group of Central and Eastern Europe (CEE) consists of Bulgaria, Cyprus, Czech R., Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

$$\begin{aligned} \text{VRS}_p(Y_1, X_1, u^1, v^1): \min &-(u^1s + v^1e) \\ Y\lambda - s &= Y_1 \\ -X\lambda - e &= -X_1 \\ \mathbf{1}\lambda &= 1 \\ \lambda \geq 0, e \geq 0, s \geq 0 \end{aligned}$$

For decision making unit 1, $x_{i1} \geq 0$ denotes the i^{th} input value, and $y_{r1} \geq 0$ denotes the r^{th} output value. X_1 and Y_1 denote, respectively, the vectors of input and output values. Units that lie on (determine) the surface are deemed *efficient* in DEA terminology. Units that do not lie on the surface are termed *inefficient*. Optimal values of variables for decision making unit 1 are denoted by the s -vector s^1 , the m -vector e^1 , and the n -vector λ^1 .

Similar to the former empirical literature (see Afonso et al. (2005, 2006), Afonso and St. Aubyn (2005, 2006), Jafarov and Gunnarsson (2008), Cherchye et al. (2010), etc.) in this empirical analysis the data set to evaluate education sector efficiency (at different levels) includes input data, i.e. (public) expenditure per student, primary (% of GDP per capita) and output/outcome data, i.e. school enrolment, primary (% gross), teacher/pupil ratio in primary education and primary completion rate, total (% of relevant age group). There are twenty-eight countries included in the analysis (selected EU (plus Croatia) and OECD countries). In our case the data set for all the tests in the study includes an average data for the 1999-2008 period (including PISA 2006 average scores) in order to evaluate long-term efficiency measures as education process is characterized by time lags in selected EU (plus Croatia) and OECD countries. The program used for calculating the technical efficiencies is the *DEA Frontier* software. The data are provided by Eurostat, OECD, UNESCO and the World Bank's World Development Indicators database.

5. Discussion

When looking at the education results and applying the DEA efficiency frontier technique within a selected group of EU/OECD countries and Croatia to measure efficiency of primary education, Denmark, Hungary and Portugal are seen as most efficient. The efficient countries are also Greece, Iceland and Romania, however, their primary expenditures per student (in % of GDP) is very low and have averaged less than 12% (the EU/OECD average is 18.7% in the considered period). One can also see that some countries come very close to the frontier (e.g. Czech R. and Italy), while the other countries are further away and therefore less efficient (e.g. Turkey and Croatia) (see Table 1). Some less efficient countries should significantly decrease their input (primary expenditure per student) (e.g. Slovenia from 27.0% to 22.0%) and/or increase their outputs, i.e. school enrolment (e.g. Ireland and Poland), primary completion rate (Belgium) and teacher-pupil ratio (Turkey and Ireland) in order to become efficient.² Interestingly, the CEE countries are, in general, relatively more efficient than non-EU countries in the sample, however, they show relatively low efficiency against the old EU-member states.

² The average output efficiency score for primary education is 1.050, which means that the average country could increase the outputs/outcomes for about 5.0% if it were efficient. The results also confirm our expectations, that larger public sector increases the inefficiency in a primary education.

Table1. The Relative Efficiency of the EU Member States (plus Croatia) and OECD Countries in Education (Distribution by quartiles of the ranking of efficiency scores)

Level	I. quartile	II. quartile	III. quartile	IV. quartile
Primary education	Denmark Greece <i>Hungary</i> Iceland Portugal <i>Romania</i> <i>Czech Republic</i> Italy	Spain <i>Slovakia</i> Germany Norway Austria Finland	<i>Lithuania</i> Netherlands Ireland France <i>Bulgaria</i> <i>Cyprus</i> <i>Estonia</i> United States	<i>Slovenia</i> <i>Poland</i> <i>Latvia</i> Turkey Croatia Sweden Belgium

Notes: Twenty-nine countries are included in the analysis (EU-27, OECD and Croatia). The CEE countries are presented in italic. Sources: World Bank, 2011; UNESCO, 2011; own calculations.

6. Conclusion

Spending on primary education system represents an important tax burden on taxpayers. The efficiency with which inputs produce the desired outputs is thus an important public policy issue. In this study, an attempt was made to measure the relative efficiency of primary education across selected OECD and EU countries by using data envelopment analysis (DEA) in a VRS framework. The research results suggest that Denmark, Hungary and Portugal are seen as most efficient countries and can serve as benchmarks for their efficient use of primary education resources. On the other hand, Slovenia, Poland and Latvia are the worse efficiency performers among the new EU member states. The empirical results also suggest that, in general, new EU member states are relatively more efficient than non-EU countries in the sample, however, they show relatively low efficiency against the old EU-member states.

References

- Afonso, A., Schuknecht L. and Tanzi, V. 2005. Public Sector Efficiency: An International Comparison. *Public Choice*, 123 (3-4), 321-347.
- Afonso, A. and St. Aubyn. 2005. Non-parametric Approaches to Education and Health Efficiency in OECD Countries. *Journal of Applied Economics*, 8 (2), 227-246.
- Afonso, A. and St. Aubyn. 2006. Cross-country Efficiency of Secondary Education Provision: a Semi-parametric Analysis with Non-discretionary Inputs. *Economic Modelling*, 23 (3), 476-491.
- Afonso, A., Schuknecht L. and V. Tanzi. 2006. Public Sector Efficiency: Evidence for New EU Member States and Emerging Markets," European Central Bank, *Working Paper Series* 581, European Central Bank: Frankfurt.
- Afonso, A., Schuknecht L. and V. Tanzi. 2008. Income distribution determinants and public spending efficiency. *Working Paper Series* 861, European Central Bank: Frankfurt.
- Cherchye, L., De Witte, K., Ooghe E. and I. Nicaise 2010. Efficiency and equity in private and public education: nonparametric comparison. *European Journal of Operational Research*, 202 (2), 563-573.
- Jafarov, E. and Gunnarsson, V. 2008. Government Spending on Health Care and Education in Croatia: Efficiency and Reform Options; *International Monetary Fund; IMF Working Paper*, WP/08/136.
- Ozcan, Y.A. 2007. *Health Care Benchmarking and Performance Evaluation: An Assessment using Data Envelopment Analysis (DEA)*. New York: Springer.
- Unesco. 2011. Data Centre, Montreal: UNESCO Institute for Statistics, *On-line*.
- World Bank. 2011. World Development Indicators, *On-line*.

PARTICIPANTS PERSPECTIVE OF THE FAS REDUNDANT PLACEMENT SCHEME

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Abstract

The aim of this study is to gather and analyze feedback from participants of a scheme which was put in place in the early stages of the Irish economic recession to provide work placements to redundant Apprentices. As part of the research for this paper a series of qualitative interviews were conducted with participants of the FAS Redundant Apprentice Placement Scheme (RAPS). FAS is the authority which organizes and administers the Statutory Apprentice Scheme in Ireland. The scheme detailed in this study was put in place to aid Apprentices who has been made redundant, to complete phases 3, 5 and 7 of their Apprenticeship. These are three of the four "on the job" phases of their training. A weekly allowance is paid to participating Apprentices for the duration of the placement. Redundant Apprentices and Employers must meet a specific set of criteria to qualify for participation in the scheme, these are designed to protect the participants and to prevent unscrupulous employers from using the scheme as a method of accessing cheap labour. A selection of themes were identified in the data gathered during the interviews, these were separated and grouped under specific headings. The analysis of the data gathered during these interviews provides an interesting insight into the learning experiences of the participating redundant apprentices.

The findings highlighted that a large proportion of the participants had many positive learning experiences, however they also indicated that they felt that they would have benefited more from the scheme if more opportunities were available to engage in a greater variety of learning tasks. This paper would suggest that the participating Apprentices could learn more if they were placed with a greater variety of companies, this could provide them with a broader range of learning experiences.

Keywords: *Apprentice Education, Work Placement, Workplace Education.*

1. Introduction

The subjects of this study were Apprentices studying at the College of Engineering and the Built Environment in the Dublin Institute of Technology, Ireland [1]. The Apprentices were studying in a variety of disciplines such as Metal Fabrication, Sheetmetal Work, Aircraft Maintenance, and Bricklaying. This study sought to gather and analyze feedback from these students who were participants of a scheme which was put in place in the early stages of the Irish economic recession to provide work placements to redundant Apprentices. A series of qualitative interviews were conducted with participants of the FAS Redundant Apprentice Placement scheme (RAPS)[2]. FAS is the authority which organizes and administers the Statutory Apprentice Scheme in Ireland. The scheme detailed in this study was put in place by the then Minister for Social Protection Joan Burton in late 2008. The scheme initially focused on the trades of Carpentry and Joinery, Plastering, Plumbing, Electrical and Bricklaying. Its purpose was to aid Apprentices who has been made redundant, to complete phases 3,5 and 7 of their Apprenticeship. These are three of the four "on the job" phases of their training. Both redundant Apprentices and employers must meet a specific set of criteria to qualify for participation in the scheme. These were put in place

to protect the Apprentices from unscrupulous employers and to ensure the employers had adequate staff and facilities to allow the Apprentice to satisfy their learning needs for the phase in question. Participants in the study were interviewed and the data gathered was analyzed. A selection of themes were identified in the data gathered, these were separated and grouped under specific headings. The analysis of the data gathered during these interviews provides an interesting insight into the learning experiences of the participating redundant apprentices.

2. Rationale

This small scale research project stemmed from an informal discussion between the three authors. The discussion centered on the unfortunate circumstances in which many of their students had found themselves due to the dramatic downturn in the Irish economy. Many had to wait for long periods to secured placements on the RAPS scheme. Following their period of training on the scheme they had been called to attend the “off the job phases” of their Apprenticeships at our college. During informal conversations with these students while they were attending college, they highlighted some aspects of the RAPS scheme which they found conducive to their learning and some which they did not. Although they were extremely grateful for the opportunity to progress through their training, they indicated that they felt that some elements of the scheme could be improved. As a group, the authors considered this case to be a worthy of investigation. The authors set about the task of designing the project, gathering and analyzing the data, and presenting the findings.

3. Research Design

This research has been carried out from the position of a pragmatic world view. Pragmatists focus on the research question or situation and allow it to inform the procedures, methods and techniques of the research that best meet their needs and purposes. Creswell, (2009) [3]. The case study approach was best suited to this design of research methodology. Qualitative interviews were conducted with apprentices who took part in the RAPS Scheme.

4. Student Interviews

The authors selected a series of open ended questions which they considered would meet the aim of the project. Some of the participants were interviewed in person, and some over the telephone. Among the questions asked were some general questions about the apprentices participation, such as “Do you think you could have progressed your apprenticeship without the RAPS scheme?” and, “Did your experience on the scheme improve your chances of finding employment? If yes how?” Some more focused questions were also included which relating to the learning required for the completion of the on the job phases of the apprenticeship. They enquired as to whether the participants were satisfied that all of the learning outcomes met? The participant was requested to elaborate on their answer to this question, and were asked for suggestions as to how they felt the scheme could be improved. It should be noted that seventy percent of the learning outcomes for the phase must be achieved before the apprentice can progress to the next phase. The interview enquired as to whether all one hundred percent of the learning outcomes were covered during the on the job phases.

5. Analysis, Findings and Recommendations

Analysis

The methodology for the coding the qualitative data into themes, which is championed by Taylor and Gibbs (2010) [9], was selected for the analysis of the qualitative data for this research. The notes taken during the student interviews were collated and the responses to each individual question were extracted and grouped together in a separate document generated specifically for analysis of the data. This facilitated the analysis of the data one question at a time. Sections of text from the collated notes were highlighted and identified with common key words which when grouped became the codes. These codes were subjected to further scrutiny and were assembled under the four main emerging themes.

Some findings:

90% of the participants indicated that they felt that they would not have been able to progress in their apprenticeship without the aid of the RAPS scheme.

85 % indicated that they had many positive learning experiences while involved with the scheme and greatly appreciated the opportunity to learn and progress, however 70% of the participants indicated that they felt that not all of the learning outcomes were covered during their on the job phases.

80% indicated that they felt better equipped to find employment having participated in the scheme. Many indicated that participation in the scheme helped them to acquire the essential skills required to be a competent tradesperson. This scheme ultimately equipped them to get the formal qualifications required to travel abroad to find employment.

Some recommendations:

If it was possible to arrange the RAPS scheme so that the participants spent their on the job phases with greater variety of employers, it might have resulted in more, if not all of the learning outcomes being met.

Some participants indicated that where employers could not be found to accommodate apprentices the state should endeavor to arrange this accommodation in training centers and Institutes of Technology, where the learning could be combined with the provision of much needed services to the local community.

References

- [1] <http://www.dit.ie/colleges/collegeofengineeringbuiltenvironment/>
- [2] <http://www.fas.ie/en/Training/Apprenticeships/Assistance+for+Redundant+Apprentices.htm>
- [3] Creswell. J. W., & Plano Clark, V. L. (2007) *Designing and conducting mixed methods research*. Thousand Oaks, CA:Sage.
- [4] Henn, M; Foard, N; Weinstein, M (2010) *A Critical Introduction to Social Research* 2nd Ed SAGE Publications Ltd.
- [5] Stake, R.E. (1995) *The art of case study research*, Thousand Oaks, Calif.; London: Sage.
- [6] Yin, R.K. (2009) *Case study research: design and methods*, Thousand Oaks, Calif. Sage Publications.
- [7] Taylor, C and Gibbs, G. R. (2010) "*What is Qualitative Data Analysis (QDA)?*" , Online QDA Web Site, [onlineqda.hud.ac.uk/Intro_QDA/what_is_qda.php] , accessed November 15th 2012
- [8] Seidel, J (1998) *Qualitative Data Analysis*. The Ethnography v5 Manual, Appendix E. Available online at: <http://www.qualisresearch.com/> accessed November 15th 2012

PLACE AND LOCAL IDENTITY IN EDUCATIONAL PROJECTS DEDICATED TO SILESIAN HISTORIC HOUSING ESTATES

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Abstract

The scope of the paper is to present educational activities conducted in 2008-2012 at the Faculty of Architecture, Silesian University of Technology, involving the cultural values as the basis for activating local communities and recreating the social capital. The activities concerned two post-industrial Upper Silesian urban quarters in Gliwice and Zabrze, respectively. Both locations possess unquestionable cultural values set against diverse social problems and urgent needs of modernization measures. Under the project dedicated to Zatorze quarter in Gliwice the activities had an open character and considered the maximal availability for the local community. The second project was a part of the scholarship scheme of "Ph.D students for Innovations" run under the framework of Design Silesia II programme. The site subjected to investigation was "Zandek" housing estate in Zabrze, which is exceptionally valuable in terms of the historic and spatial attributes. The entire concept of the scholarship scheme assumed that revitalization may be achieved only in reference to the local identity and the existing cultural, social and spatial qualities., whereas, the process of social inclusion aimed at rebuilding the social capital should be focused on utilizing the capabilities and resources of *design thinking*.

Keywords: *Spatial education, place identity, local community*

1. Introduction

The dynamics of changes in the image of modern cities, one of the subjects of recurrent academic discussions, has evoked waves of social interest, especially in view of many radical instances of interfering into the urban space, which have been an increasing nuisance for local communities. The unwelcome image of the city also results from ad-hoc or chaotic measures and pure negligence. The level of social response to the quality of the surrounding urban space, or, even the lack of such quality, is inseparably connected with the level of spatial education and spatial awareness, the sense of home-being and sense of identity. The majority of spatial undertakings leads to irreversible changes which frequently decrease the quality of urban life.

The cities undergoing chaotic spatial changes without any reflection on the existing cultural values demand spatial education and promotion of good design models. The spatial education is predominately based on the sense of identity and identification of the values that are unique to certain sites. Likewise, awareness raising measures are required to convince the inhabitants that well designed space may really satisfy the inhabitants' needs.

Chaotic development may be observed in many Silesian cities, recurrently disrupting the uniqueness of urban space, its specific climate or traces of the industrial culture.

Under such circumstances, the spatial education should be focused on making local communities sensitive to the unique nature of some urban sites and present opportunities for searching new creative solutions that can gear the concept of design as an important tool of the creation of valuable space.

2. Assumptions and objectives of spatial education – the Silesian experience

In view of the described phenomena and observations, the creation of the awareness of local cultural values and the search for good design solutions in Silesian cities have become a platform for educational and cultural activities, and, recently, of the Marshal's Office (of the Silesian Local Government Parliament). Basing on the experience in partnership in educational and innovative projects run at the Faculty of Architecture, education seems to be an essential element of strengthening space awareness and a way of triggering the activity of local communities and reconstruction of their social capital. The project was fundamentally focused on:

- Presenting the city as a value, as the space of meanings to build up on the awareness of local values;
- Assuming space identity as the starting point of any spatial activities and measures, including revitalization.

1. Assumed methods and results of the projects

In 2008 the Faculty of Architecture, Silesian University of Technology in cooperation with Gliwice Museum launched the project: "My place..." . The philosophy underlying the project was based on the concept of *space*- indicating the relations between people and space in view of a specific location: Zatorze quarters in Gliwice, which was erected in the second part of the 19th century following the growth of industry in Silesia. Accordingly, there are examples of patronage workers' housing and charming, well preserved complexes dating back to the early 20th century. The entire site-still with legible *genius loci* has many historic and cultural qualities, unfortunately not always appreciated by the inhabitants of the quarter. The project was focused on bringing out the values that are often not self-evident to the local community. It assumed the use of methods that could guarantee possibly maximal accessibility to the variety of the undertaken measures:

- The cycle of lectures presenting the issues concerning places and people, explicating such basic concepts as: *place*, *space*, *place identity*,
- The presentation of the history of place- by lectures, walk-around tours aimed at places that are of historic and architectural value,
- Workshops module- drawing field classes for students of architecture, plenary sessions for the youth, photography contests followed by exhibitions- with the main focus on the unique or most characteristic aspects of a given urban quarter or its breath-taking sites.

The project was also supported by local institutions such as: parishes, local schools that enabled the organization of classes and exhibitions, which reinforced its perception and popularity. The exhibition of the workshop outcome became another element animating the local community.

The scholarship scheme: "Ph.D students for Innovation" completed at the end of 2012 is yet another form of educating the public. Run under the framework of *Design Silesia*, managed by the Marshal's Office of Silesian Voivodeship, the programme is a multi-dimensional undertaking aimed at the dissemination of design as an innovative and creative approach to the solution of problems concerning space and services. The research scheme created at the Faculty of Architecture – acting as the programme partner- facilitated an interdisciplinary and innovative approach to the field of research which was the historic site of Zandek housing complex in Zabrze. The interdisciplinary team of Ph.D students devised a research model comprising three scopes of issues:

spatial (architectural and urban), social-economic and local cultural landscape. The approach to the concept of place identity was an established attribute of space. At the same time, design in a wide meaning of the concept, was understood as a method of looking for the best solutions. The search for tokens and manifestations of local identity at the housing estate was the underlying theme. The works undertaken under the programme concern the multi-dimensional concept of identity- referring it to specific elements of the space of the estate and giving the grounds for elaborating:

- Historical and spatial analyses and analyses of strategic spatial planning documentation;
- Surveys of social problems occurring at the estate;
- On the bases of in-situ visits- photographic documentation of the condition of spatial management, the equipment, facilities and unique elements also in reference to archival materials and local cultural landscape.

The outcome of the research is a description of specific local values comprising place identity and a universal model supporting the formulation of recommendations for future revitalization measures, which should be based on local identity. Detailed description of the research was published in: "Innovativeness and place identity in the revitalization of urban sites". One of the educational values of the project is the development of cooperation of young research workers in an interdisciplinary team.

The results were submitted to the local authorities.

Conclusion

Both educational projects described in the paper achieved their main objective: to indicate local cultural values, which, provided that the educational activities are continued, may support the process of building up the sense of identity and togetherness of local communities. The bonds with the place of occupancy and with local community stem from the awareness of local values and their uniqueness.

Furthermore, the outcome of both projects revealed the potential embedded in place identity, which, if properly perceived and brought out, may provide solid grounds for searching for the best design solutions that will meet the inhabitants' needs and expectations.

References

- [1] Żmudzińska-Nowak M. (2008). *Miejsca jako przedmiot edukacji powszechnej – próba podsumowania lokalnych doświadczeń*. Baranowski A., Awtuch A. (Eds). *Miejsce*. Gdańsk. Wydział Architektury Politechniki Gdańskiej.
- [2] Czachowska A., Szewczenko A. (2008). *Miejsce jako wyraz tożsamości; rola edukacji architektonicznej w kształtowaniu świadomości i współodpowiedzialności za przestrzeń*. Baranowski A., Awtuch A. (Eds). *Miejsce*. Gdańsk. Wydział Architektury Politechniki Gdańskiej.
- [3] Żmudzińska-Nowak M. (2012). *Innowacyjność a tożsamość miejsca w rewitalizacji obszarów miejskich*. Gliwice. Wydział Architektury Politechniki Śląskiej w ramach Projektu Design Silesia.

INNOVATIVE TEACHING METHODS: THE ROLE OF BUSINESS EDUCATION FOR GERMAN STUDENTS

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Abstract

The contribution deals with the innovation of the curriculum of business language training at the University of Ss. Cyril and Methodius in Trnava. Within a three-semester business language training, soft skills essential for German language are being developed. The purpose of the paper is also to evaluate the traditional methods of teaching and suggest innovative teaching methods; especially Skype-based teaching method. Basically teaching process is a communication model, which consists of sending and receiving information. Business language training couldn't be effective without the business knowledge. The University of Economics in Prague deals with the teaching methods of economic subjects. The innovation of the curriculum is based on the implementation of the business knowledge and skills. This has been possible due to close cooperation between both universities. The contribution brings the results of the cooperation and it describes the innovated curriculum. The paper provides an overview of the teaching methods in this curriculum and their impact on the business and language knowledge of the students. Along with the developed business and language skills, the students and graduates increase their chances to compete in professional environment.

Keywords: *Innovative methods, business education, German for specific purposes, Skype application*

1. Introduction

The University of Economics in Prague entered into partnership with The University of Ss. Cyril and Methodius in Trnava in academic year 2012/13. The aim of this partnership was innovation of the syllabus for students of German language in business communication at the university in Trnava, Slovakia.

The graduates of the mentioned subject of study are supposed to be able to deal with various sorts of professional and expert situations in German language. The staff of the Department of German studies was looking simultaneously for the means of providing the students with expertly erudite knowledge of the Linguistics, language for specific purposes and erudite knowledge of other necessary scientific fields for the future practice. Within the context of potential professional classification, scientific discipline of corporate economics plays a fundamental role. This is due to the fact that the graduates should potentially work in German speaking companies or companies that cooperate with such companies. International cooperation of the two universities began to obtain tangible content.

2. Methods

During the initial stage, the personnel of both Universities raised a question about the potential additional content of current syllabus and methods of teaching. The method should not only teach and enhance the level of acquired knowledge but it

should also educate the students on a personal level. The Didactics yet does not contain unified, generally accepted classification of teaching methods. E-learning is one of the contemporary teaching methods that are also employed at universities.

Nowadays, information technology penetrates also teaching of foreign languages. So called e-learning (electronic education) is a manner of teaching that uses multimedia computer games and, nowadays more frequently, the Internet. E. Daniš defines this method as follows: “E-learning is a process of purposeful and effective use of information and communication technologies in education,” (1991). In a sense, e-learning may be defined as a combination of educational and training activities with utilization of modern information and communication technologies. Computer devices (animations, texts, videos, records, visual aids) deepen motivation and allow simulation of difficult phenomena. Syllabus material is distributed on a storage medium (e.g. CD ROM) and students can learn on-line or off-line, with or without a tutor, part-time or full-time.

Original LMS systems were criticized for high administrative skills demands and thus LCMS began to be implemented. These are more focused on education and less on administrative support. E-learning continues permeating various fields of education and many untraditional projects are being created. Contemporary trends in economic education include:

- Blended-learning: This type of e-learning signifies combined teaching, ergo combination of standard schooling (attendance, presentation, face-to-face) and e-learning.
- Learning Content Management Systems (LCMSs): This term is often linked to LMS. It emphasizes training and simplifies administration part.
- Web collaboration & Live eLearning – It deals with transferring of actual classes on-line. Significantly supported by communication elements, virtual classes, on line lectures and workshops are created.
- Simulations, learning games, videos and storytelling: Development of games and simulations deepens motivation, intention to win and to learn something. Educational programs and video samples. It focuses on interpersonal relations and social education via story creation, presenting positive and negative examples, in a form of play.

Use of information technology in class is not only an attractive change and a possibility to attract students' attention but also a tool for an effective work of a tutor in a class. Syllabus – a well-equipped computer classroom is an imperative condition. A great advantage is the possibility to process any topic in the most favorable way. Presentation technologies - in this case, computer fashions various phenomena which are visually projected and accompanied by explanation of a tutor. E-learning technologies are greatly employed during training and examination by means of electronic tests, group practicing throughout projected assignments. For home assignments there are various e-courses, educational texts, multimedia encyclopedias, electronic games. (Foltýnek, 2006)

3. Cooperation process

Within a context of the syllabus of a subject of study, innovation took place in the contents of subjects: Technical language - Economy, Technical language – Business, Technical language – Business Negotiations. Contents of the subjects were enriched by substantial topics e.g. preparation of business plan, problems and shortcomings at business negotiations, stages of commercial intercourse.

Positive evaluation of teaching of Training of entrepreneurship at UoE persuaded us that the preparation and presenting of own business plan has a position in study plans of students, especially students of technical study fields. (Krpálek, Chromý, Sobek, 2013)

These all currently relevant topics had not been included in syllabus and after recommendation of the University of Economics have been employed. From the point of view of professional expertise, all topical units required progress. Questions related to the field of Linguistics and Technical language were not problematic. Many technical questions related to the field of economics were left without an answer. Solution was to supplement lectures with on-line entries of UoE personnel via Skype application. (Fedič, Krpáková, 2011) Short pre-planned on-line entries took a few minutes and gave students a chance to discuss problematic issues related to economics with an expert. Entries were conceptually planned to fit into a lecture. In this manner, blended eLearning, Web collaboration and live eLearning have been applied. Individual entries were recorded and uploaded to the Internet and thus another trend in electronic education (videos) was applied.

4. Evaluation

Student evaluation of a new content and methods took place in various stages after initial testing. The evaluation was concerned mainly with satisfaction with the contents of subjects and manner of implementation and the role of on-line entries. The results and commentaries were integrated into final version of the syllabus of given subjects. All students of the Department of German studies took part on evaluation. The most important results are:

- first/final evaluation of contents of subjects: 65%/85,4%,
- first/final evaluation of manner of implementation: 84,6%/96,8%,
- first/final evaluation of the role of on-line entries: 72,3%/92,5%.

The results of the first and the final positive evaluation are different and they indicate their positive development after the integration of the commentaries.

5. Conclusion

The results and commentaries were integrated into final version of the syllabus of given subjects. The students were satisfied with the subjects. Nowadays, there is a big interest in subjects.

We consider as very important that graduates are able to form work places and they do not stay unemployed or look for free positions. (Krpáková, Krpálek, Chromý, Sobek, 2013)

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References

- Fedič D., Krpáková Krelová K. (2011). Skype based Life-long Education Program. In Yushu Z. (Eds.), ICETC 2011 (p. 233-236). Singapore: IACSIT Press.
- Krpáková Krelová K., Krpálek P., Chromý P., Sobek M. (2013). Research in Area of Students Entrepreneurship at Middle and University Schools. Recent Advances in Educational Methods. In 10 th WSEAS International Conference on Engineering Education. (p. 50-55). Cambridge: WSEAS Press.
- Daniš E. (1991). Konference, E-learning ve firemní praxi. Prague: Semis.
- Foltýnek T. (2006). Metodika využití eLearningových technologií ve vzdělávacím procesu. Brno: MZLU.

EDUCATIONAL POSSIBILITIES IN THE INTERNET-TELEVISION INTERSECTION: THE HBBTV STANDARD

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Abstract

The standard HbbTV (Hybrid Broadcast and Broadband TV) allows new possibilities for education. The phenomenon of assimilation and interaction between television and the Internet is growing. This is translating into a boost in hybrid and connected TV and the Internet penetration. Colleges and other educational levels could take advantage from this new standard. This communication analyzes the keys to this standard in the implication of the students and the professors. After the analysis of the developments of this innovative standard and its possibilities in the University framework, we establish a range of advantages and disadvantages for the most implicated human sources in the University: professors and students. The possibility to share and to use in synchronicity television and the Internet creates a new multimedia environment. As a project and trend (nowadays in a commercial perspective), this technology could improve teaching and learning in the University. Our prospective approach tries to predict and to purpose benefits to increase the tools and the results in the teaching and learning activity.

Keywords: *HbbTV, education, television, Internet, University*

1. Introduction

The Internet phenomenon, popularized in the mid-90s of XX century, forecasted a relatively fast audiovisual interaction. The interaction between social networks and television fostered the emergence of the HbbTV (Hybrid Broadcast Broadband TV) standard, a development of audiovisual and Internet symbiosis.

Despite being one of the options found on the web, social networks have managed to drive a profound shift in the relationship between users, whose increase (HighBeam Research, 2011) has led to specialized areas of analysis. The possibility to share the contents of social networks and the audiovisual ones led to de HbbTV standard (Fondevila-Gascón, 2012a), analyzed in positive sounds.

One of the issues discussed is the technological and de communicative theoretical framework is the terminal that will prevail at home: TV or the computer screen. This issue is developing, following the increase of devices that people possess (laptop, mobile phone, tablet, smartphone) and those expected to be commercialized, and is decreasing the importance of the device with which content is received.

The aim of HbbTV (Abertis Telecom, 2012) is in the launched projects of the European public policies (Reding, 2008), including self-representation digital culture items (Thumim, 2012), advancing towards a convergence between analog and digital in the Broadband Society (Fondevila-Gascón, 2012b).

2. Objectives

The objective of this article is to establish advantages and disadvantages for the most implicated human sources in the University: professors and students. The possibility to share and to use in synchronicity television and the Internet creates a new multimedia environment, in a profit (Fondevila-Gascón, Sierra-Sánchez & Del Olmo-Arriaga, 2011) or nonprofit perspective.

3. Methods

We use a qualitative method, following the grounded theory (Strauss and Corbin, 1998), focused on symbolic interactions and qualitative sociology to approximate theory and empirical research. We used the constant comparison method to collect, analyze, coding and categorizing the data as we were getting about HbbTV, from theoretical sources and in-deep interviews with a sample of five students and five professors.

4. Results and discussion

The standard HbbTV (Hybrid Broadcast and Broadband TV) allows new possibilities for education, linked to the horizontal trends of learning (off line learning, blended learning and e-learning):

- It is an open and horizontal TV system;
- It is the first towards the IPTV ecosystem, which facilitates the metrics;
- Colleges and other educational levels could take advantage from this new standard applying its advantages to the classroom.

We analyze the possibility to introduce HbbTV in the classroom to offer an audiovisual learning for the students, embracing TV and Internet skills. Professors and students agree: a survey from de Digital Journalism and Broadband Research Group in February 2013 establishes 4/5 in a Likert scale when we ask for the introduction of HbbTV in the classes.

We observe two types of applications: broadband and DVB (Digital Video Broadcasting), it is, data and images.

4.1. Applications for professors

The applications for professors are the next:

- Broadband channel (not declared in the broadcast stream):
 - a) Social networking applications (introduction of Facebook, Twitter, LinkedIn or YouTube in the class);
 - b) Online information about the item of the subject;
 - c) Games: gaming education (introduction of gaming exercises, assignments, answers with options, from professor to students);
 - d) VoD (Video on Demand): option to include videos to reinforce the class explanations.
- DVB (Digital Video Broadcasting) channel:
 - a) Interactive sessions (ask and answer);
 - b) Voting: class surveys or decisions.

4.1. Applications for students

For the students, the applications are similar, with a variation of the point of view:

- Broadband channel (not declared in the broadcast stream):

- a) Social networking applications (creation of specific groups in Facebook, Twitter, LinkedIn to solve doubts, to share contents student-student);
 - b) Online information about the item of the subject;
 - c) Games: possibility to share assignments to improve contents;
 - d) VoD: option to download videos to reinforce the class explanations.
- DVB channel:
- a) Interactive sessions (ask and answer with the professor or other people);
 - b) Voting: class surveys or decisions in the students area.

5. Conclusions

HbbTV is an innovative standard with possibilities in the introduction on classroom and, in general, in academic activities. The flow of sources is the Internet (the broadband channel) and the television contents.

We can observe social networking applications (use of the principal social networks in the class), online information, gaming education, interactivity and on demand opportunities. A question to study in a short term is the option to monetize these on demand approaches, but it will be not easy, because of the Internet and television are referred, in general, as free ecosystems. The challenge is to convert the addition between both technologies in a new payment environment.

References

- Abertis Telecom (2012). *La televisión conectada. Una oportunidad para el sector audiovisual*. Barcelona: Abertis.
- Fondevila-Gascón, J. F. (2012a). Connected Television: Advantages and Disadvantages of the HbbTV Standard. *Cuadernos de Información*, 32, 11-20.
- Fondevila-Gascón, J. F. (2012b). *The Broadband Society in the World*. Terrassa: CECABLE.
- Fondevila-Gascón, J. F., Sierra Sánchez, J. & Del Olmo Arriaga, J. L. (2011). New communicative markets, new business models in the digital press. *Trípodos* (Extra 2011-VI International Conference on Communication and Reality-Life without Media, Universitat Ramon Llull), 301-310.
- Highbeam Research (2011). *Social Media Popularity Report*. Chicago: HighBeam Research.
- Reding, V. (2008). *Europe on the way to a high speed Internet economy*. Brussels: Launch Press EITO.
- Strauss, A. & Corbin, J. (1998). *Basics of Qualitative Research Techniques and Procedures for Developing Grounded Theory*. London: Sage Publications.
- Thumim, N. (2012). *Self-Representation and Digital Culture*. Basingstoke, Hamps.: Palgrave Macmillan.

"HERE I AM ...WE ARE WITH YOU!" A NETWORK OF INSTITUTIONS FOR THE IMPLEMENTATION OF THE ICF MODEL IN ITALY

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Abstract

The opening towards the territory of a network made up of seven schools, three associations, local health authorities, local social services and universities; involved in the trial ICF (International Classification of Functioning, Disability and Health) are two classes for Nursery School, eight classes for primary school, three classes for secondary school 1st grade for a total of 295 students of which 20 DA. Participation, although not on a network, of a Secondary School Grade II meant that everyone, absolutely everyone was called into question, each with its own characteristics in order to achieve those objectives, despite the significant use of energies in terms of human resources, time, space in order to:

- affirm on the territory a network of support for the policies of inclusion;
- support training models that are able to connect the world of education to other worlds in life: family, leisure, society in the perspective of a real evolution from the Individualized Education Plan to Life Project, harvesting the fruits of constructive arrangements and alliances with the realities and local institutions.

This has led to identify problems early and, working on a network, finding the best strategies to address them;

- develop an observation card with shared ICF codes that will replace the previous report form;
- process the document DF / PDF as much as possible detailed and understandable
- develop an IEP document that actually sees the various parties involved in the project that revolve around the person's life;
- to develop, from the Social Services, a more detailed card that allows to better identify issues and provide possible solutions.

Keywords: ICF, School, Education plan, Life project, Functional diagnosis

1. Introduction

To understand and describe the function / disability is now a major concern for health and social systems because it is a growing phenomenon and a growing burden of care for services and families. Having a common language to use in terms of disability helps the organization of services, facilitates continuity of care, simplifies the relationships between the different institutions delegated to the care and support, and helps to better predict the future evolution of the needs of our communities.

Moving closer and deepening the content of classification is not immediate, however. The International Classification of Functioning, Disability and Health (ICF, 2001) requires a rigorous approach and a clear understanding of its conceptual and descriptive.

In the school context, next to the 2-3% of students with disabilities "certified" there is another 15-20% of pupils who have various types of "Special Educational Needs":

- pupils with specific learning disorder such as dyslexia, dyscalculia, etc.;

- pupils with psychological, behavioral and social skills;
- pupils with hyperactivity disorders;
- pupils who are socially disadvantaged and present various linguistic, cultural and, last but not least, ethnic differences.

According to Ianes, it is evident, therefore, that we need a widespread diffusion of the ICF model in the context of the socio-educational that, surpassing the principle of organism barrier of the disease, raises awareness of all operators (Ianes, 2006)

2. Design

Our research team wanted to start a trial of the ICF model, according to the project of inter-institutional network that has been defined following the presentation of the project to the Ministry of Education. It is applied to the school population of the town of Marano in Naples, which is located on the large territory consisting of the city center, suburbs and villages, in the obvious social and cultural differences arising from the contexts of reference, which has among the common denominators a significant percentage of students with disabilities and special educational needs (DSA students, foreign students, students with social problems).

In order for the schools to support the inclusion of pupils with difficulties, it is not enough to develop a plan regarding the curriculum, but it is essential to build, between different types of schools, families, associations and local authorities, ties of continuity and consistency so to obtain a more significant incidence in the action of training students in the context of belonging.

In this way, the study team directed a research field that has seen the participation of both human resources and public and private institutions.

3. Objectives

Our research group has set, therefore the objective of building a good practice for socio-educational processes of inclusion in schools that use the ICF model and its variations application.

4. Method

The branch network has worked through testing stages; there was work in the contexts of belonging and moments of intermission with reflection and monitoring the results.

The training of all those who work with the disabled has preceded and accompanied the trial, according to the operating model of research - action.

Periodically, the Group of Design, made up of representatives of the various network partners met for the evaluation and documentation of the routes of the materials produced.

In summary, the main stages at the methodological level were:

- a training course on ICF directed by Department of Human Sciences, Philosophy and Education of the University of Salerno;
- continuous meetings aimed at tuning cultural and operational actions of all parties (psychiatrist, psychologist, parents, teachers, therapists, social workers, etc...) that work with the disabled, with the aim of developing a methodological glue aimed at common objectives of the subject's life;
- projects at the schools that have seen teachers experience in the field, through processes of action research, teaching methodologies functional to the implementation of the ICF model;
- interinstitutional conferences for the dissemination of information;
- building tools and adapters conforming to the ICF model to be used as

inclusive institutional practices of schools within the territory of the municipality of Marano in Naples.

5. Results

The operating model that has guided experimentation is the ICF model, a model approach to the person as a carrier of certain needs.

The ICF is outlined as a classification that aims to describe the health status of individuals in relation to their areas of life (social, family, work) in order to grasp the difficulties that in the socio-cultural context can cause disability. Through the ICF then we want to describe not the people, but their daily life situations in relation to their environment and emphasize the individual not only as a person with illness or disability, but also highlight personal uniqueness and globalism.

From the implementation of activities under the research methodology, we have obtained the production of a huge amount of material that basically can be summarized in three points strategically and necessarily essential to the application of the ICF model, and that is:

- recognize, on the part of all institutions, the unique value of the model and conform languages and operating practices;
- support training models that are able to connect the world of education to other life-worlds such as family, leisure, society, from the perspective of a real conversion from Individualized Education Plan to Life Project, harvesting the fruits of constructive arrangements and alliances with realities and local institutions;
- transfer teachers with the skills necessary to plan according to the specific needs of the students, through the use of innovative design procedures and methodological strategies.

6. Discussion/Conclusion

In view of the work done, the meetings held, the material produced, the data collected, it can be said that the trial of the ICF has been a very strong stimulus in a territory such as ours, which is still too closed in its singularity.

The path has not been easy and what we have obtained can only be considered a landing, a point of arrival, but functional just to be able to leave ... to reinforce good practice learned, sharpen the tools that have been developed, disseminate the product, but also to understand that the ICF model is a "life plan" that does not end and can not end with teaching activities, but with "structuring a network of relationships between the different area school along the line of the pedagogical and educational coherence social responsibility in becoming staff "(Cross, 2011).

In particular, it was important to see all stakeholders synergistically engaged in the network, in building a viable pedagogy for inclusion aimed at a "life project" as an opportunity necessary for the growth and maturation of a personality aware and able to fit into the social reality.

References

- Croce, L., (2011). *ICF a scuola*. Brescia. La Scuola
- Grasso, F. (2011). *L' ICF a Scuola*. Giunti O.S.
- lanes, D., (2011). *Usare l'ICF nella scuola*. Spunti operativi per il contesto operativo. Centro Studi Erickson.
- lanes, D., (2004). *La diagnosi funzionale secondo l'ICF. Il modello OMS, le aree e gli strumenti*. Centro Studi Erickson
- lanes D. (2006), *La speciale normalità*, Trento: Erickson
- O.M.S., (2011). *ICF-CY. Classificazione internazionale del Funzionamento, della Disabilità e della Salute*. Centro Studi Erickson

EVALUATION OF TECHNOLOGICAL, PEDAGOGICAL, AND CONTENT KNOWLEDGE (TPACK) IN PRIMARY SCHOOL TEACHERS OF ENGLISH IN TAIWAN

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Abstract

In responding to the English education reform, developing professional knowledge for effective teaching has become an urgent call. Among the professional knowledge a teacher needs to have, technological, pedagogical, and content knowledge (TPACK) has been regarded as important and crucial for effective teaching. TPACK has been heatedly discussed and extensively studied in many domains in the past decades; however, research about TPACK in any TESOL context is scarce. Therefore, this study described TPACK of EFL teachers in Taiwan, and explored if there was any difference for TPACK represented by teachers with different teaching years. In total, 22 teachers at elementary schools in Taiwan participated in the study. Qualitative data were collected through semi-structure interviews, and quantitative data were collected with a TPACK survey, a survey based on the assessments developed by Koh, Chai, and Tsai (2010) and Sahin (2011). Though with similarities, significant differences among teachers with different teaching stages were observed. The results indicated that teachers with different teaching years demonstrated very different TPACK. Two factors were significantly related to the overall performance of TPACK: (1) the length of teaching years, and (2) availability of technological equipment. EFL teachers with more teaching experience showed greater flexibility, better experimental innovation, and more delicate observation. In addition, the new teachers tended to emphasize lower-order thinking skills such as remembering and understanding information, while more experienced teachers focused more on higher-order thinking skills, such as applying, evaluating, and creating. This paper concluded with implication and suggestions.

Keywords: *Technological, pedagogical, and content knowledge, TPACK, TESOL, professional development of EFL teachers, conceptions of teaching.*

PEER TUTORING AND CHOOSING AN ACADEMIC COURSE OF STUDIES: A CASE STUDY AT THE UNIVERSITY OF PADOVA

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Abstract

The transition from high school to the university is one of the most crucial moments in the life of a young student in view of the important decisions that must be made including and most importantly the choice of the course of studies to follow (Álvarez, Bizquerra, & al., 2007; Santana Vega, 2009; Bertagna G., Puricelli E., 2008).

Together with the University of Padova's Tutoring Service, the Counselling Center organizes a variety of activities every year including meetings open to high school students called "Open Day" aiming to reinforce the continuity between secondary school and the university system. Here we present the experience of Open Day proposed by the Tutoring Service of the Teacher Education Programme of the University of Padova. It is the Junior Tutors, students of the second-cycle degree course of studies who have already completed a large part of their academic journey, who actually carry out the initiative by holding information counselling workshops for small groups of students interested in the degree courses being offered. The added value of this experience can be found in the "au pair" relationship that develops between the expert student (the Tutor) and the novice one under the supervision of teaching professors. On the one hand, these encounters facilitate exchange and the active participation of all those involved, and, on the other, they reinforce the Tutors themselves encouraging them to become autonomous and efficient (Croce & Gnemmi, 2003).

The research falls within the context of a larger Project (STPD08HANE_005) promoted by the University aiming to analyze current developments and trends in higher education and to serve as a guide to students as they face new challenges and to help them achieve success in their studies.

Keywords: *Peer tutoring, entrance counselling, tutor, drop-out.*

1. Introduction

The topic of educational continuity between the secondary school and the university systems has been solicitously considered by European policy-makers, in particular over the past decade. In March 2001, during the European Council Meeting held in Stockholm, the "Instruction" Council identified three basic objectives: a) to increase the quality and the efficacy of instruction and teaching education in the European Union, b) to facilitate access to it, c) to open these systems to the rest of the world (Bertagna G., Puricelli E., 2008: 34).

2. Counseling when students enter the Italian university

The 341/1990 Italian law introduced the peering system in all Italian Universities. This law aims to guarantee students' "proficuous participation in university courses of studies" also through counseling and tutoring activities. In order to achieve these goals, the Conference of Italian University Rectors (CRUI) delineated university orientation and peering activities and distinguished four phases:

- Ingoing orientation, for students who are facing the university experience for the first time;
- Welcoming Activities, for students who have just enrolled;
- Tutoring (ongoing orientation), for students enrolled in a university course of studies;
- Outgoing orientation, for students who are about to or have just completed their course of studies (CRUI, 1995).

In this work we will focalize on the first phase (ingoining orientation), that is, on the needs of those students who are, for the first time, entering into contact with the university system. An activity designed and tested at the University of Padova aiming to meet future freshmen's needs for "information" is outlined here.

3. Information Orientation Activities at the University of Padova: The Open Day Workshop

The Orientation Service of the University of Padova is charged with the task of furnishing information and consultation during the selection phase, not only with regard to courses of study to be embarked upon and didactic opportunities but also concerning services offered to the students by the chosen university.

Open Days are organized encounters before a new term begins for students deciding on the course of studies they intend to commit to. During the day's activities students have the opportunity to visit university buildings including study halls, classes, laboratories, libraries and other venues of interest; they can receive information about courses of study, future career and job opportunities, and specific details about the selection and enrollment process, and they can take a simulated entrance exam.

These encounters are, moreover, organized to give potential students the opportunity to meet in a friendly atmosphere and on equal footing (*alla pari*) a fellow student (tutor) who can answer their questions and help to work out doubts and fears.

4. The Experience of the Teacher Education Program: the l'Open Day Workshop

Together with the Orientation and the Right to Study and Tutoring Services of the University of Padova, the Tutoring Service of the Teacher Education Program organizes an Open Day during the summer for students interested in the three-year first level course of studies and another for students about to enroll in the two-year second level one. Beginning last year (2012), the Open Day for the former was organized as a workshop.

This was done in order to respond to two necessities:

- to give future students the opportunity to interact on equal footing (*alla pari*) with students (tutors) who are here and now (*hic et nunc*) themselves enrolled in a course of studies that they freely chose, thus creating a communicative atmosphere in which a student can feel free to express doubts and perplexities without embarrassment or fear to someone who has shared similar experiences" (Torre E., 2003);

- to enhance the teaching experience and the skills and competences acquired by the tutors themselves which serve to empower them by reinforcing their self-esteem and self-determination (Croce & Gnemmi, 2003).

The rapport that is created thus produces positive effects not only on the person who is being assisted but also on the tutor him/herself, defined in the literature as the "tutor effect" enhancing his/her self-esteem/image, awareness of his/her capacities and sense of accomplishment (Barnier, 2000).

After listening to a general presentation concerning courses offered by the Teacher Education Programme of the University of Padova, the students participating in the Open Day Experience are divided into small groups depending, in part, on the number

of courses of study being presented (each participant can participate in a maximum of two workshops).

The tutors conduct the workshops acting as mediators within the University context who facilitate the learning process. Information concerning pre-enrollment and enrollment as well as possible job/career opportunities linked to a particular course of studies are furnished and the students can take a simulated entrance examination. The main theoretical references are connected to the relationship between learning and doing (J. Dewey), the concept of “self-efficacy” (A. Bandura) and the connection between language and action (J. B. Bruner).

The bibliography that exists (Frabboni F., 2004; Margiotta U., 2003; Truffo L., 2005) underlines how the workshop experience focalizes attention on the educational rapport (in this case in the transmission and sharing of knowledge between the tutor-student and the potential-student) regarding motivation, curiosity, participation, sharing and metacognition of knowledge and socialization.

5. Some final reflections on Open Day

A structured questionnaire (11 items) was distributed to all of the participants at the end of the day’s activities. Out of the 74 respondents, 77.1% declared that they were generally satisfied (enough or completely) with the experience.

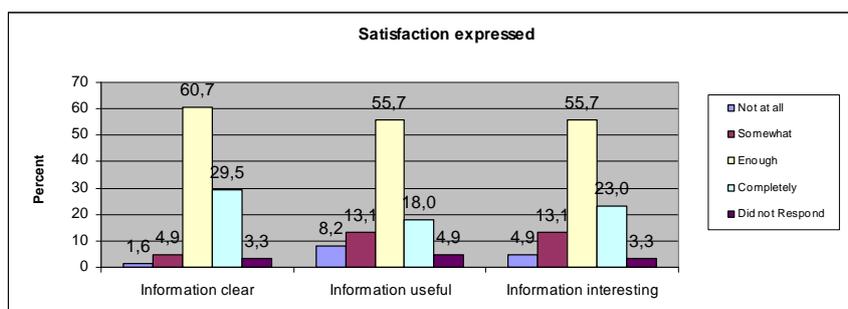


Figure. 1. Satisfaction expressed with regard to the information furnished

More specifically, the information furnished was considered (enough or completely) “clear” for 90.2%, “useful” for 73.8% and “interesting” for 78.8% (Figure 1). The Open Day activity briefly described here can be defined a case study carried out within the Italian university context, an experience that can presumably be perfected and upgraded to make it more in tune with students’ needs.

References

- Álvarez, M., Bizquera, R., Espín, V. & Rodríguez, S. (2007). *La madurez para la carrera en la Educación Secundaria*. Madrid: EOS
- Barnier, G. (1989). The tutor effect in situations involving spatial relationships between 7-sup-8 year old children in dyadic interactions with 6-sup-7 yr old peers: *European Journal of Psychology of Education*. Vol 4 (3). Sep 1989, 385-399
- Bertagna, G. & Puricelli, E. (2008). *Dalla scuola all'Università. Orientamento in ingresso e dispositivo di ammissione*. Sovaria Manelli: Rubbettino Editore
- Croce, M. & Gnemmi, A. (2003). *Peer education. Adolescenti protagonisti della prevenzione*. Milano: Franco Angeli
- Crui. (1995). *Orientamento e Tutorato*. Retrieved Aprile, 18 2013 from: www.crui.it, 9-13
- Frabboni F. (2004). *Il laboratorio*. Bari: Laterza
- Margiotta U. (2003). *La scuola dei talenti. Modularità didattica e Modulazione degli apprendimenti*. Roma: Armando
- Torre, E. (2006). *Il Tutor: teorie e pratiche educative*. Roma: Carocci, 14-16

DEVELOPMENTAL INSTRUCTIONAL SUPERVISION (DIS)

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Abstract

Under the new Malaysian Education Plan 2013-2025, one of the initiatives to be implemented is teacher professional development through peer supervision. The Ministry aims to create a culture of excellence through collegial supervision in schools. Teacher leaders become mentors and guide, develop and present best practices, and build a system of continuous professional development through school based instructional supervision. They also ensure that colleagues have accountability and the highest standards of professionalism. Therefore, this study is perceived to be consistent with the objectives set forth by the Prime Minister of Malaysia: to jointly create more outstanding teachers for the nation. Instructional supervision was previously seen as a way to improve teacher quality, often as a process of teacher evaluation, and not focused on the process of knowledge transfer related to instructional supervision in schools. This study is carried out based on Developmental Supervision Model, utilizing four developmental approaches introduced by Glickman, Gordon and Ross-Gordon (2010). The project uses the action research approach to be carried out in three phases. Phase 1 is the identification of the teacher readiness to adopt the instructional supervision approaches to be introduced. Phase 2 focuses on the transfer of knowledge and skills of instructional supervision, to a small group of teachers identified to lead the supervision process in schools. Emphasis is given to the identification of exemplary practices and the developmental nature of supervision. Phase 3 stresses on the strengthening and developing the process of clinical supervision and observation techniques, and other tasks of supervision, and support activities, which at the same time will be developing a culture of continuous teacher professional development, through systematic instructional supervision. For this paper, the authors share a discussion of phase 1 where teachers' knowledge, experience, hopes and aspirations as well as frustrations were gathered through focus group discussions at selected schools.

Keywords: *Developmental Instructional Supervision, action research, transfer of knowledge and skills, teacher evaluation.*

1. Introduction

The Malaysian government recently launched the Malaysian Educational Development plan 2013 – 2025, one of the pillars of which is school based teacher professional development. The Malaysian Higher Education Ministry made available to academics a Transfer of Technology grant to enable them to transfer knowledge, technology and skills acquired from research and teaching activities to the community.

This study is based on one such project, carried out in three phases. It involves training of teachers in Developmental Instructional Supervision (DIS) based on the model proposed by Glickman, Gordon & Ross Gordon (2010). The aim is to transfer knowledge and skills of DIS to schools and institute a system of support for teacher growth and career development and, ultimately quality teaching and learning. At the same time, DIS has as the ultimate goal, the development of professional learning communities in schools, characterized by improvement of relationships among the teachers and collegiality that meet both personal and organizational needs.

2. Objectives of the paper

This paper presents findings from the first phase of the Transfer of Technology Project. It aims to explore teacher readiness in adopting the DIS model in schools, specifically to examine teachers' reactions to DIS.

3. Method

For this first phase, four focus group discussions were carried out with 120 teachers from four primary schools in the city and the vicinity of Kuala Lumpur, Malaysia. These discussions focused on the current state of supervision as understood and experienced by the teachers. Excerpts and snapshots of lengthy discussions, as well as expressions that reflected the teachers' perception of supervision, experiences, and readiness to adopt DIS in their schools were recorded. Copious notes were also made by the members of the team. These were then transcribed, analyzed and categorized into themes.

4. Results and Discussion

From the challenges these teachers shared, four themes emerged as the most striking and important to address before DIS can be introduced. The themes identified are: (1) unclear meaning of supervision, (2) lack of understanding and knowledge of tasks and procedures of DIS, (3) lack of reflective practice and feedback, and (4) lack of teacher collaboration.

4.1 Unclear meaning of supervision

Here are some of the excerpts of statements elicited from the teachers; 'to refine teaching and learning', 'confusion in using materials', 'pointing to others', 'awareness', 'special edition', 'sharing and caring', 'learning and unlearning', 'realignment', 'education evaluation', 'monitoring', 'effectiveness of teaching and learning', 'planning', 'evaluating an activity', 'getting feedback', 'getting an impact', 'instruction which is guided within guidelines', 'documentation', 'observation', 'guidance from peers, administrators, or students'. It was clear to the authors that there were confusions with regards to what is DIS. The teachers were vague on what it entails, and the ultimate purpose. Likewise, their recollections of their experiences of being supervised differed from teacher to teacher. However, it was clear that they were generally negative towards supervision of instruction, and agreed that instructional supervision is equated with teacher evaluation or assessment of teaching, particularly in conjunction with performance evaluation. On their feelings about supervision and being supervised, the words used to portray their feelings were 'panic', 'discomfort', 'fed-up', 'hatred', 'fun', 'anger towards the supervisor', and 'nervous'.

4.2 Lack of knowledge of tasks and DIS process

The teachers appeared to be vague about the whole issue of instructional supervision, and almost no knowledge of DIS, particularly the tasks, the skills involved, and the process of DIS. Most of all they were unaware of the developmental nature of DIS, and that DIS is to assist them in enhancing their instructional skills – a form of professional development for them. They were rather baffled when mentioned approaches of developmental supervision. They associate instructional supervision only with classroom observations and clinical supervision. They were also unaware that the skills required can be acquired, nor DIS is ultimately collegial supervision in practice. Examples of their reactions are, 'Is a teacher a supervisor or one who is supervised?', 'Is the focus of instructional supervision on students or teachers?', 'Professor, I'd like to ask, what instrument is used? Is there an indicator...or none?', 'Am I to become

supervisor to my colleagues, find their faults...not faults, but weaknesses', '...are there levels?'. It was apparent that they want it to be pleasant, and they want something different from what they are used to, especially flexibility to be creative. The remarks to this effect are: 'We want something different but it's the same thing every year', 'At one point, we feel like our routines are just those', 'Our creativity is suppressed...we are restricted from being creative'. 'After five years of implementation, discussion stays at the same level'.

4.3 Lack of reflective practice and feedback

These teachers also highlighted the lack of feedback when supervised, and very little focus is given to reflection of their own practices. 'I've taught for almost 20 years. Many evaluations have been carried out, but after evaluations, we are not told of our strengths'. 'Our weaknesses are not discussed once supervision is done'. 'The supervisor has never asked me to reflect on my teaching, but I do reflect when I write at the end of my report book'.

4.4 Lack of teacher collaboration and support.

The discussions also revealed that teachers work individually and in isolation. They hardly collaborate among themselves. Remarks such as 'I feel so frustrated when thinking of what to do when some students still cannot get what I teach' were frequently mentioned. There was also little or no support for them in carrying out their duties, or for enhancing their practice. Probed further about continuous support for self improvement, such remarks like, 'I must prepare myself well, search for good materials' or ... 'think of strategies myself especially if a supervisor's coming to observe my teaching'. To them, supervision is still a once-in-a-while affair, when teachers are subjected to being observed and evaluated.

5. Conclusion

This paper discusses the results obtained in Phase 1 of a Malaysian Ministry of Education's Knowledge Transfer Project undertaken by academics of University Malaya for Malaysian schools. It identifies teachers' perceptions, experiences, and understanding of supervision as currently practiced in schools. Findings revealed teachers did not understand the supervisory process, or purpose. The practice of supervision does not entail reflection of practice. There is neither peer nor administrative support, and there is no collaboration among themselves. A module was thus created to attend to these gaps and develop the DIS model in Malaysian schools. The module contains five sub-modules, namely Introduction and approaches to Instructional Supervision, Reflective Practice, Supervision Skills, Tasks of Developmental Instructional Supervision, and Building Professional Learning Communities, is now ready to be tested and used in the second phase of the project. The development of this module takes into consideration the teachers' feelings, perceptions, experiences, hopes and the need for a new kind of supervision for use in schools.

References

- Beach, D.M & Reinhartz, J. (2000), *Supervisory leadership: Focus on instruction*. Needham Heights, Mass, Pearson Education Company.
- Glickman, C.D., Gordon, S.P. & Ross-Gordon, J. (2010). *Supervision and Instructional Leadership*: Eighth Edition. Boston, Pearson.
- Sergiovanni, T.J. & Starratt, R.J., (2007). *Supervision: A redefinition*. (Eighth Ed). New York, McGraw Hill.

COORDINATION OF THE MASTER THESIS IN AN ONLINE MASTER COURSE: MANAGEMENT PROBLEMS AND IMPLICATIONS FOR TEACHERS

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Abstract

If there is a new element in the adaptation process to Bologna within the European framework of higher education, it is the existence of compulsory Master's or Undergraduate Thesis. These thesis require the need to develop those transversal skills of the student, putting in practice and assimilating what they have learned during the whole formative period.

The coordination of these thesis is complex, having into account both teaching and learning processes and require an extra effort especially in online environments where communication and coordination between students and teachers is of a key importance. These thesis have clear objectives interrelated with framework competencies developed by the other subjects in each particular degree.

The purpose of this paper was to evaluate the results of the monitoring of the Master Thesis of the Master Degree in Vision Rehabilitation of the University of Valladolid. Two semester surveys per year were used as tool of analysis. Surveys were send to teachers, students and the coordination.

Results showed that the problems found in the coordination of final papers during the first year had an average slightly above the general average of the master 7.05 over 7. Nevertheless, students highlighted as positive the initial planning phase by the coordination. The results also showed that students criticized the lack of involvement of the tutor. Students valued positively those aspects related to the contribution of teachers, teaching and support materials. Having into account the tutors' results on the survey after the two follow-ups at each term, two aspects can be raised: the fluent communication between student and monitor, and the correct development of the initial plan. There are not objective data based on this information to be measurable and comparable, since we rely on the anonymous replies of teachers and students. Finally results can have been influenced by online learning which is an additional complication in the teaching-learning process, the degree of compliance with the established worksheets, quantity and quality of documentation provided by the tutor to guide the student, degree of compliance with work objectives and consensus between tutor and student.

Keywords: *E-Learning, master, thesis, management.*

1. Introduction

Master's or Undergraduate Thesis is an important new element in the adaptation to the Bologna Process within the European Framework for Higher Education. In these theses the students must developing their transversal skills, putting in practice and assimilating what they have learned during the whole formative period.

The MVR, which is coordinated by the University Institute of Applied Ophthalmic Biology (IOBA), was started in response to a need of providing healthcare training to students and professionals who are involved in integrating visually impaired people. The initiative is being carried out within the University of Valladolid, which possesses

wide experience in managing and teaching officially approved Master programs. The training requires developing area specific skills and competences; as well as an interaction between students and teachers, and close monitoring.

The online learning system is based on a direct tutor-student relationship, to develop a plan that requires consensus, evaluation, continual improvement and interaction for as long as the work lasts and until the results are presented. For this, the data must be derived from information that is relevant and should be standardized for all the assignments currently in progress.

The purpose of this paper is to evaluate the results of monitoring the Master Thesis of the Master Degree in Vision Rehabilitation (MVR) at the University of Valladolid, Spain. Two semiannual surveys per academic year were conducted and used as the analysis tool. Surveys were sent to teachers, students and the coordinators.

2. Methodology

After first year of implementing MRV, a Final Master Assignment (MFA) worksheet was created to facilitate coordinator-tutor-student communication by setting forth the types of assignment, specific objectives, the planning for them, expected outcomes, materials to be developed and evaluation criteria. In the second year, with worksheets available, we could evaluate the results and see their good and bad sides, and from those determine the shortcomings to be overcome and the improvements to introduce in the third year. One second-year novelty was to introduce for the coordinators, as a supplement to the worksheet, two monitoring times. We wanted to know whether the plan established was being carried out. This follow-up, intended for the guidance of tutors, was supplemented with information gathered from the half-yearly surveys in which students assessed how each course was progressing.

3. Results

They showed that on average the problems found in the coordination of final papers during the first year were slightly above the general average of the Master, i.e., 7.04 as opposed to 7.00. Students highlighted as positive the initial planning phase by the coordination staff. Nevertheless, the results also showed that students criticized the lack of tutor involvement. Students assessed positively, with ratings above the Master general average, the aspects related to the contribution of teachers, teaching and support materials. The survey results concerning tutors after the two follow-ups each term raise two aspects: fluent communication between student and tutor, and correct development of the initial plan. The results may have been influenced by online learning, which is an additional complication in the teaching-learning process, by the degree of compliance with the worksheets drawn up, by the quantity and quality of the documentation provided by the tutor to guide the student, the degree of compliance with work objectives and the consensus between tutor and student.

The evaluation of the online MVR improved from 5.82 to 6.6 since the first year it was given. However, there has been a drop in approval rating between the first and second terms. In the first term it was 7.17. Nineteen students have taken part in the second edition of this professionally oriented training. Almost all of them, 93.33%, were already working; and of those, 60% were working in fields related to the content of the training. 80% chose the degree thinking that it would advance them in their profession. The evaluation method required a follow-up to each course in the form of surveys every term. The week of on-campus classes was evaluated on the spot.

The coordination aspects of MRV the program has been given a good rating, surpassing 7.20 (0-10 rating scale) in all aspects, except "University's registration procedure" with 6.44. Furthermore, almost all the students, 93.3%, would take the program again and would recommend it to others. This shows there is a high degree of

student loyalty. However, the results about on-campus week were confused. Only 47.1% of students would take the on-campus week and a 52.9% of them would recommend it. This may be due to it obliged students to go elsewhere for a whole week.

The FMA was in general rated slightly above the Master average. However, there are comments from students that draw our attention to the need to improve both its tutor-student communication aspects and the overall academic coordination. The expected outcomes need to be made clearer, and the planning and monitoring reinforced during the academic year. We have to understand that the FMA, when the instruction is online, presents a series of problems that cannot be left to come to light at the end of the program when it is too late to remedy them. The coordinators must be very clear about what they require from the students and especially from the tutors, whose role in carrying out this course effectively is crucial. It is also worth mentioning that students describe this course as a 'shock', because it is so different from the more or less traditional and theoretical courses. The internship, the work on the MFA, its presentation, jury defense and grading create a string of tensions that affect not only students but also teaching staff and coordinators. This last consideration is extremely important and obliges us to continue working at designing monitoring methods that will eventually enable coordinators to follow students' and tutors' respective contributions while the assignment is actually in progress. Such monitoring should bring to light objective data that would facilitate action on specific problems, and the data would be drawn from information that is standardized for all the assignments in progress.

The success of the course depends in large measure on that relationship; correct management includes detecting, from objective data, when students are not doing the tasks given to them properly.

Consequently, in the third year of operation we are going to introduce a method for monitoring FMA work while it is in progress. It will be based on the above principles and on objective, measurable information and data that will alert us continually to what we can broadly call 'failures in communication' and help us deal with it in time appropriately. This will facilitate and promote tutor-student communication and hence ensure fluid working progress throughout the academic year according to a mutually agreed agenda. In turn, incorporating new content and resources into the teaching guide for the course leads to changes and improvement in its evaluation, and these give us a better picture of how effective the procedure is.

References

- Buzón García O. (2005). La incorporación de plataformas virtuales a la enseñanza: una experiencia de formación on-line basada en competencias. *RELATEC: Revista Latinoamericana de Tecnología Educativa*, 4, (1), 77-100.
- Rodríguez Conde MJ. (2005). Aplicación de las TIC a la evaluación de alumnos universitarios. *Teoría de la Educación: Educación y Cultura en la Sociedad de la Información*, 6, (2).
- Agra MJ, Gewerc Barujel A, Montero Mesa L. (2003). El portafolios como herramienta de análisis en experiencias de formación On-Line y presenciales. *Enseñanza*, 21, 101-14.
- Rubio MJ. (2003). Enfoques y modelos de evaluación del E-learning. *RELIEVE: Revista Electrónica de Investigación y Evaluación Educativa*, 9, (2), 101-20.
- Añel Cabanelas ME. (2008). Formación On-Line en la Universidad. *Pixel-Bit. Revista de Medios y Educación*, 33, 155-163.
- Colás, P, Jiménez R. (2008). Evaluación del impacto de la formación (online) en TIC en el profesorado. *Revista de educación*, 346, 187-215.
- Colás P, Rodríguez M., Jiménez R. (2005). Evaluación de e-learning. Indicadores de calidad desde el enfoque sociocultural, *Teoría de la educación y Cultura en la Sociedad de la Información*, 6, (2).

WORKSHOPS



A NEW CURRICULUM FOR TEACHER TRAINING IN SPECIAL NEEDS

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Abstract

Within the professional development of teachers most modules on special needs are options and the sessions within the general training curriculum tend to be inadequate. In any case, it is difficult to find the time, even for those who wish to work in special schools, to cover all categories of impairment (sensory, motor, cognitive and behavioural etc) or even all the conditions within a single category. Moreover, the majority of children with significant special needs have highly individual combinations of varying morbidities. However, it is also the case that there are many difficulties that are common to most special-needs children, across categories of impairment. For example, short concentration span (implications for learning strategies) skin sensitivity/shoe problems (implications for school uniform) experience of bullying (implications for school policies and the personal, social and moral education curriculum). The suggestion, to be explored in this session, is for the development of a professional development curriculum which incorporates the knowledge, awareness and skills which will enable teachers to provide good support to all children in their class, whatever the range of special needs.

Keywords: *Special needs, curriculum, professional development.*

1. Introduction

The facilitator will introduce a dilemma for workshop discussion. How can we cover the many special needs found in the mainstream classroom in the core curriculum for teacher education? One way forward is to identify the main commonalities shared by children with special needs and to develop a component in the mainstream teacher training curriculum on supporting these common needs.

2. Objectives

- To identify the issues which affect many children with special needs (eg exposure to exclusion and teasing; frustration induced rages; the importance of individual interests and skills; self esteem etc.)
- To identify the teacher skills relevant to the issues identified.
- To brainstorm ideas for the development of a core training module based on the foregoing identifications.
- To suggest relevant school policies and practices

3. The Common Issues for Children with Special Needs

The workshop participants will identify key common issues for children with special needs and categorize these into a useful taxonomy. (eg cognitive, emotional, behavioral...)

4. Training the Supportive Teacher

The workshop participants will discuss how the taxonomy of common needs can be translated into training supportive teachers. How can we most effectively train teachers into the necessary awareness and skills to encourage this crucial classroom support.

4.1. The School as a Whole

What school policies and practices would address the shared needs of all their pupils' special needs.

References

- (1) Hanks, R, (2010). *Common SENse for the inclusive classroom*. London. Jessica Kingsley.
- (2) Leicester, M, (2007). *Special Stories For Disability Awareness, Stories and activities for teachers, parents and professionals*. London: Jessica Kingsley.

THE PHILOSOPHY OF ENGINEERING AND EDUCATION

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Abstract

The philosophy of engineering is a relatively new philosophical enterprise. Philosophers and engineers have begun to explore relevant conceptual, epistemological, ontological and ethical questions. (The ethical questions have received most attention to date). However, the educational implications of these explorations have received little attention. What are the implications for the curriculum of engineering students? What are the implications for philosophy students? This session will provide the opportunity to reflect on these educational implications, drawn from the philosophy of engineering, to the potential enrichment of both engineering and philosophy.

Keywords: *Philosophy, Engineering*

1. Introduction

The facilitators will introduce the workshop using a power point presentation. They will cover why the topic is important and relevant and set out the discussion points to be covered.

2. Objectives

The main objective of the workshop is for all participants to share their ideas about philosophy and engineering so that we can develop our collective knowledge of this emerging agenda.

3. Discussion Point One: "Engineering"

We will analyze the concept of engineering. What are its essential characteristics? How can we distinguish between science and engineering? How can we distinguish between engineering and technology?

4. Discussion Point Two: The Ethics of Engineering (the area with most work to date)

What ethical issues commonly face the engineer?

4.1. Branches of Philosophy

The issues for engineering in philosophy of science, epistemology and ontology. Other branches?

5. Final Part of the discussion

What are some educational implications of the above discussions?

What are the implications for the education of engineers

How can both engineering and philosophy be enriched by the development a philosophy of engineering

References

- (1) Poel, I, & Goldberg D (Eds). (2010). *Philosophy and Engineering*. London & New York: Springer.
- (2) Leicester, M, & Twelvetrees R, Bowbrick P. (2007). Philosophical Perspectives on Lifelong Learning: Insights from Education, Engineering and Economics. In D.N.Aspin (Ed.), *Philosophical Perspectives on Lifelong Learning* (258 to 274). The Netherlands: Springer.

LEARNING THAT MAKES A DIFFERENCE: PEDAGOGY AND PRACTICE FOR LEARNING ABROAD

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Abstract

As we step into the 21st century human society faces significant new challenges surrounding issues in human health; global security; environmental devastation; human rights violations; economic uncertainty; population explosion and regression; recognition of diversity, difference and special populations at home and abroad. In light of these challenges, there is a great opportunity, and a great need, for education that “makes a difference.” This workshop deals with several key pedagogical concepts established in the work of pedagogical trailblazers John Dewey, Paulo Freire and Jack Mezirow synthesized in relation to learning abroad and organized to propose a basic framework for all learning abroad programs concerned with “making a difference” and transforming how students think about and engage with complex global issues.

Keywords: *Learning abroad, pedagogy, globalization, social justice*

As we step into the 21st century human society faces significant new challenges surrounding issues in human health; global security; environmental devastation; human rights violations; economic uncertainty; population explosion and regression; recognition of diversity, difference and special populations at home and abroad. In light of these challenges, there is a great opportunity, and a great need, for education that “makes a difference.”

UNESCO defines the internationalization of higher education as “the variety of policies and programs that universities and governments implement to respond to globalization. These typically include sending students to study abroad, setting up a branch campus overseas, or engaging in some type of inter-institutional partnership” (Altbach, Reisberg, & Rumbley, 2009). As universities and colleges increasingly promote learning abroad programming, there is an urgent need to establish best practices and programming models that support student learning while avoiding neo-colonial tendencies of patronization and cultural hegemony. Through a synthesis of some of the key pedagogical concepts established in the work of pedagogical trailblazers John Dewey (1897, 1969 [1897], 1978 [1903], 1981 [1934]), Paulo Freire (2005 [1970]), and Jack Mezirow (1981, 1990, 1991, 1997, 2000, 2012), this workshop proposes a pedagogical framework that, when applied to the context of international learning experiences, has the potential to support transformative learning that “makes a difference” in how students think about and engage with complex global issues.

1. A synthetic approach

At the most basic level, drawing on the core ideas identified in Dewey, Freire and Mezirow discussed in the workshop, all learning abroad programming should incorporate the following four points of praxis for learning abroad. Ideally each program should be further nuanced and particularized to accommodate the learners, the type of experience abroad, and the community partners with whom students will co-learn. These points offer a starting place for thinking about further fine-tuning that will ultimately benefit all parties.

1.1 Intentional, guided inquiry

Educators should facilitate student preparation for learning abroad by exposing them to learning materials and social contexts that are personally and culturally relevant to them and their goals for going abroad. This first step serves as a means to identify and critically assess their own frames of reference, values, and assumptions before interacting with hosts abroad. This step might entail reading about their learning environment, meeting with individuals from a different part of the world, or engaging in activities similar to those they will experience abroad. Alternatively, participating in activities that will simulate the social dislocation and disorientation they might experience going into the international setting or a foreign language environment are helpful settings for stimulating critical self-reflection.

1.2 Critically reflexive interaction

Students should engage in the discursive process of challenging, reassessing, critiquing, adapting and expanding their newly identified habits of mind with a view to understanding how they might help or hinder learning in the international setting and also how these might impact partners abroad as a culturally invasive or oppressive point of view; this process should be facilitated by an educator prepared to attend to students' intellectual and emotional responses to their experiences and willing to help students explore alternative responses for understanding their learning journey. Students should be helped to pursue an attitude of humility and unpretentiousness as they enter the host environment.

1.3 Dialogical conscientization

Building on the thoughtful openness developed in stage two, once in the foreign learning environment, students should have opportunities to continue the process of critical reflection and dialogue with their collaborators abroad. This may include obtaining new knowledge, having new experiences that confirm or overturn previously held assumptions, and engaging in dialogue that permits a critical assessment of one's psycho-emotional responses to those experiences. Even in the absence of local collaborators, students can continue the process through journal writing and correspondence with other learners.

1.4 Action oriented re-framing

Finally, students should be supported on their return through a continuation of the critically reflective and discursive process and helped to develop new frames of references that can be sustained in their everyday lives. In this stage they should be encouraged to track the development of their own awareness, identify new competencies, acknowledge cognitive or emotional challenges resulting from the experience abroad, and begin to identify competencies that might facilitate active responses to the new perspectives developed in the learning process.

As a progressive sequence that seeks to be empowering and non-oppressive, the entire learning experience must be undertaken in a context of solidarity between the educator, the student, and partners abroad. Students must be helped to move beyond egoism and humanitarianism, partners abroad should be empowered to act as co-educators and co-learners rather than objects to be used for a privileged foreigner's learning experience, and educators must be willing to lead without dominating. In this model the learning experience becomes a culturally-relevant, socially-situated, collaborative process of empowerment.

2. Conclusion

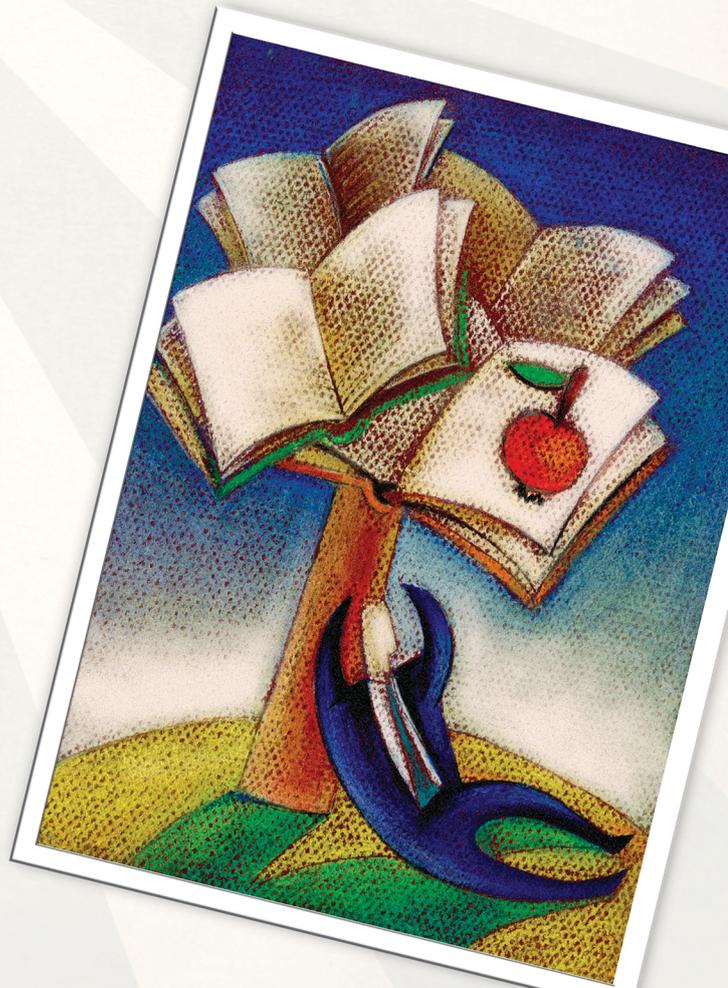
Globalization, transnationalism and internationalization have become hallmarks of the 21st century. Recent regional and global events such as the youth riots in the United Kingdom, civil unrest across the Arab world, the Occupy incidents, and other events are prominent examples of the various social, economic and political challenges we now face. They are also powerful reminders of why we need to ensure our young people have meaningful, well-informed opportunities to engage critically with global perspectives. The insights students develop in learning abroad programs have implications for global interests by helping them to engage some of the most complex problems facing 21st century societies.

Students who participate in international learning programs, many of which are based in the developing world and expose them to some of the challenges identified above, can gain the advantage of first-hand experience with some of these concerns. However, without a robust and carefully-considered pedagogical framework for reflecting on and interpreting their experiences abroad, students will be no better equipped to understand or engage with these complex problems. Furthermore, inadequate preparation may result in students developing unfair, misinformed or even oppressive interpretations of the social contexts in which they are learning. Educational institutions offering learning abroad programming have an obligation to deliver them within an appropriate framework of pedagogy and practice that can facilitate engagement between the student and the host community, provide opportunities for on-going reflection and dialogue, and support the student through a potentially transformational learning experience.

References

- Altbach, Philip G., Reisberg, Liz, & Rumbley, Laura E. (2009). *Trends in global higher education: Tracking an academic revolution*. A report prepared for the UNESCO 2009 World Conference on Higher Education. Paris: UNESCO.
- Dewey, John. (1897). My pedagogic creed. *School Journal*, LIV(3, January 6), 77-80.
- Dewey, John. (1969 [1897]). The ethics of democracy. In J. A. Boydston (Ed.), *The Early Works of John Dewey, 1882-1888* (pp. 237-246). Carbondale IL: Southern Illinois University Press.
- Dewey, John. (1978 [1903]). Democracy and education. In J. A. Boydston (Ed.), *The Middle Works of John Dewey, 1899-1924* (Vol. 3, pp. 229-239). Carbondale IL: Southern Illinois University Press.
- Dewey, John. (1981 [1934]). Can education share in social reconstruction? In J. A. Boydston (Ed.), *The Latre Works of John Dewey, 1925-1953* (Vol. 9, pp. 205-209). Carbondale IL: Southern Illinois University Press.
- Freire, Paulo. (2005 [1970]). *Pedagogy of the Oppressed* (Myra Bergman Ramos, Trans.). New York NY: Continuum.
- Mezirow, Jack. (1981). A critical theory of adult learning and education [Electronic version]. *Adult Education*, 1(3-24).
- Mezirow, Jack. (1990). *Fostering Critical Reflection in Adulthood*. San Francisco CA: Jossey-Bass.
- Mezirow, Jack. (1991). *Transformative Dimensions of Adult Learning*. San Francisco CA: Jossey-Bass.
- Mezirow, Jack. (1997). Transformative learning: Theory to practice [Electronic version]. *New Directions for Adult and Continuing Education*, 74(summer), 5-12.
- Mezirow, Jack. (2000). *Learning as Transformation: Critical Perspectives on a Theory in Progress*. San Francisco CA: Jossey-Bass.
- Mezirow, Jack. (2012). Learning to think like an adult: Core concepts of transformation theory. In E. W. Taylor & P. Cranton (Ed.), *The Handbook of Transformative Learning: Theory, Research and Practice*. San Francisco CA: Jossey-Bass.

ROUND TABLE



LONG TERM CHANGES IN SCHOOL THROUGH COMMUNITIES

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Abstract

Reasons are recalled urging for spreading and fostering the most meaningful educational experiences that are in progress in the world, where communities and local civic and cultural institutions are involved in young people education.

Hints are provided to move the educational system to renovation and urging for a cross regional meeting, for the realisation of an Observatory, which main aim will be to harmonize endeavours and promote the change by leading out analysis about resources and potentialities of the whole community's background.

Keywords: *Community education, peer education, service learning*

1. Introduction

The so widely called change in the young people education cannot be imposed by a national government and cannot be pursued by teachers alone. Rather it is up to the whole community to sustain the change, fully aware of the treasure of resources the young people hold and their expectations to play their part in society.

Much more than spending money to purchase the latest technology inventions or improving contents, it is therefore urgent we all take a wider sight at the issue, so as to invest our energy into building a motivating environment and let everybody feel to be part of his/her community.

Everybody would gain from an environment in which personal growth is intertwined with many kind of relationships.

Unfortunately, we are still far from that, except for several happy, local, situations. It is therefore important that high school teachers already aiming at improving the very educational aspects of their work to be supported by community cultural associations and by local civic institutions.

The change will be boosted to the extent that society is aware of the need to take active part in it.

A civil society more closely involved in youth education, witnessing adults taking an active part together with teachers, would result in a twofold advantage. On one side, teachers' work, the efforts they put in maintaining a good personal relationship with the students would be better appreciated; the highly effective learning solutions teachers, exploiting their peculiar attitudes, sometimes work out in response to the context would be easily recognized.

On the other side, opportunities for young people to play responsibility roles for their community would considerably increase, thus opening schools to the service learning methodology¹.

Moreover, the heavy reorganization the educational environment implied by such transformation could also give rise to a more integrated contribution of teachers to the cultural growth of their community.

¹About the 'service learning' methodology see, for example *Service learning widespread in Latin America: working hand-in-hand for a common cause is characteristic of service*, by Maria Nieves Tapia (2010).

2. A perspective for today's world

Although a growing number of remarkable experiences are reported from many places², that is yet not enough to spark off the global change, because such stirring is made of scattered, loosely connected and often short lived experiences.

Enhancing awareness of the ground principles, shared by those personally involved in improving education and building a broad view where the variety of experiences can be accommodated and strengthen each other would be highly desirable.

To pursue such aim, we are gathering a promoters group, to work at forming an authoritative Council committed in fostering the most effective experiences improving young people education and in bringing possibilities of the fabric of society to light, that is to discover the resources that communities can provide to school.

Such commitment can be successful only to the extent to which the school community's feeling about ground principles is straightforward, regardless of cultures and beliefs.

Although our scope is currently limited at the Italian panorama, we think that an international Observatory would be advisable.

3. Basic points

Useful hints and directions towards a better school system would surely come both from the in progress experiences and from the analysis of the potentiality of the community's background. Here are a few major points that could be considered:

- What can the community offer to the education of the young people? Identifying all possibilities, in terms of availability, safe spaces, services and facilities, hence encouraging parts to meet. In this regard, it is important that social classes meet directly with teachers rather than going through school administrators.

- What can the teachers offer the community? Conditions to put teachers' competences to good use should be put in place. The best cases should be publicized and taken as models.

- What can the school students offer the community they belong to? Which expertise can they offer, under teachers' supervision?

4. Peer education

Practical proposals could be framed into the peer education methodology.

Since it has been proved that students can effectively learn in the absence of a teacher, one can safely guess that such possibility could be exploited in places outside the school as well.

Out of their school, students would be allowed to organize themselves as they prefer, choosing the time and the places. For example, small groups could decide to meet at one member's house, or in rooms provided by local public institutions, guarded by adults.

Arranging school time between school buildings, where students meet their teachers, and outer places would increase young people's sense of responsibility, would strengthen mutual trust and importantly would ease teachers' work. Teachers would find time to meet students selectively in small groups or even individually.

On the other hand, many opportunities would be discovered by social classes to be involved in education, such as it is happening in the UK³. In this country, the schools

²Successful peer tutoring experiences, some of them managed by students themselves, have been recently reported from Italian High Schools. Documentation is still lacking, unfortunately. To gain an insight into what is happening in the Veneto region, where probably the most advanced experiences are running, see: Noi ci Siamo! Percorsi di peer education, Miur Veneto (2011)

can involve parents and volunteers, as well as child minders that cooperate with the teachers in reaching the main achievements of the National Curriculum.

Public institutions, like municipality, hospitals, universities and privates could ask for services in return for facilities and spaces they have provided that would be managed through teachers, to plan the educational path. It is possible to create the most varied opportunities i. e.: sports associations can offer the members learning opportunities through the students, a charity can involve the students in helping people in need. The Asl (the Italian equivalent of the NHS in UK) can ask the students to commit a 'service learning', for example, analyzing water (tap-water) and so on.

5. Preliminary workshops

Schools already implementing educational solutions of such kind could be encouraged to set up meetings with teachers and institutions from the local area, to describe their activities, to prompt other organizations or associations to join and to consider what can be realized in other schools.

References

- Bertagna, G. (2010). *Dall'educazione alla pedagogia. Avvio al lessico pedagogico e alla teoria dell'educazione*. Brescia: Editrice La Scuola
- Corsi, M. (2003). *Il coraggio di educare. Il valore della testimonianza*. Milano: Vita e Pensiero
- Damiano, E. (2003). *L'azione didattica. Per una teoria dell'insegnamento*. Roma: Armando Editore
- Domenici, G. (2003). *Manuale della valutazione scolastica*. Bari: Laterza
- Fiorani, H. (2013). How to Bring Together Two Generations so Distant in Age, yet so Close by Heart: A Case Study of the LAGR project. In P. Pumilia-Gnarini, E. Favaron, L. Guerra, E. Pacetti, & J. Bishop, *Handbook of Research on Didactic Strategies and Technologies for Education: Incorporating Advancements* (p. 379-387). United States of America: IGI Global
- Fullan M. (2005), *Fundamental Change International Handbook of Educational Change*, Springer 2005
- Hacking, I. (1999). *The social construction of what?* Cambridge: Harvard University Press
- Hardy, S. (2009). Teaching Mediation as Reflective Practice. *Negotiation Journal*, Vol. 25, Issue 3, pages 385–40
- Hay, K. E. (1991). Legitimate Peripheral Participation, Instruction, and Constructivism: Whose Situation Is It Anyway? *Educational Technology*, 33, 3, pp. 33-38
- Iaquinta, T. (2005). *La scuola laboratorio. La teoria deweyana e l'interpretazione di Francesco De Bartolomeis*. Edizioni Scientifiche Calabresi
- Osborne, J. F. (1996). Beyond Constructivism. *Science Education*, 80, 1, 53-82.
- Shulmann, L. (1987). *Knowledge and teaching: Foundations of the new reform*. Harvard Educational Review
- Perrenoud P. (2002), *Dieci nuove competenze per insegnare. Invito al viaggio*, Anicia
- Taber, K. S. (2006). Beyond Constructivism: the Progressive Research Programme into Learning Science. *Studies in Science Education*, 42, pp. 125-184
- Wald P. J., Castleberry M. S. (2010), *Insegnanti che apprendono - Costruire una comunità professionale che apprende*, LAS Editrice

³In the UK, regular inspections are carried out in schools to test the system of education. For more informations you can visit the website: <http://www.ofsted.gov.uk/>

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