



BOOK OF ABSTRACTS

Edited by
Mafalda Carmo



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BRIEF CONTENTS

Foreword	v
Organizing and Scientific Committee	vii
Keynote Lecture	xi
Index of Contents	xiii

FOREWORD

Dear Colleagues,

We are delighted to welcome you to the International Conference on Education and New Developments 2019 - END 2019, taking place in Porto, Portugal, from 22 to 22 of June.

Education, in our contemporary world, 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. This 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 2019 received 547 submissions, from more than 50 different countries, reviewed by a double-blind process. Submissions were prepared to take form of Oral Presentations, Posters, Virtual Presentations and Workshops. The conference accepted for presentation 135 submissions (25% acceptance rate). The conference also includes a keynote presentation from an internationally distinguished researcher, Prof. Dr. Denise Whitelock, Professor of Technology Enhanced Assessment and Learning, Institute of Educational Technology, The Open University, UK, to whom we express our most gratitude.

This volume is composed by the abstracts of the International Conference on Education and New Developments (END 2019), organized by the World Institute for Advanced Research and Science (W.I.A.R.S.). 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**: Critical, Thinking; 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, Corporate Education.

The abstracts 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.

We would like to express thanks to all the authors and participants, the members of the academic scientific committee, 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), Portugal
Conference and Program Chair

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KEYNOTE LECTURE

ASSESSMENT FOR LEARNING: WHERE ARE WE ON THE DIGITAL ASSESSMENT SPECTRUM?

Prof. Dr. Denise Whitelock

(B.Sc. M.Ed Ph.D)

*Professor of Technology Enhanced Assessment and Learning, Institute of Educational Technology,
The Open University (United Kingdom)*

Abstract

Digital assessment is an evolving construct used in education to enrich, inform and complement the teaching process. Using automatic feedback however has been under-utilised and under-valued throughout the assessment process. This presentation will take you through a number of projects which have automated some aspects of assessment.

Those selected from my own research have a strong conceptual underpinning, for instance Dweck's work to develop Open Comment which provided feedback to Arts students. With Open Mentor, I used Bale's work on interactive categories to help tutors develop effective and supportive feedback. SafeSea, on the other hand, allows students to trial essay writing before taking the sometimes daunting step of submitting their first essay, using analysis based on Pask's conversational framework.

This presentation will discuss the issues raised by teachers and students in this arena. It will provide examples of how their concerns are currently being addressed by both researchers and software developers in order to support educator feedback to students. Finally, the issue of potential disruptors will be raised which moves us into the realm of crystal ball gazing.

Biography

Professor Denise Whitelock has over twenty years experience in designing, researching and evaluating online and computer-based learning in Higher Education. She is a Professor of Technology Enhanced Assessment and Learning in the Open University's Institute of Educational Technology. She is currently leading the UK's contribution to the Adaptive Trust e-Assessment System for Learning (TeSLA) <http://tesla-project.eu/project>. She has just completed directing the CODUR http://in3.uoc.edu/opencms_in3/opencms/webs/projectes/codur/en/index.html and SAFeSEA <http://www.open.ac.uk/researchprojects/safesea/projects>. The aim of this latter research was to provide an effective automated interactive feedback system that yields an acceptable level of support for university students writing essays in a distance or e-learning context. Her work has received international recognition as she holds visiting chairs at the Autonomia University, Barcelona and the British University in Dubai.

Website: <https://iet.open.ac.uk/profiles/denise.whitelock>

INDEX OF CONTENTS

ORAL PRESENTATIONS

Teachers and Students

Can a Digital Guided Peer Feedback System Foster Learning	3
<i>Omid Noroozi, Javad Hatami, & Arash Bayat</i>	
A Study on E-Learning in Small Online Discussion Groups and Experimental Design in Advanced Level Biology	3
<i>Mariella Caruana, & Liberato Camilleri</i>	
A CPR Model for Modified Music Standards in Professional Music Training: The Case of TUT	4
<i>Hua Hui Tseng</i>	
Some Demographic, Personal and Class Characteristics as Predictors of School Climate	4
<i>Maja Brust Nemet, & Tena Velki</i>	
Teaching Law in Teacher's Training – Early Experiences of a Pilot Course in Eötvös Loránd University	5
<i>Zoltán Rónay</i>	
Teaching under a Tree, the Rural Reality in Malawi	6
<i>Gulla Erlendsdóttir, Allyson Macdonald, Svanborg Rannveig Jónsdóttir, & Peter Mtika</i>	
(Re)Constructing Personal Teaching Metaphors in a Brazilian Teacher Initiation Project	6
<i>Ana Carolina de Laurentiis Brandão</i>	
Creative Teaching and Teaching for Creativity in Visual Arts Subject	7
<i>So Lan Wong</i>	
Sometimes Students Make the Best Teachers: Developing and Enhancing Graduate Skills	8
<i>Ann Gow</i>	
Sexuality Education and Teacher Training in Portugal	8
<i>Filomena Teixeira, Ana V. Rodrigues, & Diana Oliveira</i>	
Preservice Teachers' Expectations of Professional Conversations on Professional Experience in Schools	9
<i>Denise Beutel, Donna Tangen, & Rebecca Spooner-Lane</i>	
Digital Literacy of Primary Education Teachers in the Area of Digital Safety	9
<i>Lukasz Tomczyk</i>	
A Simultaneous Nonparametric Weighted Skill and Misconception Diagnosis Model for Learning	10
<i>Pei-Jyun Hsieh, & Cheng-Hsuan Li</i>	
AI Classroom Analysis System for Language Teaching Development	10
<i>Hiroki Ishizuka, & Akio Onishi</i>	
The Influence of Differentiated Assignments (Scaffolding Methods) on First-Year Students-Teachers' Academic Progress	11
<i>Thelma de Jager</i>	

Understanding Why Some Future Teachers Find it so Difficult to Follow Written Instructions	11
<i>Janaina Cardoso</i>	
An Introduction to the AEPS-3 and Results of a Field Test Study	12
<i>JoAnn (JJ) Johnson, & Marisa Macy</i>	
Investigating Non-Academic Correlates of Goal Commitment for Academic Achievement at Higher Education Level	12
<i>Meral Şeker, & Nilgün Tatar</i>	
Cultural Models of Disability. An Exploratory Qualitative Study on the Pre-Service Teachers' Attitudes and Social Representations	13
<i>Andrea Fiorucci</i>	
Social Networking for Life-Long-Learning with Quality Management Aspects in Technical Teaching	13
<i>Sonja Gögele</i>	
Oops! The Critical Role of Risk-Taking and Failure in Educational Change and Teacher Education	14
<i>Maya Wizel</i>	
Combining Language and Culture Learning in Teacher Education at Martin Luther University Halle Wittenberg	14
<i>Peter Grüttner, Anne Julia Fett, & Susanne Schütz</i>	
Benefits of Class Tests and Continuous Assessment in Higher Education Mathematics	15
<i>Carlos Fresneda-Portillo, & Lucía Sagredo-Sánchez</i>	
Oral Assessments: Encourage Students' Mathematical and Statistical Talking	15
<i>Anne D'Arcy-Warmington</i>	
Prospective Childhood Pedagogy Specialists' Experiential Learning Trends in Practical Studies at the University	16
<i>Remigijus Bubnys</i>	
Clap Hands, Training Professionals to Promote Disabled People Labor Inclusion in Arts and Culture	16
<i>Imma Miralles</i>	
Using an Assessment Rubric for Feedback and Learning: A Conceptual Study	17
<i>Vidar Gynnild</i>	
ICT Competences for Educational Innovation: A Teacher Training Program in Colombia	17
<i>David Castro-Garcia, & Fredy Andrés Olarte Dussán</i>	
Preventing Spectators in a Group-Work: Civil Technology Student's Perspective	18
<i>Khojane Geoffrey Mokhothu</i>	
Self-Assessment Through the Metacognitive Awareness Process in Reading Comprehension	19
<i>Katerina Kasimatis, & Theodora Papageorgiou</i>	
Virtual Reality E-Learning Environment for Motivating Pre-Service Teachers to Learn Information Technology	19
<i>Gyöngyi Bujdosó, Fruzsina Aranyi, Ovidiu Constantin Novac, & Mihaela Novac</i>	

The Association Between Bullying, Maltreatment, and Personality Traits Among Adolescents from Armenian Schools in Lebanon	20
<i>Manoug Ibitian, & Ahmad Oweini</i>	
Beliefs and Actions of Faculty Members of Sport Science and Physical Activity Regarding Student Motivation: Keys to an Inclusive Pedagogy	20
<i>Ruth Cabeza-Ruiz, Noelia Melero, Víctor M. Molina, Carmen Márquez, Beatriz Morgado, & Nieves Sánchez-Díaz</i>	
 <u>Projects and Trends</u>	
The Inclusion of Children with Special Needs in Early Childhood: Challenges and Dilemmas of Kindergarten Teachers	22
<i>Aviva Dan</i>	
The Application of Mobile Devices in Active Learning at the University: A Review of Literature	22
<i>María del Rocío Carranza Alcántar, Bertha Margarita González Franco, Claudia Islas Torres, Alma Azucena Jiménez Padilla, & Mónica Lizbeth Maciel Gómez</i>	
Adjusting School Environment for Children with Profound and Multiple Disabilities	23
<i>Manuela Sanchez-Ferreira, Mónica Silveira-Maia, & Silvia Alves</i>	
Identification of School Depended Factors, which can Affect Students' Performance on Assessments	23
<i>Marcin Fojcik, Martyna Fojcik, June Audsdotter Stafnes, & Bjarte Pollen</i>	
Representations of the Digital Skills of High School Students: A Qualitative Research	24
<i>Claudia Islas Torres, Sergio Franco Casillas, María del Rocío Carranza Alcántar, & Alma Azucena Jiménez Padilla</i>	
The Use of Interactive Whiteboards in South African Schools	25
<i>Maryke Mihai</i>	
HOMO'POLY: Understanding and Acceptance of Diversity	25
<i>Oliver Holz, & Lotte Geunis</i>	
Learning Seventh Grade Mathematical Planar Rectangular Coordinate System by Computational Thinking	26
<i>Yi-Jin Ju, Cheng-Hsuan Li, Bor-Chen Kuo, & Pei-Chen Wu</i>	
Preparing Students in Japan for Study Abroad: Overcoming Cultural Misunderstandings	26
<i>Lisa Winstead, & Brian Howell</i>	
The Effects of Learning Styles of Pre-Service Teachers on their Skills to Prepare Sketchnotes	27
<i>Nilgün Tatar, & Meral Şeker</i>	
Multilingualism, Intercomprehension and Inclusion: The Lecturio + Project and the Dyslexic Student	27
<i>Stefania Pinnelli, Andrea Fiorucci, Clarissa Sorrentino, & Marina De Nunzio</i>	
Challenge Based Learning: An Educational Proposal for Social Transformation	28
<i>Mariano Sánchez Cuevas</i>	
A Game-Based Model to Enhance Learning at University	28
<i>Martina Marsano</i>	

The Use of the Renzulli-Hartmann Rating Scales (2010) with Italian Teachers. Preliminary Data from a Correlation Analysis <i>Clarissa Sorrentino</i>	29
Leveraging Educational Software with Exploration Guides in Higher Arts Education: The Videolab Simulation Case Study <i>Eduardo Morais, Carla Morais, & João C. Paiva</i>	29
What do Educational Professionals Think about Giftedness? An Analysis of Attitudes and Representations <i>Stefania Pinnelli, Andrea Fiorucci, & Clarissa Sorrentino</i>	30
Teaching CLIL in High School: A Comparative Case Study in Trentino Alto-Adige <i>Cristina Rebek</i>	30
Teaching Situated Design Methods: A Case Study <i>Sarah Lugthart, & Michel van Dartel</i>	31
Revitalizing Higher Education: How to Make Every Course Count as an Opportunity to Produce Valuable Research <i>Mikkel Snorre Wilms Boysen, Malene Børgesen, Katrine Louise Gellert Løth, Astrid Hestbech, & Mette Højby Germansen</i>	31
Combining Different Subjects from an Industrial Chemical Engineering Bachelor's Degree for Advanced Knowledge Acquisition <i>Junkal Gutierrez, Zuriñe Gómez de Balugera, Josune Amurrio, Arrate Santaolalla, & Gorka Gallastegui</i>	32
From Cultural to Intercultural Competence: Recent Approaches to Teaching Culture in the Foreign Language Classroom <i>Charles Elkabas</i>	33
The University is Flat: The International Perspectives on Teaching Initiative <i>Andrew R. Gillespie, James E. Groccia, & Jennifer L. Mason</i>	33
E-Engineering: Teaching Electrical Engineering at Distance <i>Manuel Gericota, Guillaume Andrieu, Manuel Castro, Paulo Ferreira, & Andre Fidalgo</i>	34
Threats and Opportunities on the Current Czech Market with University Education <i>Jiří Pavelka</i>	34
School Problems and Teachers' Collaboration: Before a Collaborative Problem Solving Program <i>Alexandra Ataíde, Isabel Souto, & Anabela Pereira</i>	35
Rethinking Learning in the Light of Digital Transformation at the Austrian Secondary Colleges for Agriculture and Forestry – Why and How? <i>Erika Quendler, & Matthew James Lamb</i>	36
Development of Interdisciplinary Instruction Using Inquiry Based Science Education <i>Eva Trnova</i>	36
It Takes a Village: Igniting the Scientist in Lower Track Students Through Partnerships <i>Sen Kee Peter Seow, Chew Lee Teo, Chin Fen Ho, Kei Xian Tan, Frederick Toralballa Talaue, & Wei Loong David Hung</i>	37
Educating Designers to Sustainable Innovation. A Reflection on the Contribution of Design in Projects with Social and Environmental Impact <i>Adriana Fernandes, Barbara Rangel, Jorge Lino Alves, & Belmira Neto</i>	37

Built Environment Education for Young People: Architects and Urban Planners Using Cultural Heritage as a Learning Resource	38
<i>Marta Brković Dodig, Sarah Klepp, & Angela Million</i>	
Flipped for Critical Thinking: Evaluating the Effectiveness of a Novel Teaching Approach in Postgraduate Law Modules	38
<i>Margaret Liu</i>	
Use of Behavior Management Strategies in Children With and Without Disabilities: A Comparative Study of Greek Parents' and Teachers' Opinions	39
<i>Pagona Leonidou, & Lefkothea Kartasidou</i>	
Individual Support for Independent Learning at the Language Center at UNIL: From Teaching to Advising	39
<i>Marie-Dominique Marcant</i>	
Self-Efficacy and Attributional Style in Gifted Students	40
<i>Elena Abbate, & Stefania Pinnelli</i>	
Personal and Educational Values of Pupils from Different Cultural Backgrounds: Compatibility or Conflict?	41
<i>Iva Staňková, & Lenka Venterová</i>	
Faculty's Training for an Inclusive Pedagogy	41
<i>Ana Doménech, Maria-Dolores Cortés-Vega, Arcia Aguirre, Anabel Moriña, Marta Sandoval, & Hugo Perera</i>	
Enable- ASC: Enabling Collaboration in the ASC Classroom with Young Children and Touchscreen Devices	42
<i>Chrysoula Mangafa</i>	
Design of a Supporting System for Educational Improvement with Active Learning Approaches	43
<i>Yuriko Ishida, & Ryuichi Matsuba</i>	
MOOCs as a Key Strategy for University Orientation	43
<i>Ilaria Merciai, & Ruth Kerr</i>	
Making a Difference: The Tale of Recycling Efforts of an Individual Staff Member at an HBCU	44
<i>Alice E. Stephens</i>	
 <u>Teaching and Learning</u>	
Relationship Between Item Difficulty Level and Item Discrimination in Biology Final Examinations	45
<i>Marthese Azzopardi, & Carmel Azzopardi</i>	
The Effects of Implementing the Sydney School Genre-Based Approach in a Thai EFL Writing Classroom	45
<i>Napak-On Srirakarn</i>	
Creating Contemporary Picture Short Stories Using Intertextual Heroes & Plot Subversion: An Empirical Research	46
<i>Christina Kalaitzi</i>	

Self-Monitoring and Peer Feedback Strategies: Challenges and Opportunities in the EFL Writing Class	46
<i>Thanakorn Weerathai</i>	
Academic's Participation on Collaborative Research on the Chinese Mainland	47
<i>Manhong Lai</i>	
What Makes Autonomous Learning Objectives Autonomous: A Case Study from Higher Education	47
<i>Jitka Hlouskova</i>	
Exploring the Impact of a Swiss Bilingual Program Through a Mixed Method Design	48
<i>Emile Jenny, & Francesco Arcidiacono</i>	
Assessing the Effectiveness of Technological Tools in Teaching and Learning English as a Second Language	48
<i>Yu Zhao, María Cruz Sánchez Gómez, & Ana María Pinto Llorente</i>	
Methodological Creativity in Pedagogical Research – Global Challenge	48
<i>Snježana Dubovicki</i>	
Seeing, Reading and Listening to Gender Inequality/Equality in Video Clips	49
<i>Arminda Sousa, & Filomena Teixeira</i>	
A Perceptual-Cognitive Program to Train Soccer Players' Decision Making	50
<i>Julien Glaude-Roy, & Sacha Stoloff</i>	
Quantification of Critical Thinking Skills After with Computer Quiz Games in an Introductory Science Course	50
<i>Szu Szu Ling, Fabrice Saffre, Deborah Gater, Lilia Halim, & Abdel F. Isakovic</i>	
Evaluation of an Online Learning Resource for Nursing Students Preparing for an Emergency Department Clinical Placement Using Kirkpatrick's Model	51
<i>Darren Falconer, Helene Metcalfe, & Jeffrey Hamdorf</i>	
Maths Anxiety: Further Complicated by Spreadsheet Shock?	51
<i>Joanne Smailes, & Carlos Fresneda-Portillo</i>	
Sociocultural and Interactionist Approaches to Second Language Acquisition: Are they Compatible?	52
<i>Richard S. Lavin</i>	
How Can Student Peer Assessment be Used to Improve the Quality of Student Learning?	52
<i>Edina Kulenovic</i>	
Human Being Development Through Holistic and Complex Approach	53
<i>Tegwen Gadais, Michel-Alexandre Rioux, & Roger Boileau</i>	
Our Teachers: Collected Memories of Primary Education in Derbyshire Schools from 1944 - 2009	53
<i>Fiona Shelton</i>	
English for Specific Purposes – Challenges for Post-Graduation Outcomes	54
<i>Rodica Silvia Stan</i>	
A Video Recommendation System for English Self-Directed Learning	54
<i>Pei-Ling Tsai, Cheng-Hsuan Li, & Shih-Yen Hung</i>	
Critical Thinking in Digital Natives: A Doctoral Research Through a New Taxonomy	55
<i>Maria Caterina De Blasis</i>	

French Immersion Teacher and Student Perceptions About Science Instruction in a Second Language Setting	55
<i>Yovita Gwekwerere, & Ginette Roberge</i>	
Enhancing Understanding of Historical Time in Primary Classes: How to Improve the Curriculum in Lithuania?	56
<i>Aušra Žemguliė</i>	
Exploring Students' Reflective Narratives on Language as the Subject of their Studies	56
<i>Loreta Chodzkienė</i>	
Community Experiences Through Peer Interaction Rituals of a Mongolian-Korean Child in the Preschool Classroom	57
<i>Gab-Jung Yoon, & Kai-Sook Chung</i>	
Critical Thinking in Design	57
<i>Marilyn DeLong</i>	
Higher Arts and Design Students' Attitudes Towards Learning Computer Programming	58
<i>Eduardo Morais, Carla Morais, & João C. Paiva</i>	
Low-Cost Code to Check Some of the 20 Rules for Efficient Web Writing: A Problem-Based Learning Situation	58
<i>Lina García-Cabrera</i>	
Content Based Instruction in the Foreign Language Classroom: Challenges and Barriers in the Context of an American Public School of the State of Massachusetts	59
<i>Ana Henriques</i>	
Overview of Design Teaching on Engineering Courses: A Comparative Study Between Brazil and Portugal	59
<i>Claudia Alquezar Facca, Jorge Lino Alves, & Ana Mae Barbosa</i>	
Affect and Cognition: Does Gender Impact Students' Motivation in Second Language Learning?	60
<i>Christine Besnard</i>	
Literacy Application in Disciplinary Pedagogical Practices at Legal Environment	60
<i>David Alberto Londoño-Vásquez, & Alvaro Ramírez-Botero</i>	
Trait and Ability Emotional Intelligence as Predictors of Alcohol Consumption in Adolescence	61
<i>Sara González-Yubero, Raquel Palomera Martín, & Susana Lázaro-Visa</i>	
Model-Based Learning: An Inquiry Approach to Teach Science	62
<i>Tiago Ribeiro, Dulce Lima, Rosely Imbernon, Conceição Pereira, & Clara Vasconcelos</i>	
Emotional Intelligence and Personal Competences as Protective Factors of Alcohol Abuse in Adolescence	62
<i>Sara González-Yubero, Susana Lázaro-Visa, & Raquel Palomera Martín</i>	
Assessing Outcomes in Electricity and Magnetism Courses in Engineering Degrees. Students' Performance Analysed by BEMA	63
<i>Tania Garcia-Sanchez, Roser Sabater I Serra, Ana Vidaurre, José Antonio Gómez-Tejedor, María-Antonia Serrano, José M. Meseguer-Dueñas, Soledad Bernal-Perez, Jaime Riera, José Molina-Mateo, Vicente Donderis Quiles, & M. Amparo Gámiz-González</i>	
Using Classroom Assessment to Improve Pedagogy - the Japanese Experience -	64
<i>Masahiro Arimoto</i>	

Porto Planetarium – Ciência Viva Center: From a Dissemination Program to an Educational Program	64
<i>Ilídio André Costa, Mário João Monteiro, Daniel Folha, Filipe Pires, Elsa Moreira, Ricardo Cardoso Reis, & Hilberto Silva</i>	
Involvement in Homework Throughout the Grade Levels in Secondary Education	65
<i>Bibiana Regueiro, Antonio Valle, Susana Rodríguez, Isabel Piñeiro, Iris Estévez, & Natalia Suárez</i>	
Enhancing Micro Teaching Technique Through the Incorporation of Lesson Study: Perceptions of Initial Teacher Education Mathematics Students at Central University of Technology	66
<i>Ratokelo Willie Thabane</i>	
Parent’s Perception of ‘Play’ and ‘Holistic Development’ in the Early Years	66
<i>Karuppiyah Nirmala</i>	
‘We Love Reading, But...’: Nigerian Children on Factors that Affect their Reading Habits	67
<i>Isang Awah</i>	
Expanding Student Spatial Intuition to Larger Size Scales: A Hybrid Hands-On and Computer Visualization Approach	67
<i>Ned Ladd, Katharyn Nottis, Patricia Udomprasert, & Kristen Recine</i>	
Mathematical Visualization, Manipulatives and Geometric Problem Solving: A Case of Study	68
<i>Caterina Cumino</i>	
Student Evaluation of Transferable Competences and Requirements for their Studies	69
<i>Lucie Smékalová, & Karel Němejc</i>	
 <u>Organizational Issues</u>	
A Visual Content Analysis of School Images and Signs: Their Effect on High School Students	70
<i>Sofia Tsagdi, & Konstantinos Theologou</i>	
“Invisible” Street Children - Educational Perspectives and / or Social Problem	70
<i>Vesnica Mlinarević, & Antonija Huljev</i>	
Teachers’ First Language Use in a Second Language Learning Class Room Environment	71
<i>Pule Phindane</i>	
Institutionalization Proposals of Attention to Diversity at University from the Vision of Leaders	71
<i>Azahara Jiménez Millán, & María García-Cano Torrico</i>	
Involvement in Community-Based Activities of Persons with Profound and Multiple Disabilities	72
<i>Mónica Silveira-Maia, Manuela Sanches-Ferreira, & Sílvia Alves</i>	
The Role of Knowledge Management Technologies at a Polish University – A Case Study	72
<i>Małgorzata Cieciora</i>	
Role of Social Dialogue Within Partnership Approach to European Cohesion Policy and Croatia Experiences	73
<i>Berislav Andrić, Marko Šostar, & Antun Marinac</i>	

Time and Space: Analysis of Education Policy on Managing Diversity in Hong Kong <i>Lo Wai Yin</i>	73
Possibilities of EU Funds in Social Dialogue Development: Case Study of Croatia <i>Marko Šostar, Antun Marinac, & Berislav Andrić</i>	73
School Culture, as an Organisational Culture: The Value Aspect <i>Asta Meškauskienė</i>	74
School Principals as Entrepreneurial Leaders Empowering Parents of Marginalized Populations <i>Devorah Eden</i>	74
The Impact of Agency in the Organizational-Managerial and Educational-Didactic Processes of Scholastic Institutions <i>Milena Pomponi</i>	75
Comparing and Contrasting Sustainability Plans for Taking Their Campuses Green: A Tale of Two Institutions <i>Kelli N.R. Stephens, & Alice E. Stephens</i>	76
Adolescent Bullied 's Life Satisfaction: Personal Competencies and School Climate as Protective Factors <i>Raquel Palomera, Susana Lázaro, Elena Briones, Andres Fernández-Fuertes, & Noelia Fernández-Rouco</i>	76
Educating Future Managers in Social Competencies, in Spain: How Far Have We Got, 20 Years After the Bologna Declaration? <i>Gonzalo Moreno Warleta, Mercedes Rozano Suplet, Alesia Slocum, & Anne Schmitz</i>	77
A (De) Humanising Pedagogy: Let the Teachers Speak <i>Leila Kajee</i>	78
Students' Perception on Higher Education CRM Policy <i>Verica Babić, Marko Slavković, & Marijana Simić</i>	78

POSTERS

Teachers and Students

- Vocational Teachers' Motives for Improvement their Qualification** 81
Daiva Rimkuvienė, & Sigita Daukila
- Mistakes or Error Patterns? The Importance of Error Analysis for Teaching and Learning Mathematics** 81
Silvana M. R. Watson, Lucia M. Tabacu, Laura C. Chezán, Célia Oliveira, & João Lopes
- The Employability of Undergraduates in Taiwan: From the View Point of Enterprises and Themselves** 82
Jen-Chia Chang, Hsi-Chi Hsiao, Su-Chang Chen, & Dyi-Cheng Chen
- A Comparative Study of University Mission Statements Between China and the USA** 82
Zhang Chunyan, Deng Hong, & Wen Songyan
- Motivations and Job Representations of Prospective Physical Education Teachers Starting their Vocational Training** 83
Madisson Bodart, Dimitri Cauchie, & Marielle Bruyninckx
- The Development of Statistical Literacy Assessment Tool for Senior Students in Elementary Schools** 83
Chien-Ming Cheng
- University of the Third Age - University Studies Don't Have to Be Only for the Young** 84
Marcela Göttlichová
- Reading Competency and Metacognitive Knowledge in Primary School Children: An Explorative Survey** 84
Antonella Valenti, Lorena Montesano, Sonia Sapia, Pamela Iazzolino, & Orlando De Pietro
- Does it Add Up? Professional Development for Elementary Math Teachers** 84
Susan Peet, Deborah Wooldridge, Cynthia Bertelsen, & Ken Newbury
- Strategies Used by Physical Education Teachers to Enhance Professional Well-Being** 85
Sacha Stoloff, & Julien Glaude-Roy
- Diving into Minority Stress Theory Within the LGBTQ+ Community** 85
Sydney Downing

Projects and Trends

- The Perception of School Staff and Parents in Regard to the “Enfant Nature” Approach in a Quebec Preschool** 86
Élisabeth Lavallée, Marie-Claude Rivard, & Claude Dugas
- Development of Learning Activity Status Recording System Using the Internet of Things** 86
Atsushi Iwayama, & Yosuke Ito
- Formative Assessment of Global Education -Japanese High School Students' Conceptions of a Global Leader-** 87
Hiromi Ishimori, & Masahiro Arimoto

Preparatory Study of ‘Love for One’s Home’ Education Through Learning Traditional Color Names: Knowledge of the Traditional Color Enhances its Attractiveness	87
<i>Shin’ya Takahashi, & Noriko Aotani</i>	
TESI Project – Needs Analysis and New Software for People with Communication Deficiencies	88
<i>Gabriela-Eugenia Iacobescu</i>	
Inclusive Education of SEN Children in Nursery: Anxiety and Self-Efficacy of Childcare Professionals	88
<i>Marielle Bruyninckx, Dimitri Cauchie, Mélanie Dutrieux, & Maud Regnier</i>	
Cognitive Sciences for Academic Success of Middle School Students	88
<i>Pauline Allix, Amélie Lubin, Céline Lanoë, & Sandrine Rossi</i>	
The Impact of the Erasmus+ Program on the Internationalization of Croatian Viticulture and Enology on the Example of the Polytechnic in Požega	89
<i>Josip Mesić, Tomislav Soldo & Brankica Svitlica</i>	
Creating Civic-Minded Graduates Through Community Engagement	89
<i>Laura Landry-Meyer, Deborah G. Wooldridge, Susan Peet, & Su Yun Bae</i>	
Design your Own Lab Experiments: Project-Based Learning Approach to Teaching Chemical Principles of Engineering	90
<i>Gorka Gallastegui, Juan Jesús López, Jon Alvarez, Arrate Santaolalla, & Junkal Gutierrez</i>	
The Effect of Remedial Instruction Using Adaptive-Learning Platform on Mathematical Achievements of Seventh Graders	90
<i>Shu-Chuan Shih, Jiun-Shian Li, & Bor-Chen Kuo</i>	
Reflective Teaching and Learning Strategies as an Opportunity for Students’ Experience-Based Development	91
<i>Remigijus Bubnys</i>	
Educating for Geoethics: Raising Students’ Awareness and Public Engagement	91
<i>Clara Vasconcelos, Tiago Ribeiro, Maria Luísa Vasconcelos, & Alexandra Cardoso</i>	
Generation Z: Decision-Making Process of Career Choice	92
<i>Blandína Šramová</i>	
Cross-Cultural Education for International Students Who Interact with Japanese People: Practical Learning Using Role-Plays	92
<i>Sachiko Nakano</i>	
Involvement of Attention and Working Memory of Children with ADHD in School-Age	93
<i>Bibiana Regueiro, Tania Vieites, Iris Estévez, Carolina Rodríguez-Llorente, Antonio Valle, & Susana Rodríguez</i>	
Technological Changes in the Work of Accountants and Changes of Education of Accounting Students	93
<i>Cyryl Kotyla</i>	
An Education for All: Arts and Humanities Faculty Members Who Develop an Inclusive Pedagogy	94
<i>Ruth Cabeza-Ruiz, Yolanda Spinola-Elias, Almudena Cotán-Fernández, Rafael Carballo, Rosario López-Gavira, & Inmaculada Orozco</i>	

Teaching and Learning

Lifestyle Habits in a University Context: Students' Point of View	95
<i>Marie-Claude Rivard, Sylvie Ngopya Djiki, Élisabeth Lavallée, François Trudeau, François Boudreau, Alexandre Castonguay, & Émilie Lachance</i>	
Graduate Student Perceptions of Online Learning	95
<i>Aaron R. Deris</i>	
An Analysis on the Intraindividual Difference in L1 and L2 Utterances in the Same Context	96
<i>Noriko Aotani, & Shin'ya Takahashi</i>	
Mathematical Readiness Assessment for First-Year Students	96
<i>Janina Kaminskiene, Daiva Rimkuvieniė, & Eve Aruvee</i>	
The Orchestration of Integrated Activities of Sciences and Mathematics in the 5th Schooling Grade: The Role of Questions	97
<i>Mafalda Guerra, Filomena Teixeira, & Conceição Costa</i>	
Phenomenon of Architecture and its Pedagogical Implications / Research Probe: Paths	97
<i>Pavla Gajdošíková</i>	
Human Being Development: Research Protocol for a Holistic and Complex Review on the Social Dimension	98
<i>Bertrand Dupuy, Roger Boileau, & Tegwen Gadais</i>	
Teaching Process Guideline of Industry-Oriented Off-Campus Internship Curriculum for Technological University	98
<i>Hsi-Chi Hsiao, Su-Chang Chen, Jen-Chia Chang, Dyi-Cheng Chen, & Chun-Mei Chou</i>	
Interactions and Text Production: Benefits for Boys and Girls	99
<i>Natalie Lavoie, & Jessy Marin</i>	
Do I Still Need my Brain? Evolution of Naïve Mind-Brain Conceptions from Childhood to Adulthood	99
<i>Sandrine Rossi, Pauline Allix, Céline Lanoë, & Amélie Lubin</i>	
STEM Camp: Active Involvement in Research and Science Endeavors	100
<i>Deborah G. Wooldridge, Susan Peet, Laura Landry-Meyer, & Su Yun Bae</i>	
Exploring Shared Book Reading Styles of Chinese Teachers from the Perspective of Activity Theory	100
<i>Yanping Su</i>	
Artwork in Art Education	101
<i>Kristýna Říhová</i>	
Observational Life Drawing as a Holistic Teaching Tool in the Time of Memes / Pre-Research Study	101
<i>Helena Blašková</i>	
A PBL Case on Glycogen as an Evaluable Task for Students Studying Metabolism	102
<i>Ángel Luis García-Ponce, Beatriz Martínez-Poveda, Ángel Blanco-López, Ana Rodríguez Quesada, Francisco José Alonso Carrión, & Miguel Ángel Medina Torres</i>	
The Mediating Effect of Psychological Empowerment Between Relationship Satisfaction with Institutions Members and Competence for Building Early Childhood Educational Community of Early Childhood Teacher	102
<i>Kai-Sook Chung, Hee-Kyung Park, & Ji-Yeon Kim</i>	

Evaluating Reliability and Discriminatory Capability of BEMA in Two Spanish Engineering Degrees	103
<i>M. Amparo Gámiz-González, Ana Vidaurre, Roser Sabater I Serra, Isabel Tort-Ausina, María-Antonia Serrano, Jaime Riera, José Maria Meseguer-Dueñas, José Antonio Gómez-Tejedor, José Molina-Mateo, & Tania Garcia-Sanchez</i>	
Learning About Methods or Working Methodically	103
<i>Valentina Haralanova, & Göran Fafner</i>	
Introducing Biology Concepts to Students in Belgium in the Context of a Modern Greek Course	104
<i>Lefkothea-Vasiliki Andreou, Georgia Athanasopoulou, Vasileia Aletra, & Caterina Psarropoulou</i>	
 <u>Organizational Issues</u>	
The Age of New Communication – The Screeners Project	105
<i>Petra Pétiletá</i>	
The Role of the Education System in Solving the Skills Mismatches on the Labor Market	105
<i>Daniela Paşnicu</i>	
Towards Higher Education Data Hygiene – A Case Study	106
<i>Ji Hu, & Xu Chu Meng</i>	

VIRTUAL PRESENTATIONS

Teachers and Students

Student Access to Automated Marking Tools as a Way of Improving their Comprehension	109
<i>David Cutting, Andrew McDowell, Neil Anderson, Angela Allen, & Matthew Collins</i>	
Perceptions of English Language Primary School Teachers in Vietnam Towards the Implementation of English as a Medium of Instruction	109
<i>Duy Truong</i>	
The Light and Shadow of Assessment Practices: Focusing on SGH in Japan	110
<i>Kohei Nishizuka, Baozhu Wang, & Masahiro Arimoto</i>	
The European Profile for Language Teacher Education. A Partial Implementation in Spanish and Belgian Universities	110
<i>Ariane Ruyffelaert</i>	
Development of Parents' Trust in Teachers Scale in Secondary School	111
<i>HwaChoon Park, DaeHyun Kim, & RyuMi Choi</i>	
The Nature of Classroom Discourse in Pre-Service Life Sciences Teachers' Lessons in Johannesburg	111
<i>Lydia Mavuru</i>	
Teachers' Occupational Work Ethic Scale in South Korea	112
<i>HwaChoon Park</i>	
Is it Bad to Provide Negative Feedback to Students? The Role of Regulatory Fit: A Case from a UK University	112
<i>Zahra Fazeli</i>	
Exploring the Impact of the Complexity of Cognitive Demands Associated with Curriculum Content on Student Academic Performance: A Case of Mathematics	113
<i>Sam Ramaila, Philemon Seloane, & Lydia Mavuru</i>	
A Mobile EEG Study on the Neurophysiological Correlates of Oral Reading in Dyslexia	113
<i>Katherine Ko, Roann Ramos, & Rosalito De Guzman</i>	
Extended Curriculum Programs as a Support Mechanism to Enhance South African Undergraduate Science Students' Academic Performance in Mathematics	114
<i>Sam Ramaila, Philemon Seloane, & Lydia Mavuru</i>	
Gender Differences Between the Perceptions of Physics and Science in General Amongst Senior and Junior Students at a South African University	114
<i>Leelakrishna Reddy</i>	
Questions and Science Contents Preferred by Early Childhood Education Teachers in Training	115
<i>Adrián Ponz Miranda, & Beatriz Carrasquer Álvarez</i>	
Gender Differences in Physics Anxiety at a South African University	116
<i>Leelakrishna Reddy</i>	
Teacher Challenges and Choice of Programming Tools for Teaching K-12 Technology and Mathematics	116
<i>Niklas Humble, Peter Mozelius, & Lisa Sällvin</i>	

Projects and Trends

Promoting Learner Engagement: Measuring and Characterizing Learner Engagement Using a Collaborative Online Learning Tool	117
<i>Andrew McDowell, David Cutting, Angela Allen, Neil Anderson, & Matthew Collins</i>	
The Effects of Internet Use by People With and Without Intellectual Disability: Student Teachers' Perspectives	117
<i>Marcos Gómez-Puerta, & Esther Chiner</i>	
Integrating New Literacies in an Online Learning Community	118
<i>Sylvia Harkins</i>	
STRATEGOI: A SPOC to Teach Ancient Greek	118
<i>Raquel Fornieles</i>	
Children Learning a Foreign Language by Doing and Playing	118
<i>María Isabel Velasco Moreno</i>	
Development of “Content-Focused Accessibility” E-Learning Material for English Learning Targeting Visually Impaired University Students	119
<i>Chikako Ota</i>	
Pre Service Teacher Attitudes and Self Efficacy Toward Inclusion in Kosova	120
<i>Emirëjeta Kumnova Hoxha, Rajmonda Kurshumlia, & Blerita Perolli Shehu</i>	
Selected Aspects in Educational Relationships	120
<i>Lucie Flekačová, Monika Smolíková, & Dita Finková</i>	
The Value and Difficulties of Learning with Digital Technologies Among Higher Education Students in Ghana	121
<i>Justice Kofi Armah, & Duan van der Westhuizen</i>	
Bibliometric Review on the Education of People with Autism Spectrum Disorder Without Associated Disability	121
<i>Paola Melero-Pérez, & Marcos Gómez-Puerta</i>	
Robotics in the Teaching of Physics: A Project Based Approach	121
<i>Galeno José de Sena, Leonardo Mesquita, Marco Aurélio Alvarenga Monteiro, Jorge Muniz Junior, & Alvaro de Freitas Oliveira</i>	
Robots and Students with Autism Spectrum Disorder in the Educational Context	122
<i>Elena Pérez Vázquez, Alba Gilabert Cerdá, Alejandro Lorenzo Lledó, Asunción Lledó Carreres, & Gonzalo Lorenzo Lledó</i>	
The Use of Virtual Learning Environments and Achievement in Physics Content Tests	122
<i>Mafor Penn, & Ramnarain Umesh</i>	
Inclusion of Music Therapy as an Intervention Tool in the Therapeutic Pedagogy Classroom	123
<i>Alba Gilabert Cerdá, Elena Pérez Vázquez, Alejandro Lorenzo Lledó, Asunción Lledó Carreres, & Gonzalo Lorenzo Lledó</i>	
Environments of Dynamic Learning Under 3D Interactive Vision: Reconstruction of the Orbit	124
<i>Beatriz Framiñán Aparicio, Juan Antonio Juanes Méndez, & Andrés Framiñán de Miguel</i>	
Creating Moodboards with Digital Tools: A New Educational Approach	124
<i>Fausto Brevi, Manuela Celi, & Flora Gaetani</i>	

5G Technology for Augmented and Virtual Reality in Education	125
<i>Adriano Baratè, Goffredo Haus, Luca A. Ludovico, Elena Pagani, & Nello Scarabottolo</i>	
Comparison of Options for Supporting Socially Disadvantaged Roma Pupils Within the Czech and Slovak Republic Education System	125
<i>Lenka Haburajová Ilavská, Jaroslav Balvín, & Iva Staňková</i>	
 <u>Teaching and Learning</u>	
Teachers' Educational and Misbehavior Management Strategies in Working with Primary School Students with Attention Deficits	126
<i>Tena Velki, Nataša Vlah, & Irena Kovačević</i>	
Effective Progression Management Within Very Large Classes in Computer Science Education	126
<i>Paul Sage, Darryl Stewart, Philip Hanna, & Andrew McDowell</i>	
The Impact of Reading Comprehension on Mathematics Word Problem Solving	127
<i>Rajmonda Kurshumlia, & Eda Vula</i>	
Using Artistic Illustration to Communicate Abstract and Invisible Ideas in the Software Engineering Domain	127
<i>David Cutting, Andrew McDowell, TJ Cosgrove, Neil Anderson, Matthew Collins, & Paul Sage</i>	
Exploring the South African Physical Sciences Pre-Service Teachers Pedagogical Orientations	127
<i>Aviwe Sondlo, & Umesh Ramnarain</i>	
A Collaborative Learning Platform to Assess the Use of Agile Methodologies in Engineering Studies	128
<i>Francy Rodríguez, Diego Viguera, Maria Cerrato Lara, Víctor Rampérez, Javier Soriano, & Guillermo Viguera</i>	
Propositional Logic Word Problems and MS Excel at Primary and Secondary Education	129
<i>Jitka Laitochová, David Nocar, & Karel Pastor</i>	
Students' Perceptions, Process and Product in a CSCL Experience	129
<i>Diego Viguera, María Cerrato Lara, Francy Rodríguez, Víctor Rampérez, Javier Soriano, & Guillermo Viguera</i>	
Interaction Between Teacher and Pupil and its Influence on the Perceived Closeness of Pupils	130
<i>Renáta Matušů</i>	
 <u>Organizational Issues</u>	
Mediation and Conciliation as Appropriate Methods of Conflict Resolution (MASCs) for the Promotion of Access to Justice and Culture of Peace	131
<i>Vanessa Miranda, & Leila Salles</i>	
The Brazilian Higher Education: The Undergraduate Courses in Light of its Recent Policies	131
<i>Silvia Regina Machado de Campos, & Roberto Henriques</i>	

WORKSHOP PRESENTATIONS

Teachers and Students

**Effective Instruction in Virtual Higher Education: Ensuring Cognitive, Social,
& Teaching Presence** 135

*Sandra M. Rebeor, Michelle L. Rosser-Majors, Christine L. McMahon, Stephanie L. Anderson,
Yolanda Harper, & Laura J. Sliwinski*

**A Guided Discussion on Using Grades and Withdrawals as Evaluation Measures
of Courses and Instruction** 135

Beth Austin

Projects and Trends

Cultivating Self-Belief in Students 136

Denise Harber, & Gavin Jinks

**Smooth Transitions: Assessment and Advancement of Level 2 Writing Students
at Houston Community College** 136

Devin McCain, & Claudia Pena

Student Engagement: A Multidimensional Perspective 137

James E. Groccia

AUTHOR INDEX 139

The background features a vertical color gradient from light green at the top to light blue at the bottom. Overlaid on this is a network of white lines forming irregular polygons, with a fine grid of small white dots in the background.

ORAL PRESENTATIONS

TEACHERS AND STUDENTS

CAN A DIGITAL GUIDED PEER FEEDBACK SYSTEM FOSTER LEARNING

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Abstract

Despite the fact that scientific literature highlights the importance of feedback for learning, there remains a challenge for students to construct good quality feedback in collaborative settings. This study designs, implements, and evaluates a digital learning module with an intensified peer feedback support. The goal is to explore whether a digital module with guided peer feedback which encourages challenges and motivation support students' domain specific knowledge gain. The extent to which the use of such a digital learning module is appreciated by students is studied as well.

Participants were 203 students who were randomly assigned to groups of three. students were asked to explore various perspectives, and the 'pros and cons' on the topic of 'Genetically Modified Organisms (GMOs)'. The findings show that the digital module fosters students' learning and satisfaction. The use of peer feedback support guided the students in appropriate ways to analyse learning partners arguments about the topic, express agreements/disagreements and when possible integrate various points of views in their own reflection report. This digital learning module provided a safe and respectful learning environment for students to also practice their argumentation and exercise critical discussion and reasoning skills without recourse to, or fear of, personal (ad hominum) statements, enhancing their awareness of the topic.

Keywords: Attitudinal change, digital learning module, learning, peer feedback, student satisfaction.

A STUDY ON E-LEARNING IN SMALL ONLINE DISCUSSION GROUPS AND EXPERIMENTAL DESIGN IN ADVANCED LEVEL BIOLOGY

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Abstract

This pilot study focuses on assessing the effectiveness of discussion in small online student groups. Class discussions offer students opportunities to test their ideas and opinions against the ideas and opinions of their peers. More effective learning may be promoted through properly designed online discussion tasks. A class of 28 Advanced level Biology Students followed in this study were 16-17 years old at a pre-university college, where face-to-face learning is the norm. A two-week online course was designed to be followed in two steps: an ice breaker activity aimed at establishing an online learning community; a one-week experimental design program (EDP) designed to encourage discussion of experimental procedures in small groups of 4-5 students. The study was carried out during two one-week slots in 2017-18. Students' short term performance during the program and their long term performance when compared to a control group were analyzed. Several statistical tests were used to analyze the data using the facilities of SPSS. The Shapiro Wilk test was used to determine whether the score distributions violated the normality assumption. Since the score distributions satisfied the normality assumption, parametric tests were used to compare mean scores between various groups of students, where a 0.05 level of significance was adopted for each test. The Paired samples t-test was used to compare mean scores between pre- and post- EDP tests; the Independent samples t-test was used to compare mean scores between 'test' and 'control' groups; and the One-Way ANOVA test was used to compare mean scores between several classes. Moreover, 95% confidence intervals were computed to assess the variation in the mean scores if this study had to be replicated with other groups of students in the future.

Short term results showed that the EDP was effective in improving students' critical evaluation in experimental design procedures. However, though annual scores showed that the 'test' group mean was higher than that of the 'control' group, statistical analysis of these results, did not support any difference in achievement between the test and the control group.

Students' perception of this program indicates a number of positive and negative issues related to web-based learning also cited by the literature: the use of the discussion forum that permitted time to think about experimental design issues, different perspectives of colleagues to problem solving were positive issues while work overload and incorrect or insufficient feedback were some disadvantages mentioned.

Changes in science instruction, particularly biology, along with new digital learning opportunities may offer better approaches for future positive achievement among young people.

Keywords: *Web-based learning, online course design, small discussion groups, experimental design, biology teaching and learning.*

A CPR MODEL FOR MODIFIED MUSIC STANDARDS IN PROFESSIONAL MUSIC TRAINING: THE CASE OF TUT

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Abstract

The purpose of this paper is to use the National Association for Music Education's three artistic processes of creating, performing, and responding (CPR) guidelines for music teachers, music supervisors and administrators, and school boards, legislators, and other decision-makers to analyze and explore evaluation measures and the process of giving students tools in instructional programs that would lead them to become successful and competitive learners. Consideration is given to the areas and practices of the guidelines in the process of evaluating student learning across a range of standards representative of the quality of learning outcomes and balanced music curriculum that includes not only responding to music but also creating and performing music. The case of the Music Department in the Tainan University of Technology (TUT), Taiwan, is used to gain insight into some of the implications of student results. The findings demonstrate that a true assessment of music performance in authentic contexts is realized by raising the quality of practice, defined as meeting learning objectives in performance, that conform to the criteria of academic and performance requirements.

Keywords: *Assessment, measurement, standards.*

SOME DEMOGRAPHIC, PERSONAL AND CLASS CHARACTERISTICS AS PREDICTORS OF SCHOOL CLIMATE

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Abstract

Being a teacher, like any job, has some of its specifics that contribute to whether the teachers feel more or less comfortable in their workplace. In general, teachers believe that the school climate describes a general perception of the situation at a workplace. School climate determines the quality of relationships and the feeling of comfort or discomfort in the relationships between the participants of the educational process. School climate is associated with the quality of the school environment, common perception of school behavior, and school management.

The aim of the study was to check the potential predictors of school climate among classroom teachers. Research included the contribution of demographic and class characteristics, stress experience, and social support as personal variables contributing to the prediction of the school climate. The study involved 311 classroom teachers (97.7% female) from Croatia. During the State expert summit for teachers *Strengthening of professional competences of classroom teachers*, in June 2017, teachers completed the

Scale of Social Resources, Scale for Measurement of Teachers' Stress Sources, and the Questionnaire of School Climate, assessing their own stress levels, social support, and school climate.

Research results showed that demographic and class characteristics are not crucial for predicting the school climate, however, school climate is connected to the teacher's experience of stress and support. Different sources of stress and social support proved to be significant predictors and accounted for 23.8% of the total variation of the school climate. A higher level of stress caused by the student's inappropriate behavior, a lower level of stress caused by the need for professional recognition, and the perception of greater social support predict a more positive school climate. Stress caused by inappropriate student behavior encourages teachers to change their behavior, but also to take responsibility for creating a positive classroom discipline through appropriate methods and forms of work which encourage student activity and promote a stimulating school climate. Teachers are aware that they can probably affect the stress of professional recognition a bit less, which creates a lesser need for stress for the climate to stay positive. Reducing the amount of stress is possible with the systematic support of competent institutions, experts, expert associates, and school principals, but also society as a whole, which should show greater respect for the teacher's calling.

Keywords: *Social support, stress, school climate, teachers, Croatia.*

TEACHING LAW IN TEACHER'S TRAINING – EARLY EXPERIENCES OF A PILOT COURSE IN EÖTVÖS LORÁND UNIVERSITY

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Abstract

Our world is full of several challenges which nurture our fears and lead anxiety. Facing them is a difficult task especially in the case of children. The family has a key role in helping them, and the school also has an important function. The students spend most of their time among each other and together with their teachers. As the teachers give an example for their students, the following components are important to appear in their behavior: knowledge and opinion about the law, (self-)conscious citizenship, moral and ethical questions. Moreover, educate democratic values is also a crucial task of schools. Therefore, it is essential to secure a necessary legal and ethical preparation. All this is the responsibility of universities, that must implement these elements in their teacher's training program. In Hungary, it is especially substantial when the guarantees of the rule of law are getting even weaker. Either the decree of Hungarian Minister for Education or the current plan of national curriculum declares expectations towards future teachers to be able to teach basic knowledge about several fields of rights. As in Hungary, a profession such as "legal teachers" does not exist; teaching law is the task of regular teachers. Despite this obligation, the afore-mentioned decree states only the expectations but does not secure the necessary time and credits to create an obligatory course. When our institute (Eötvös Loránd University, Faculty of Education and Psychology, Institute of Education) that is responsible for the pedagogical content of teacher's training recognized the lack of these elements in or curricula, designed a course about the legal and ethical knowledge. This course does not have antecedents. Therefore, the author of this presentation as the responsible professor had the freedom to compose the methodology and the content. The title of the course is "The legal and ethical frameworks of the teaching profession." This presentation introduces

1. the circumstances under which the course has been realized (brief overview of Hungarian teacher's training programs, social background),
2. the backgrounds (statistical data of students, and so on)
3. the methodology (with a brief outlook to literature),
4. the structure of the course,
5. the work within lesson and homework,
6. assessment.

The presentation aims to explore the experiences, offers a best practice and tools for teacher's educators in other countries.

Keywords: *Knowledge about the law, conscious citizen, ego strength development, teacher's training.*

TEACHING UNDER A TREE, THE RURAL REALITY IN MALAWI

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Abstract

According to official statistics in Malawi, repetition and dropout rates are high in primary schools and completion rates are low. The main reasons given are a shortage of teachers, not enough classrooms and a poor supply of teaching and learning material. In 2014 the average learner/teacher ratio was 78:1 with a higher ratio in rural schools.

In my doctoral research I analyse the interactions between teachers and different stakeholders in education in a rural area of Malawi where the average learner/teacher ratio in the schools participating in this study was 105:1. The purpose of this part of the study is to ascertain how teachers see themselves, their profession and their working conditions. Bronfenbrenner's socio-ecology theory is my analytical tool for understanding interactions, and the influence of environmental factors.

Data were collected from April to July 2016 through 42 semi-structured interviews with 123 individuals. Participants included head teachers, teachers, primary education advisors, parents, local leaders, and members of various school/community committees. I took ten interviews at each school, with individual, pairs and groups. I also interviewed the District education manager and the Director for basic education at the Ministry of Education, Science and Technology in Malawi. Three of the four schools have outside classes. One school has partial electricity but the remaining three have no electricity.

In the interviews teachers spoke of some of their difficulties, including their experiences of teaching outside and associated difficulties. Teachers were asked what obstacles they faced as rural teachers; whether they felt they were a part of the community in which they taught; what support they received, from whom and in what form; whether they thought authorities and society valued them as teachers; and whether they themselves value their profession.

Main findings indicate that teachers valued their own profession but felt undervalued by educational authorities and society in general. Each outside class has one tall tree to use for shade however it only covers part of the class from the burning sun and offers no cover from wind or rain. As rural teachers they face a constant shortage of resources and have few opportunities to look for teaching resources. They need to rely on their ingenuity and invent their own relevant teaching material.

Keywords: Teachers valued, teaching resources, poor infrastructure.

(RE)CONSTRUCTING PERSONAL TEACHING METAPHORS IN A BRAZILIAN TEACHER INITIATION PROJECT

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Abstract

This paper explores the (re)construction of pre-service English teachers' personal teaching metaphors as they designed and implemented language teaching materials for the first time. The research participants and I lived alongside each other during the first year of a teacher education project, forming part of a Brazilian government programme called PIBID (Teaching Initiation Scholarship Programme), in which I collaborated as a teacher educator. The programme awards grants to teacher educators, and to pre-service and in-service teachers participating in teacher initiation projects developed by universities in partnership with state schools. The PIBID project, in which the participants of this study were engaged, involved in-service English teachers from two state schools and pre-service teachers designing and implementing language teaching materials with the help of digital resources. To explore the development of student teachers' metaphors, I adopt a narrative inquiry methodology, which considers narrative as both method and way of understanding experience. Considerations about the role of metaphors in teacher education and storied perspectives on identity, knowledge and context also inform this study. The field texts include pre-service teachers' written, spoken and visual narratives of experience gathered over the course of an academic year. The personal teaching metaphors articulated and rearticulated by materials design and

implementation experiences encapsulate the pre-service teachers' desire to have a significant impact on pupils' language learning and welfare. They also encapsulate the feelings and challenges concerning the implementation of their images of teaching, and the effect of teaching experiences on their professional identities. Overall, they help the pre-service teachers not only communicate, but also make sense of important stages within their professional identity (re)construction, namely, the imagining, living out and re-imagining of language teaching.

Keywords: *Narrative inquiry, personal teaching metaphors, professional identity.*

CREATIVE TEACHING AND TEACHING FOR CREATIVITY IN VISUAL ARTS SUBJECT

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Abstract

It has become an accepted idea that teacher's ways of thinking and understanding are vital components of their practice. Improvement of teaching visual arts is based on awareness of what is creative teaching and creative student learning outcome. From my teaching observation, my student-teachers thought that creativity is just brainstorming or offer fun activities to students that have no basis on or relationship to the teaching objectives. However, creative teaching in visual arts should not be just a slogan, it should be implemented in pre-service teachers' block practice [BP].

Self-portrait is a common topic of school-based visual arts curriculum in Hong Kong. The researcher discovered that no matter which grade of students coming from, pre-service teachers designed similar learning objectives and selected similar teaching materials to guide their students drawing a self-portrait that lacks creativity at their BP.

To understand pre-service teachers' perspectives of creative teaching and teaching for creativity, studying their process of thinking in preparing and teaching self-portrait is appropriate. The researcher lined up some pre-service teachers, who wanted to have more teaching practice in schools, using self-portrait as the topic to design a unit of teaching for junior primary, senior primary or junior secondary school students. The research questions are:

- (1) How do pre-service teachers perceive creative teaching and teaching for creativity;
- (2) How do pre-service teachers design self-portrait lessons and teach different grades in creative ways;
- (3) What is the expected creative student learning outcome?

There are 16 student-teachers joined the research project. They were divided into five groups. Among them, two groups chose to teach junior primary students, two groups chose senior primary students, and one group chose to teach junior secondary respectively. They discussed and designed the teaching in groups. After sharing the design and doing peer review, the groups amended the teaching design and implemented the self-portrait teaching in schools. Post-lesson conferences were held. Pre-service teachers were asked to write critical and thoughtful reflection on the whole process of teaching design and implementation at last.

The research found that pre-service teachers have noticed the importance on guiding student imagination through different learning activities and guiding questions instead of providing step by step instructions to restrict students exploration. Besides, pre-service teachers tended to develop different creative learning activities to inspire students creativity when doing art works. They have discovered that the more innovative learning activities are, the more creative students are. However, they admitted that they needed more hands on experience to grasp critical judgement of designing creative and effective learning activities.

Keywords: *Visual arts education, creative teaching, teaching for creativity.*

SOMETIMES STUDENTS MAKE THE BEST TEACHERS: DEVELOPING AND ENHANCING GRADUATE SKILLS

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Abstract

This paper will provide a discussion and demonstration of an experimental implementation of a new approach to fostering graduate skills and enhancing the learning experience of final year's students in Digital Media and Information Studies (DMIS), an undergraduate degree at the University of Glasgow. Teaching staff in the subject area worked collaboratively with students in a Peer Assisted Learning (PAL) study to develop a training programme for student demonstrators for the computer-based lab sessions that are a requirement in the DMIS level 1 courses. The process enabled the development of training in practical and critical thinking skills for the students, and developed a two-way process of mentoring and feedback that allowed both staff and students to learn from the process. The evaluation of the programme has indicated that involvement in this project has had a number of positive outcomes for students. Most significantly, it has enhanced and developed student graduate attributes, making a contribution to an excellent student experience. This initiative used existing methods in peer learning, and built on research such as Student Peer Learning & The AALL Professional Evolution, Equity & innovation Students Supporting Student Learning (SSSL) Symposium 2012.

This paper will be delivered by teaching staff involved in the project, supported with video contribution from students taking part in the scheme as supporting evidence of their experience of the effectiveness of the activity on student learning experiences and employability beyond graduation. Evaluation at the end of the project evidences the positive effect for both sets of students, with qualitative feedback overwhelmingly positive.

The University of Glasgow has developed Graduate Attributes as a core objective of student learning: "core attributes are valued and developed across academic, social and professional settings". This paper will reflect on the success of embedding defined UofG Graduate Attributes into this scheme: these include Subject Specialist, Confident, Effective Communicators, and Resourceful, and Responsible. Our project, has shown that these attributes are achieved not only through the classroom activities but also through application of training and accreditation, from participation in UofG GTA training, Subject meetings, and support to apply for UofG accredited Recognising Excellence in Teaching (RET) scheme. This in turn is aligned to Chartered Institute for Library and Information Professionals (CILIP) professional accreditation for the single honours DMIS degree, ensuring our demonstrators graduate with a firm set of graduate attributes and employability skills.

Keywords: *Cooperative learning, peer teaching, undergraduate, graduate attributes, educational benefits.*

SEXUALITY EDUCATION AND TEACHER TRAINING IN PORTUGAL

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Abstract

In 2017 we started a study on sexuality education (SE) involving two Public Higher Education Institutions (HEI) with master's degree courses for kindergarten and primary education teachers in Portugal. The objectives of the study are: i) to determine if the study plans of teacher training (both for kindergarten and primary education teachers) of the different HEI include curricular units of SE; ii) to verify whether the legal framework in Portugal includes issues directly related to SE; iii) to identify specific contents of SE as part of curricular guidelines in pre-school and primary education; iv) to identify what knowledge, attitudes and behaviours about sexuality exist among future kindergarten and primary education teachers; and v) to develop and evaluate curricular proposals through the design of didactic resources to support educational practices that promote an integrated approach to the different dimensions of SE. In this free paper presentation, the results related to the first three objectives of the study will be presented and discussed.

Although there is a legal framework in Portugal that integrates SE from the 1st to the 12th year of schooling, data analysis revealed that only a limited number of HEIs explicitly integrate curricular units directly associated with SE. In addition, the recent guidelines for curriculum support continue to give little or no relevance to the subject. Since kindergarten and primary education teacher training is the responsibility of HEIs, it is urgent to ask questions like these: 1. Are the teachers scientifically and pedagogically prepared to teach SE in schools? 2. How do HEIs plan to meet SE training needs? Is the political power conscious of the situation? Will there be a political will to think about SE strategies that involve schools, families and the community?

Keywords: *Sexuality education, pre-service teacher training, legal framework.*

PRESERVICE TEACHERS' EXPECTATIONS OF PROFESSIONAL CONVERSATIONS ON PROFESSIONAL EXPERIENCE IN SCHOOLS

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Abstract

Professional experience is one of the most significant learning events in preservice teacher education. The professional conversations that preservice teachers engage in with their supervising teachers while on professional experience have the potential to contribute significantly to preservice teacher learning. This qualitative research explored preservice teachers' expectations of their supervising teachers and of the professional conversations they expected to engage in while on professional experience. The participants in this research were 31 preservice teachers (17 females, 14 males) who were completing their professional experience placement in a large, urban Australian secondary school that has a highly diverse student population. The findings indicated that there was little shared understanding of the purpose and aims of professional experience by the preservice teachers and their supervising teachers. When professional conversations occurred, they focused specifically on the immediate teaching practices of the preservice teacher rather than developing a greater understanding of the broader goals of education. Further, findings revealed that while the preservice teachers were located in a highly diverse learning environment, few professional conversations focused on the diversity and uniqueness of the school context. We suggest greater shared responsibility between supervising teachers and preservice teachers and further training of supervising teachers and preservice teachers in professional dialogues as ways forward.

Keywords: *Professional conversations, preservice teachers, professional experience.*

DIGITAL LITERACY OF PRIMARY EDUCATION TEACHERS IN THE AREA OF DIGITAL SAFETY

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Abstract

Digital Literacy (DL) is one of the key competencies modern teachers should have. Regardless of the stage of education, they should be skilled in using modern ICT solutions. Fluent use of digital media is one of the DL components – as much important as the ability to understand and anticipate online threats. DL of teachers determines not only their own safety but also the safety of children in elementary education. The paper sets out to address the following question: What is the level of digital literacy regarding e-threats among primary school teachers? The answer was given based on a competence tests and a diagnostic survey results. The research was conducted among 222 teachers in Poland and was commissioned by the Ministry of National Education (project executor: Cities on the Internet Association Tarnów and Navigo Wrocław). It is the first research based on a real measurement of DL in the following areas: ergonomics of using ICT, reliable evaluation of online information, influence of advertising on children, relationships with other people through the Internet, setting logins and passwords, and malware protection. The conclusion is surprising: teachers have insufficient knowledge regarding protection of

children against e-communication threats but their competencies regarding malware protection are relatively high. Particular support in strengthening DL should be provided to trainees, that is, teacher who begin their professional career.

Keywords: *Digital literacy, teachers, primary education, safety, internet.*

A SIMULTANEOUS NONPARAMETRIC WEIGHTED SKILL AND MISCONCEPTION DIAGNOSIS MODEL FOR LEARNING

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Abstract

In traditional teaching, teachers usually use summative assessment of learning to determine if students have mastered the learning unit. Classical test theory (CTT) and unidimensional item response theory (UIRT) are commonly applied to help teacher analysis the responses of students. However, both only can provide a score (total score or ability) of a student, and most teachers classify students who have to join the extra remedial class at school according to score below a given threshold. Based on this, it sometimes meets the problem, “students have the same score but their mastery skills (in the learning unit) are different.” Different from CTT and UIRT, cognitive diagnosis models (CDMs) which consider the mappings of items and required skills (Q-matrix) to classify students mastery skills in a fine-grained scale. Generally, CDMs can be divided into two categories, nonparametric CDMs such as DINA and GDINO, and parametric CDMs such as NPCD. In addition, NPCD (without parameter estimation) is still suitable for the small class from 1 to 30 students.

So far, most of them can be used to classify the mastery skills of students to solve the previous problem. On the other hand, misconceptions may influence students’ learning a lot. For example, if students have a misconception, “the order of operation,” they may answer the item, $45 \div 9 \times 5 = 1$ (wrong answer), not 25 (correct answer). Furthermore, students’ observed responses should be affected by the lack of skills and the misconceptions, simultaneously. In the parametric CDMs, simultaneously identifying skills and misconceptions (SISM) model was proposed for classifying skills and misconceptions simultaneously. Nevertheless, the classification performance relies on estimation methods the sample size a lot.

In this study, a simultaneous nonparametric weighted skill and misconception diagnosis model (SNWSM) was proposed. The similarities between the observed response and an ideal response for mastering skills and an ideal response for possessing misconceptions are used to integrate them and form a weighted ideal response with respect to the observed response. Moreover, all mastery and misconception candidates are combined according to the similarities between the observed response and all weighted ideal responses for determining the probabilities of having skills or misconceptions. The classification results can help teachers to prepare personalized remedial class.

Keywords: *Cognitive diagnosis models, mastering skills, misconceptions, nonparametric CDMs.*

AI CLASSROOM ANALYSIS SYSTEM FOR LANGUAGE TEACHING DEVELOPMENT

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Abstract

One of the highly validated language classroom observation methods is Communicative Orientation of Language Teaching initiated by N. Spada and M. Fröhlich. This method, however, is not widely used by language teachers because of its time-consuming coding procedures. To overcome this shortcoming, the authors developed a new portable language classroom analysis tool named Mobile COLT and have started to plan its automatic version. Mobile COLT facilitates real-time class analysis using a Windows tablet. Since it can quantitatively display the features of the class, Mobile COLT can be an innovative tool for language teacher development. Its manual version has been already constructed, and the research to

examine its effectiveness has been conducted in primary and secondary schools. This paper expounds the functions of Mobile COLT, the application in classroom practices, and the development of the automatic version of Mobile COLT.

Keywords: *AI, language teacher development, automatic classroom analysis, COLT.*

THE INFLUENCE OF DIFFERENTIATED ASSIGNMENTS (SCAFFOLDING METHODS) ON FIRST-YEAR STUDENTS-TEACHERS' ACADEMIC PROGRESS

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Abstract

The aim of this study was to determine the influence of differentiated assignments, using scaffolding methods, on the possibility of improving first-year student teachers' academic progress in a South African university. Research participants ($n=296$) were divided into two groups, Group A ($n=136$) and Group B ($n=160$), who were engaged in this study during the first semesters of their courses in the years: 2012 (group A) and 2013 (Group B). Only Group B was supported with differentiated assignments that included scaffolding methods. The participants of both groups completed two assignments and a test in the first semester. Results were recorded and compared to formulate findings and recommendations. The results presented in this article will assist lecturers in evaluating differentiated, scaffolding activities, that could be used to support first-year students who are encountering various learning barriers in higher education. These extra scaffolding methods showed to contribute to the academic success of first-year student teachers.

Keywords: *Differentiated, scaffold, barriers, language, student teachers, academic progress.*

UNDERSTANDING WHY SOME FUTURE TEACHERS FIND IT SO DIFFICULT TO FOLLOW WRITTEN INSTRUCTIONS

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Abstract

This study consists of a participatory action research (Brandão & Streck 2006; Thiollent 2006, 2011) based on the Exploratory Practice theory (Allwright 2002, 2003, 2008; Gieve & Miller, 2008); the complexity theory (Morin 2006; 2015; 2017) and reflective teaching (Liberati 2015). It is an attempt to understand the difficulties some of my students, who are (future) teachers, encounter in following simple written instructions. One may argue that the answer is probably related to their habits as "digital natives" (Prensky 2007). In the past, we presented as one of the characteristics of this "connected generation" (Cardoso 2013) the difficulty to concentrate and, therefore, to read long texts. However, when taking exams, these learners fail to follow even very short instructions, such as "write in ink" or "correct the following sentences". On the other hand, these learners' success at university depends on these short instructions. Moreover, being these students (future) teachers, we wonder how they will be able to give clear instructions to their own learners.

To try to understand this *puzzle* (Allwright 1991), we have developed this Exploratory Practice project. The idea is not to find a solution to the problem, but to understand and make learners aware of this fact. The study will take about four months and the results will be presented at the END 2019 conference in June.

Another point to be discussed during the presentation is how far can we still consider the differences between the *connected generation* and the other generations, as we have all become in a way or another deeply influenced by modern technology, and in some cases (cultures), even addicted to it.

Keywords: *Reflective teaching, written instructions, connected generation, exploratory practice, complexity theory.*

AN INTRODUCTION TO THE AEPS-3 AND RESULTS OF A FIELD TEST STUDY

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Abstract

The AEPS, a curriculum-based, criterion-referenced programmatic assessment tool was developed to collect developmental progress information, primarily of children with disabilities, from birth through age five. First published in 1993 (birth through age two) and 1995 (age three through five) and again in 2003 (2nd edition), the tool was designed to determine a child's repertoire of skills and to identify next skills needed for developmental progress. One important aspect of the tool was the one-to-one correspondence of assessment and curriculum items. Needed skills identified in assessment, were then matched with the same curriculum skills and provided users with tiered strategies and suggestions to support the child with multiple activity-based practice opportunities. A variety of additional components were available to support using the AEPS and monitoring progress. Components' use was optional and consisted of the AEPS Family Report with both qualitative and quantitative questions, Progress Report, Assessment Activities, IFSP and IEP examples, programming steps, and Social Communication Observation and Summary Forms. Additionally, cut scores were established in 2006 that permitted use of the AEPS to corroborate eligibility, and in 2007 to determine eligibility for early intervention/special education services.

The AEPS is considered one of the most functional assessment tools published for use with young children with disabilities. The second edition consists of 455 items, with 248 in Level I (birth through two) and 217 in level 2 (three through five), with approximately 250 programming steps, for children making more incremental progress. Currently, AEPS 2nd edition has been published in Spanish, Canadian French, Korean, Finnish, and Traditional Chinese.

In 2007 a third edition of the AEPS was begun. Changes included consolidating levels into a seamless test (birth through six), adding literacy and math areas, including science items, refinement of test/curriculum items, thorough criteria, improved AEPS components to the 3rd edition, and importantly, a new curriculum. The AEPS-3 curriculum is divided into three levels; beginning, growing and ready. Each curriculum level includes numerous daily activities and routines with practice opportunities for all items.

The AEPS-3 was field tested by 125 teachers with prior AEPS experience, administered to approximately 300 children, to evaluate its psychometric properties; specifically, inter-rater reliability, utility, and concurrent validity. This presentation will 1) report the field study results and introduce AEPS-3's major components; and 2) discuss implications of using a technically sound tool with the diverse ethnicities and cultural backgrounds of children and their families.

Keywords: *AEPS, assessment, curriculum, children, progress.*

INVESTIGATING NON-ACADEMIC CORRELATES OF GOAL COMMITMENT FOR ACADEMIC ACHIEVEMENT AT HIGHER EDUCATION LEVEL

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Abstract

Academic performance is dependent not only on personal traits but also on non-academic factors such as personal, socio-cultural, political, or economic (e.g., Poropat, 2009; Stoet & Geary, 2015). These factors, referred as psycho-social contextual influences (Richardson, Abraham, & Bond, 2012), are significant determinants in academic performance at particularly higher education level. In this respect, the present study attempts to explore university students' goal commitment to academic achievement by focusing on social, economic, and political factors playing role in their determination to engage in academic studies. The data, gathered through semi-structured interviews and focus-group discussions with 116 university students, was analyzed qualitatively following open coding procedure. The results indicated that economic and political influences are among frequently reported factors, which could be significant determinants in their level of academic engagement. The findings suggest that such psycho-social contextual influences need further consideration in the context of defining and assessing achievement at

higher education level in addition to instructional, academic, or personal factors. Therefore, any attempt towards understanding and enhancing learners' academic performance should also involve consideration of psycho-social contextual determinants.

Keywords: *Higher education, non-academic factors, goal commitment, academic achievement, psycho-social context.*

CULTURAL MODELS OF DISABILITY. AN EXPLORATORY QUALITATIVE STUDY ON THE PRE-SERVICE TEACHERS' ATTITUDES AND SOCIAL REPRESENTATIONS

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Abstract

Attitudes towards disability and inclusion are the result of the representations that people create and share during social interaction: they are an individual interpretation of a collective belief (Salès-Wuillemin, 2006; Ramel, 2014). Starting from this perspective, the paper shows the results of a study conducted between 2017 and 2018 on representations of disability and on the fears of a group of pre-service teachers. From the aspects highlighted by the study, emerges the need to continue to insist on the study of representations and attitudes of teachers, also in view of the complexification of social scenarios and the cultural approach to differences at school.

Keywords: *Representations, disabilities, inclusion, pre-service teachers.*

SOCIAL NETWORKING FOR LIFE-LONG-LEARNING WITH QUALITY MANAGEMENT ASPECTS IN TECHNICAL TEACHING

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Abstract

The following paper has to be seen in connection with some well-known authors' statements asserting that in today's "knowledge society" individual knowledge and especially collective knowledge become more and more important. If knowledge is assumed to be part of a set of expectations held by today's social system, this new societal formation is less characterized by an increase of knowledge as a consequence of accumulating dates and information than by a basic change of people's meta-preferences. This is due to the fact that all societies are based on the knowledge of cognitive expectations. For this reason, the world or the knowledge society, respectively also appears to be a risk society. According to the system-theoretical approach knowledge can be seen as an emergent cognitive structure of social systems or as expectations directed towards the environment and its norms. These expectations have to be changeable if required. Disappointments or failures are observed and interpreted, thus creating so called structural effects that can also be referred to as learning. Empirical economic studies attempting to explain the determinants of investment in social capital have generally been limited in their definition of what constitutes an individual's social capital. The focus has almost exclusively been on participation in formal organisations, ignoring informal networks to which individuals belong. We discuss social capital investment which has been extended to also include measures of investment in social networks such as networks of family, friends and neighbours, and the relationship between learning groups in organisations. Social capital seen as a contemporary concept of social sciences cannot be reduced to a kind of social network of relations but has to be regarded as a communication structure of relations based on social systems. Thus, knowledge and norms are only a partial aspect of emergent structures of social systems. The new aspect on lifelong learning is how to build a social group with a sustainable new WE-feeling.

Keywords: *eLearning, social capital, social networking, life-long-learning, community of practice.*

OOPS! THE CRITICAL ROLE OF RISK-TAKING AND FAILURE IN EDUCATIONAL CHANGE AND TEACHER EDUCATION

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Abstract

Traditional educational systems need to change. They need to be more innovative. However, innovation carries a risk—it sometimes fails. Qualitative research conducted with teachers who changed and implemented their pedagogy in innovative ways (“hacks”) in their classroom formed the foundation of a new framework to meet this need—teachers as “hackers.” These teachers’ characteristic habits and behaviors contribute to their success in creating islands of change in public schools. The participants volunteered their stories of pedagogical failures—class plans that flopped, technological tools that fizzled, and projects that fell short of their learning goals. They not only shared their cases, but also approached those failures as a natural and inherent part of becoming adaptive educators. This paper explores the role of failure and risk-taking in educational settings with the aim to encourage rethinking and opening our practices to development by making mistakes. As one participant described innovative pedagogy, “You have to be willing to fail in public.”

Keywords: Risk-taking, change, failure, innovation, education.

COMBINING LANGUAGE AND CULTURE LEARNING IN TEACHER EDUCATION AT MARTIN LUTHER UNIVERSITY HALLE WITTENBERG

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Abstract

At Halle’s Martin Luther University the federally funded KALEI project is concentrating on future teachers’ cultural assumptions and beliefs. In a two-fold approach it foresees on the one hand to increase the international mobility of students and on the other hand to develop a varied range of different courses to raise the students’ intercultural awareness by explicitly combining language and culture learning. Within the almost exclusively mono-lingual German education system this is an innovative approach, which not only appreciates the various languages and their respective speakers but also acknowledges and underlines the emotional and symbolic component of languages and cultures.

Among the recently established courses is “Arabic in classrooms”, which was set up in cooperation with the Institute for Oriental Studies. With a great number of Arabic-speaking pupils in schools, a course, that acquaints future teachers with the Arab language for classroom situations and provides knowledge on the history and cultures of the region, is very popular among students. The course ends with a certificate and is now a permanent part of the supplementary course program for our students wishing to become teachers.

Another innovative format combining language and culture aspects, open to prospective teachers of all subjects, is a number of sessions where students talk to international PhDs about their individual school experiences outside Germany. Every session goes by the tag-line “What school is like in ...” and features very personal insights into the cultural dimension of school, education and growing-up in another country. In every-day school life language learning is not limited to the language classes. Teachers of all subjects have to have profound knowledge in the field of teaching German as a target language. The course “Teaching German as a target language” aims at facilitating students with the knowledge how teaching German along with the subject matter. With a multi-disciplinary team of lecturers with very diverse backgrounds (German Studies, Cultural Studies, Special Needs Education) the course deals with all questions of language learning, such as alphabetization, word formation, grammar, but also looks on the pupils’ side addressing special needs, learning difficulties and psychological preconditions. Over the duration of the course every student will develop a learning material to be tested and employed in participating schools.

The accompanying research on all measures is addressing prospective teachers' cultural assumptions and beliefs. In particular, it is focusing on an increased intercultural awareness through situations of culture contact and cultural learning.

The oral presentation will focus on the measures, their content and range, the effect and on-going research.

Keywords: *Teacher education, intercultural professionalisation, culture and language learning, German as a target language, cultural assumptions and beliefs.*

BENEFITS OF CLASS TESTS AND CONTINUOUS ASSESSMENT IN HIGHER EDUCATION MATHEMATICS

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Abstract

There is a general interest in providing a wide range of forms of assessment in order to improve the performance on metrics such as the National Student Survey (NSS) and the Teaching Excellence Framework (TEF). Hence, there has been a growing pressure on staff to innovate on teaching and learning in general. This paper considers the option of continuous assessment and its impact on student's performance, attendance and workload based on a quantitative and qualitative analysis.

A study-case based on undergraduate students of Mathematical Sciences will be presented. In a two-semester module, we used the compulsory logbook component to change its assessment method for each semester, and compared continuous assessment throughout the second semester versus single-submission at the end of the first semester.

We analysed the correlation between exam results, logbook marks for each semester, class test and written assignments and student attendance, and we examined student views from a survey distributed at the end of the year. The results show that the weekly logbook helped students' revision and distributed their workload throughout the semester, whilst it made a significant positive difference in performance for students with high attendance.

Keywords: *Continuous assessment, workload, attendance, coursework, teaching and learning.*

ORAL ASSESSMENTS: ENCOURAGE STUDENTS' MATHEMATICAL AND STATISTICAL TALKING

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Abstract

Take a moment to recall assessments in mathematics and statistics, memories of written tests and final examinations may surface, particularly, those questions that you simply could not start or could not understand. Sometimes, the recollection may be the time you were astonished as you received full marks for a solution when you would readily admit to the absence of any "real knowledge" of the topic. A written solution may not fully reveal the true thoughts and reasoning behind its construction, thus masking whether a concept is fully understood or a solution is the result of a template. Conversations may reveal more evidence of mathematical knowledge than a written solution alone, and as such it may provide a valuable tool to enhance the learning and assessment process.

The promotion of "mathematical/statistical talk" requires students to be comfortable to suggest ideas and more, importantly, be less fearful of saying the "wrong thing". This can be achieved by working in groups of three or four standing at whiteboards and even if students are passive, initially, this is still preferable to staring at a blank sheet of paper totally alone.

The structure of the class is adapted to include inquiry-based learning activities with an emphasis on vocal explanations concurrent with a written solution on whiteboards. Emphasis will be on the ability to formulate questions effectively, to discover individual mathematical strategies, to be able to link mathematical and statistical ideas to produce well-constructed explanations and the capacity to start a

solution. These implicit skills will hopefully aid the students during tertiary studies and beyond into employment.

The oral presentation assessment allows students to feel free to be creative mathematically/statistically whilst demonstrating concepts and skills which may not be experienced when writing an answer to a question in a test or examination.

This exploratory qualitative paper will show the constructive alignment process by referencing Structure of the Observed Learning Outcome (SOLO) taxonomy in two pathway courses leading to entry to first year Engineering and Information Technology degrees. In this style of class, educators ask for talking noise rather than the sound of silence.

Keywords: *SOLO taxonomy, oral presentation, constructive alignment.*

PROSPECTIVE CHILDHOOD PEDAGOGY SPECIALISTS' EXPERIENTIAL LEARNING TRENDS IN PRACTICAL STUDIES AT THE UNIVERSITY

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Abstract

Learning from one's experience is directly related to the prospective childhood pedagogy specialist's motivation to act thoughtfully, enabling oneself to continuously improve, taking responsibility for one's actions and decisions. The aim of the research is to disclose the trends of experiential learning of students who have chosen childhood pedagogy studies (pre-primary, pre-school and primary education) during their pedagogical practice. The study was attended by 119 prospective educators in the senior years of study who have chosen study programs of pre-school and primary education and childhood pedagogy at 4 universities of Lithuania. Research data were collected using structured survey, applying structured modified research instrument – the questionnaire made of concrete statements.

Research results reveal the peculiarities of experiential learning in practical studies at the university, highlighting the very student's autonomy and independence trends during practice. The aspects of students' practice objectives and assignments to be performed as well as of usefulness of practice assignments and their importance for future professional activities are assessed. The aspects of the student's practical activity while reflecting on personal experience as well as of experiences undergone during practice in the relation with other participants of the educational process and oneself as a trainee are revealed.

Keywords: *University, childhood pedagogy, experiential learning, practical studies.*

CLAP HANDS, TRAINING PROFESSIONALS TO PROMOTE DISABLED PEOPLE LABOR INCLUSION IN ARTS AND CULTURE

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Abstract

Introduction: The CLAP HANDS “Creative Lab: Access to Profession for persons with Handicap” is a project financed by the ERASMUS+ Programme in 2 years (2017-2019), under the key action “Cooperation for Innovation and the Exchange of Good Practices”.

Consortium: The project it has been coordinated by Institut Régional du Travail Social (IRTS) Languedoc-Roussillon- (FR) with 3 more partners from (FR), two from (ES), one from (PT) and one from (SE)

Objective: The main objective is to provide training to professionals who assist and work with people who have mental or physical disabilities, in order to contribute to their labor inclusion by developing their creativity and, on the other hand, to increase employer's awareness to the need of a more structured approach to the professionalization through arts and culture.

Expected results:

1. Focus groups

Each partner country has implemented 3-4 focus group discussions, in order to discuss crucial topics to be included in the Clap course. Participants of these focus groups were professionals within areas of arts, healthcare, and or had worked with artists with disabilities. The main discussion concerned what type of skills and competencies should the Clap course offer the trainees who work with persons with disabilities in order for them to contribute to their labor inclusion and professionalization through arts and culture.

In conjunction with the focus group discussions, each partner country interviewed 8-10 artists with various types of disabilities in order to gain knowledge and recommendations for institutions and other persons with disabilities who would like to become a professional within arts.

2. Best practice guide

Is a compendium of best practices and success stories of how organizations as well as individual artists create successful strategies to foster the development of art as a profession for persons with disabilities. A compendium to inspire artists and institutions that give them support from other EU members states to include disabled artists in the active population and contribute to enhance the cultural expression of the country with their unique talent.

3. Clap course

4 editions (1 x country) with 60 trainees (15 x country) of a specialized training module for professionals who supervise persons with disabilities in artistic activities and in the capacity of accompany towards professionalization processes in the crafts and culture, will be built from the contributions obtained by the other project productions.

Keywords: Disabled, competencies, training, arts and culture, labor inclusion.

USING AN ASSESSMENT RUBRIC FOR FEEDBACK AND LEARNING: A CONCEPTUAL STUDY

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Abstract

Teachers in artistic disciplines have until recently enjoyed high levels of freedom without the use of any strict measurement model recommended in some other disciplines. Assessment and grading have largely drawn on tacit knowledge (Polanyi, 1958; Wenger, 2000) with limited opportunity for students to learn from their experiences. This paper emerged as part of an action research study aimed to establish explicit assessment criteria for grading vocal performances; however, the focus here is on the use of assessment criteria for educational purposes. Ideas emerged through collaboration with eight academy professors who explored the use of a rubric as part of their academy teaching. Assessing vocal performances draws on concepts that students may not be familiar with on entry to the academy; however, linking concepts with phenomena facilitates self-monitored learning processes.

Keywords: Assessment rubric, criteria, feedback, learning.

ICT COMPETENCES FOR EDUCATIONAL INNOVATION: A TEACHER TRAINING PROGRAM IN COLOMBIA

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Abstract

The growing diffusion of technology in educational environments has raised the need to align Information and Communication Technologies (ICT) to the curriculum to promote innovative pedagogical practices in teachers. However, achieving this objective requires teachers to develop competencies for the effective use of these technologies. Under this scenario, the Ministry of National Education of Colombia implemented a teacher training program to strengthen six competencies associated with the use of ICT:

technological, communicative, pedagogical, investigative, management, and design. The objective of the research is to understand the relevance of the program in strengthening each competence. The study analyzes the perception of a sample of 2160 beneficiary teachers of the program throughout 31 of the 32 departments that compose the country. A questionnaire was applied with 36 statements about the usefulness and use of the program for teaching practice. In general terms, the results showed that most teachers agree that the contents of the program are relevant to the development of competences. Specifically, the results suggest that technological and pedagogical competencies were favored by self-directed, cooperative, and didactic learning strategies by using ICT that promote problem-solving skills in students. The communicative competence was associated with the learning of ICT tools that allowed to systematize and communicate significant experiences. Additionally, the research competence was related to the participation in communities of practice for the collective construction of knowledge with the support of ICT, the use of the information available on the web in a critical manner and the reporting of own research results using ICT. Similarly, management competence was driven by activities that required the explanation of educational policies on and with the use of ICT. Finally, design competence was related to the planning of teaching units to improve educational practices through the combination of existing methods and ICT. Findings are discussed in terms of the importance of the training program and lifelong learning for teacher's professional development.

Keywords: *ICT competences, teacher training program, professional development, lifelong learning, Colombia.*

PREVENTING SPECTATORS IN A GROUP-WORK: CIVIL TECHNOLOGY STUDENT'S PERSPECTIVE

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Abstract

Civil Technology is a subject which consists of content knowledge and practical work, of which one of the assessments requires group-work activity. Therefore, the problem encountered during group-work is that some of the students are concealing behind other claiming the vivid understanding of the work done. Group-work is one of the most imperative teaching and learning strategy which is underpinned by social constructivism, a theory that assumes that learning takes place through interacting with each other and through experiences. The aim of the study is to encourage common base understanding of content knowledge and practical work in a group-work learning, through problem-solving (Technological Process). However, the main objective was to evaluate the impact of group-work learning in Civil Technology content knowledge and practical work. While the main research question was, how does the positive impact of group-work learning assured in Civil Technology on content knowledge and practical work?

The research used a mixed method approach to collect data. The method of investigation included a literature review, empirical study by using the qualitative and quantitative method in the form of questionnaires and a semi-structured interview. The sample comprised of thirty-four (34) students both male and females from different cultural groups who are enrolled in Civil Technology III academic year. The findings of the study demonstrated that all group members in different groups successfully contributed and effusively participated in a group-work of Civil Technology teaching and learning.

Keywords: *Group-work, civil technology, technological process.*

SELF-ASSESSMENT THROUGH THE METACOGNITIVE AWARENESS PROCESS IN READING COMPREHENSION

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Abstract

In our study we investigate the relationship between adult self-assessment and the level of metacognitive awareness in reading comprehension. The sample of the research consisted of adults participating in a training program in order to obtain a certification of pedagogical competence, during the year 2017-2018. MARSİ (Mokhtari & Reichard, 2002) was used as a research tool and open - ended questions were distributed to the trainees. MARSİ contains 30 questions and provides an overall indicator of the level of awareness of metacognitive reading strategies as well as individual indicators of metacognitive strategies in reading. In our study we focused on the overall index and the metacognitive development of the trainees. The questionnaire was completed in two phases during the year 2017-18. Both quantitative and qualitative analysis of the data was conducted. The statistical process of the data revealed the existing high level of awareness of metacognitive reading strategies (about 70% of students were identified at a high level, ie $M > 3.5$), which is also in accordance with the high quality educational level of the trainees (49.6% had postgraduate / doctoral degrees) and their age ($M = 35$). Concerning the effect of training on their metacognitive awareness, there has been a statistically significant increase in the overall average of MARSİ, which indicates the positive impact of the training on a population of high educational level and of relatively older age than the normal trainee population. The qualitative analysis of the open questions revealed the enhancement of self-assessment among trainees as a dominant metacognitive skill, and significant conclusions were drawn regarding reading skills through the use of digital technologies, the way of study, the link between theory and practice, etc. It is of outmost importance the fact that the positive contribution of the training procedure to the metacognitive awareness of the participants appears to be focused only on those with pre-existing teaching experience in education structures who seem to have had been themselves more highly self-assessed. It is proposed to enrich such training actions with more self-assessment practices and techniques, when designing and implementing them in order to contribute to a further improvement of the metacognitive awareness of all the participants.

Keywords: *Self-assessment, metacognitive awareness, metacognitive skills, reflection, reading skills.*

VIRTUAL REALITY E-LEARNING ENVIRONMENT FOR MOTIVATING PRE-SERVICE TEACHERS TO LEARN INFORMATION TECHNOLOGY

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Abstract

A basic knowledge about information technology (IT) is very important for the teachers of the future schools, undoubtedly. They are important also for the teachers in kindergarten; not only for having some knowledge about the every day's tool of their future students but because they will have to train themselves in their whole life – and most of the training possibilities are/will be offered online. In the training of the kindergarten teachers at our university, there is an IT course (called Infocommunication) that is devoted (a) to teach IT for them; (b) to motivate students to learn about a number of IT devices and tools; and (c) to prepare them to learn about new methods and technologies in e-learning systems.

At the first site, students at kindergarten teacher trainings are not fully motivated for learning IT because the aims are not obvious or believable for everyone. During the first some semesters we used the Moodle for showing and practicing the basics of e-learning systems in that course.

Some years ago we started to use a virtual reality (VR) environment – the MaxWhere – in secondary school teacher trainings and we got positive feedbacks there concerning their motivation and activity. After these positive outcomes, we started to introduce a VR environment in a kindergarten teacher training. We hoped that it can motivate students to learn more about IT.

We prepared a MaxWhere environment that contained the compulsory course material and some new, extra pieces of information about new technologies. The “extra” materials were sometimes long, and contained external links to articles and interesting web site contents (e.g. IT security, or visual communication). We wanted to know if the students will read these extra materials that are not part of the course exam.

At the end of the course we asked the students about the content of the “extra” course materials. The results were absolutely positive: A big portion of the students read many “extra” materials in the e-learning VR environment, and – not only read but – knew many important and useful pieces of them.

In our presentation we deal with that survey where we introduced an e-learning system embedded in a virtual reality environment for a kindergarten teachers’ IT training. We present the VR environment (the tool); the e-learning system (compulsory & extra course materials); and finally the outcomes of the survey when we asked the students about the “extra” pieces of information.

Keywords: *Virtual Reality, MaxWhere, e-learning, pre-service teacher, teachers’ training.*

THE ASSOCIATION BETWEEN BULLYING, MALTREATMENT, AND PERSONALITY TRAITS AMONG ADOLESCENTS FROM ARMENIAN SCHOOLS IN LEBANON

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Abstract

The aim of this study was to identify the association between bullying, child domestic maltreatment, and personality traits among adolescents within a group of Armenian schools in Lebanon. Participants were 185 students in grades 7 to 10, attending Armenian schools in Beirut and its suburbs. The study depended on the self-report method, where participants supplied demographic information and filled in three questionnaires: Illinois Bully Scale, International Child Abuse Screening Tool – Children’s Version (ICAST – CH) and Personality Inventory for DSM-5 Brief Form (PID-5-BF) Child Age 11 – 17. Results, calculated by using ANOVA and Pearson correlation, indicated a statistically significant difference at the level of physical abuse between “victim” and “control” groups. Also, there were significant correlations between the “antagonistic” and “disinhibition” maladaptive personality traits and being a bully. The outcome of this study indicated the necessity of promoting parental and school guidance for preventing physical abuse within school, as well as concentrating on identifying the bully personality implicated in antagonism and disinhibition maladaptive personality traits within adolescents attending Armenian schools in Lebanon. The study includes prevalence information on bullies and victims in these schools, gender differences among bullies and victims, and clinical and research implications.

Keywords: *Bullying, Lebanon, Armenian, child maltreatment, personality traits.*

BELIEFS AND ACTIONS OF FACULTY MEMBERS OF SPORT SCIENCE AND PHYSICAL ACTIVITY REGARDING STUDENT MOTIVATION: KEYS TO AN INCLUSIVE PEDAGOGY

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Abstract

From the postulates of inclusive pedagogy, this article approaches the perception of faculty members toward the motivation of students with and without disabilities throughout their university life. This study was part of a larger research project carried out in different Spanish universities. Specifically, in this work we focused on the conceptions of faculty members of Sport Science and Physical Activity. To this end,

using a qualitative methodology, we analysed the opinions of these faculty members about the main causes of discouragement among university students, in general, and among students with disabilities, in particular. In addition, we also studied the actions that these faculty members carry out in their classrooms to motivate their students. The results show some of the causes of discouragement in students, such as out-of-date curricula and false expectations about the degree. Likewise, we present how the participants acted against these discouraging factors with different strategies, such as learning spaces and environments, curriculum development and student empowerment, among others. Lastly, in our conclusions we suggest that faculty members should value their students, favour the creation of positive learning environments, and attend to the interests and needs of all the students through inclusive curricular practices.

Keywords: *Inclusive pedagogy, sport science, physical activity, faculty, motivation.*

PROJECTS AND TRENDS

THE INCLUSION OF CHILDREN WITH SPECIAL NEEDS IN EARLY CHILDHOOD: CHALLENGES AND DILEMMAS OF KINDERGARTEN TEACHERS

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Abstract

The philosophy of inclusion is anchored in the law of Israel, from 2002, stating that all children with special needs have the right to be educated in mainstream kindergartens. As a result of this policy, kindergarten teachers in the mainstream face a complex reality of trying to teach a group of children with very diverse needs that they may not have had any professional training for. This research examines the challenges and dilemmas that face the kindergarten teachers in their daily practices in trying to manage the kindergarten. The literature examines this subject in schools and what is the meaning of such policies from the aspect of schoolteachers and principals, but not from the aspect of kindergarten teachers.

The research is a qualitative study in which five kindergarten teachers in the North of Israel were interviewed. The data analysis was based on categories and show that the kindergarten teachers are facing similar challenges to those of school teachers, lack of specific knowledge on how to teach a group of children in which part of the population has special needs, lack of skills and self confidence in how to deal with such a reality. In addition to the difficulty and lack of self- confidence and lack of skills the kindergarten teachers indicated that they did not feel professional self-efficacy. The contribution of this research can be to rethink the curriculum of training programs for kindergarten to teachers to include the necessary knowledge and practical experience before becoming kindergarten teachers .In addition it is necessary to reexamine the supervisory roles to ensure that a kindergarten teacher who is in the field and has to deal with such a complex problem will receive the professional counselling and resources that is imperative to ensure successful inclusion of children with special needs.

Keywords: Early childhood, kindergarten teachers, special needs, inclusion.

THE APPLICATION OF MOBILE DEVICES IN ACTIVE LEARNING AT THE UNIVERSITY: A REVIEW OF LITERATURE

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Abstract

The use of technology as an instrument to support learning is presented as a trend that is on the rise, because their versatility and adaptation to change have become an indispensable tool in the training practice of university students; from that a theoretical research was carried out on how the application of mobile devices in active learning in a university environment is approached in Ibero-America; the purpose is to give an account of what has been produced and researched regarding this topic and it is interference in the teaching and learning process. Heuristic and hermeneutics were used as methodologies for their construction. It includes the findings published between 2014 and 2018. It was determined to consider only the articles presented in indexed scientific journals, as well as extensive reports of international congresses held in Latin America and Spain. During the research, doctoral theses related to the topic to be treated were found, so they were also considered for analysis. A bibliographic matrix was designed in the Excel program where all the texts that made up the universe were cataloged, and then the documents were selected applying the filters with respect to the topics related to mobile devices and active learning in higher education. The analysis of the results was based on a qualitative methodology; they reflect that the researchers agreed that there is a wide potential for the pedagogical use of mobile devices, however, are still little used to support active learning in a university environment; likewise, it is

highlighted that students prefer to use these devices for activities related to leisure and entertainment. It also appears that personal environments of mobile learning are shown as technological scenarios of recent introduction in university education, however, it is necessary to expand the research that allows measuring the impact that these methodologies have on the educational process.

Keywords: *Mobile devices, active learning, university.*

ADJUSTING SCHOOL ENVIRONMENT FOR CHILDREN WITH PROFOUND AND MULTIPLE DISABILITIES

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Abstract

An “one track approach” has been defining the Portuguese policies and practices towards an education for all. Nowadays, more than 98% of children with disabilities is attending regular schools, including those with profound and multiple disabilities. This study aims to identify environmental factors supporting the inclusion of children with profound and multiple disabilities in mainstream educational settings. The Individualized Educational Programs (IEPs) of twenty-three children were subjected to a content analysis that used the International Classification of Functioning Disability and Health (ICF) for categorizing environmental facilitators. The examined IEPs were collected from ten schools of Porto district and were designed for children with significant impairments both on mental and neuromusculoskeletal and/or sensory functioning. Children had a mean age of 11 years old and were attending elementary and middle schools. Two co-researchers reviewed the categorization of the units of meaning into the ICF codes. A mean of 10 environmental facilitators were identified on students’ IEPs. Study findings report that 41.74% of the environmental factors comprised products and technologies, specifically the use of: adapted methods of communication (e.g., augmentative and alternative communication - Makaton, PCS and other symbol systems); adapted methods for education (e.g., time management; providing diversified sensory inputs; varied and ludic activities; segmentation of instructions; use of tangible concepts; structuring and anticipating routines/activities). Support and relationships embodied 40% of the facilitators, namely: providing physical and/ or verbal guidance; collaborative relationships between school-family and family-health professionals; positive reinforcement to students’ involvement and behaviors; choice-making opportunities; and tutoring support (identification and use of an adult and/or a peer of reference). The availability of services - such as transportation; extra-curricular activities; social assistance; medical and rehabilitation counseling (e.g., including genetics or neurology appointments) and the composition of a pluri-disciplinary educational team (including occupational and speech therapy) - was also found within students’ IEPs; embodying 9.57% of the identified facilitators. Others’ attitudes were also addressed in students’ IEPs in terms of promoting general acceptance and closeness to peers. Recommendations are outlined from the confrontation between the identified facilitators and the reported needs of students and families.

Keywords: *Profound and multiple disabilities, school inclusion, environmental facilitators, ICF.*

IDENTIFICATION OF SCHOOL DEPENDED FACTORS, WHICH CAN AFFECT STUDENTS’ PERFORMANCE ON ASSESSMENTS

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Abstract

The paper tries to define, name and assess different factors, which can affect evaluations results for students. In Norway, like in all EU countries, students need to collect 30 ECTS. To get ECTS students must pass an examination/evaluation at the end of each subject. The ideas of examining the students are

to see to which degree the students have learned (assimilate) knowledge from the course. The examination is also a type of assessment to see if the students can choose and use effective study-strategies, and if they know how to prepare for and perform during an examination. It is an evaluation of learned skills and examination performance, not students' personal qualities.

Both research publication and authors experience show that in many situations, the students do not achieve an examination score proper to their skills. There are many reasons for this. In the paper, the authors will not focus on general reasons like economic condition or gender divergences but only on factors that can depend on university strategy, such as stress management, examinations technique, understanding of the tasks, etc.

The results of surveys conducted in all class show that the students have unsatisfactory knowledge about effective exams-strategies. They often know about theoretical problems but have insufficient experience with practical use of this knowledge. If the students are working with the curriculum (syllabus) on their own, they have hard time to perform under pressure. Often, their well-learned skills fail under a trial, because they are not prepared for the evaluation itself. Performing pressure, anxiety and stress are examples of variables that can affect student's execution or presentation of their well-learned skills. The students need to prepare themselves to an exam not only by reading the curriculum and solving past papers, but also by dealing with stress and pressure, by thinking ahead and mentally preparing themselves for the evaluation. Schools and universities should help students by teaching them different study- and examination strategies, so that students know how they can perform their best under exams.

The authors collected data through qualitative and quantitative methods (surveys, interview, and collecting anonymous data from exams results) to research study- and examination-strategies they use. The data was anonymized and analysed. The results were used to identify what factors affect students' performance most. The paper shows some suggestions how schools and universities can support students to be more prepared and self-conscious for this kind of situations.

Keywords: *Evaluation, study strategies, examination strategies, students, assessments.*

REPRESENTATIONS OF THE DIGITAL SKILLS OF HIGH SCHOOL STUDENTS: A QUALITATIVE RESEARCH

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Abstract

With the rise of Information and Communication Technologies (ICT) today, digital competencies, for high school students, are necessary skills that must be systematically develop with the awareness of efficient use of ICT. Under this premise, qualitative research was carried out under the interpretative framework of the theory based on the social representations of the students, with the objective of knowing what it represents them to develop these skills in benefit of their formative process. In this sense, an in-depth interview validated by experts, was conduct to eighteen high school students. With this technique, we sought to identify how students recognize their skills in the use of technologies, how they apply them in their learning process, and what they represent for them. Researchers used ISTE Standards as dimensions for the categorization of data about creativity and innovation, communication and collaboration, research and information management, critical thinking, problem solving and decision-making, digital citizenship, and operations and ICT concepts. The results indicate that students recognize having skills for the management of technologies, however, these are not channeled in the sense of benefiting their training process since there is little participation in the creation of materials for the construction of knowledge. Likewise, they recognize the applicability of technologies for collaboration and communication, but they do not apply them as such, the use of ICT is direct to social and recreational issues than for the purposes of academic interaction and collaborative learning. They refer to the little formality which they carry out their investigations and manage the information, they do not apply processes of critical analysis, selection and evaluation of the information they consult. The development of critical thinking is limited, and they do not reach the solution of problems and decision-making based on accurate information. About digital citizenship, students are aware of the importance of using ICT in a responsible, ethical and safe way, however, they have fallen into plagiarism, cyberbullying and among other. Students recognize that technologies can support them according to their

needs for knowledge acquisition and transfer, although they know that it is essential to use habits that lead them to the productive use of the tools and content provided by ICT. It is necessary to continue carrying out this type of research that provides empirical information about this subject.

Keywords: *Grounded theory, social representations, digital competences, high school students, qualitative research.*

THE USE OF INTERACTIVE WHITEBOARDS IN SOUTH AFRICAN SCHOOLS

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Abstract

The study was aimed at determining the impact of the use of interactive whiteboards (IWBs) in South African classrooms. Interactive whiteboards are one of the technologies which are most commonly used in education worldwide. Technology took over our lives and is becoming more necessary for upcoming generations to become technologically proficient. The Technology Acceptance Model (TAM) was used to determine the perceived ease of use, perceived usefulness and attitudes of educators towards technology. I collected data through short questionnaires from three secondary and five primary schools in Gauteng, where I obtained 122 responses and 18 secondary schools in Mpumalanga, where I received 103 responses. It was determined that more primary school teachers use the IWBs than secondary school teachers in Gauteng and they also use it more effectively. Most of the teachers find the IWBs easy to use and integrate the technology in their lessons. Teachers also indicated that the IWBs are very useful to save their work, to help them to make lessons more interactive, visual and interesting and that the use of the technology motivates learners to participate. The biggest concern is that many teachers still did not receive any training and this is an issue that governing bodies and principals need to address.

Keywords: *Interactive whiteboards, primary and secondary schools, South African classrooms, Technology Acceptance Model.*

HOMO'POLY: UNDERSTANDING AND ACCEPTANCE OF DIVERSITY

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Abstract

Sustained gender-specific inequalities in education and upbringing continue to be exposed in numerous studies and surveys. In response to this persistent challenge, national and international organizations are looking to strengthen their co-educational infrastructure to better accommodate the specific needs of all pupils and students, regardless of their sexual orientation, with a view to fighting discrimination and promoting tolerance towards diversity.

The 2015 European Union Lesbian, Gay, Bisexual and Transgender survey illustrated the urgency of the issue. Considerable challenges present themselves at different levels: nationwide controversy about the incorporation of the topic of homosexuality into school curricula, controversial discussions about the implementation of gay marriage, homophobic attacks and bullying (particularly at a young age), the outing of and dealing with homosexual migrants, homophobic behaviour in sport, and homophobic legislation that restricts or even rolls back the rights and protections of the Lesbian, Gay and Bisexual (LGB) community.

This article introduces 'Homo'poly', a European project on homosexuality in schools that was launched in 2016 to address these issues. The aim of this strategic partnership (KA2 ERASMUS+) is to contribute towards a better understanding of homosexuality in secondary and tertiary education.

Keywords: *Gender, homosexuality, migration, diversity, didactical material.*

LEARNING SEVENTH GRADE MATHEMATICAL PLANAR RECTANGULAR COORDINATE SYSTEM BY COMPUTATIONAL THINKING

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Abstract

Computational thinking (CT) refers to the ability to use a computer to solve problems, including “abstracting and modeling”, “modularizing and reusing”, “iterative and optimizing”, etc. And these skills are closely related to mathematical thinking. Therefore, this study takes Taiwan seven grade mathematical plane rectangular coordinate unit combined with CT to develop teaching materials, learning mathematics by CT.

There are three units in the course. The first unit is to connect move directions with x and y coordinates to learn x-axis and y-axis according to moving forward coding blocks. In the second unit, students are guided to apply mathematical coordinate concepts and use repetitive loops to write codes with x+1, x-1, y+1, and y-1 mathematical coding blocks for finding the treasure. In the third unit, students can apply CT's “Loops” and “conditionals” skills to find out the area of a known triangle and the remaining coordinate position after fixing two coordinate points.

In this study, a total of 45 students in the eighth grade of a country in Hsinchu, Taiwan, participated in the one-hour course. The experimental results show that the students' CT ability have statistically improved in the whole. Although there was no statistically significant difference between the pre-test and post-test scores in the mathematical ability of students in the high-score group, there was a statistically significant difference between those of students in the low-score group. The results show that students can improve their CT and mathematical abilities simultaneously according to the proposed course.

Keywords: *Computational thinking, mathematical ability, teaching material, rectangular coordinate system lesson.*

PREPARING STUDENTS IN JAPAN FOR STUDY ABROAD: OVERCOMING CULTURAL MISUNDERSTANDINGS

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Abstract

Increased globalization and the need to rebound from the prior economic recession has prompted Monbusho, Japan's Ministry of Education, to prepare students for Japanese global workforces. This qualitative case study provides essential information about how instructors can guide students through the process of recognizing “habits of mind” (Mezirow, 2000) so they may gain greater ability for intellectual empathy, or perspective-taking about “others,” in preparation for study abroad.

Twenty-five undergraduate students participated in this qualitative study ranging from 18-25 in age and were part of a Cultural Exchange course intended to prepare them for study abroad. This purposeful sample was selected as it the information-rich cases would provide further understanding about issues of misunderstanding and overcoming habits of mind related to cultural norms and expectations of Japan. Twenty of the 25 participants were Japanese and/or Japanese-born and had little abroad experience. Five were international students who had lived and studied in Japan over the course of two years: four males from Macau, Hong Kong, Netherlands, Singapore, and one female from France.

The overarching research question associated with this qualitative case study is: (1) “To what extent were these students able to engage in intellectual empathy?” The Bennett DSIM (1983) model of six categories of intercultural sensitivity were utilized as theoretical basis for data coding. Data was gathered from a response to a critical incident about a cultural misunderstanding. Over 50 pages of responses were analyzed iteratively evaluated for similarities and dissimilarities to ascertain varies codes. Intercoder agreement revealed five levels of intellectual empathy (related to perspective-taking) ranging from 1 (no empathy) to 5 (elevated intellectual empathy which reflects increased multiple perspective-taking).

The overall data findings revealed that 24 of the 25 students' response to the critical incident revealed they had a propensity for intellectual empathy about a cultural mistake. Although one of the 25, a Japanese female student scored a Level 2, indicating a low level of tolerance for the cultural mistake, this finding was also relevant. The researchers were able to understand via her rationale, the Japanese culture-specific concept of Wa (和) which prevented her from breaking from her habit of mind about the cultural mistake in the critical incident.

The other 24 participants scored a Level 3 or above. Having a score of 3 or above does reveal a propensity for intellectual empathy and greater cultural acceptance of another's perspective. In terms of the international students, one female student from France scored Level 5, the other male international students scored predominantly at Level 4. The levels of 4 and 5 indicate greater propensity of perspective-taking and the ability to suspend judgment. However, two Japanese male students also scored at a Level 5 and there were Level 4 scores by the Japanese as well. These findings reveal that one's ability to further engage in multiple perspectives, an enhanced form of intellectual empathy during critical incidents of misunderstanding, may not solely depend on prior study abroad experiences but also on prior cultural exchange study.

Based on this information, the authors recommend universities continue to provide culture-general and culture-specific curriculum that can break habits of mind and promote greater intercultural competence which essential for study abroad preparation. Furthermore, the authors note that findings about lack of tolerance are also relevant in this field of study and can promote understanding about culture-specific habits of mind that may impede intercultural competence.

Keywords: *Study abroad, intellectual empathy, intercultural sensitivity, intercultural competence, critical incidents.*

THE EFFECTS OF LEARNING STYLES OF PRE-SERVICE TEACHERS ON THEIR SKILLS TO PREPARE SKETCHNOTES

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Abstract

The study aims to explore the effects of learning styles of pre-service teachers on the level of their skills to create sketchnotes. In order to collect the data regarding the participants' dominating visual and verbal learning styles, the questionnaire "Dominating Visual or Verbal Learning Style of Learners" was applied to 44 prospective teachers at the faculty of education in a public university. The participants also created sketchnotes on a given topic. The findings indicate that the sketchnotes prepared by the participants with dominating visual learning style included more colours, highlights and other visual elements while the participants with dominating verbal learning style used more texts in their sketchnotes. The findings, thus, suggest that there can be a correlation between learning styles and note-taking skills of learners.

Keywords: *Learning style, sketchnote, pre-service teachers.*

MULTILINGUALISM, INTERCOMPREHENSION AND INCLUSION: THE LECTURIO + PROJECT AND THE DYSLEXIC STUDENT

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Abstract

In the Common European Framework of Reference for Languages: Learning, Teaching, Assessment (CEFR, Cambridge University Press, ISBN: HB 0521803136 - PB 0521005310 www.uk.cambridge.org/elt), it is emphasized that languages should not be considered as compartments ponds to be faced and learned in isolation, and that by "plurilingualism" we mean the integration of different linguistic repertoires which do not necessarily imply complete mastering of all abilities.

Lecturio + is an Erasmus + project funded by the European Community for a partnership of public and private bodies. It develops along two lines of action: production and experimentation of learning paths of Romance languages on the model of linguistic inter-understanding and planning and implementation of an international summer school. Regarding the first action Lecturio + provides for the creation of a multilingual narrative tool intended for 8-year-old children of 3 European countries that guarantees attention also to dyslexic students. Moving from the scientific references on the difficulties in learning L2 for dyslexic students, the working group of the CNTHI of Unisalento, has been responsible for the inclusive design of the teaching tool, it is the book version and the Kamishibai version of a story titled "Thomas and the watermelon ", its adaptation to make it accessible and the methods of fruition and evaluation also through the digital version. This is a text structured according to the criteria of inclusive teaching that is proposed in schools in the partner countries of the project and translated into 14 languages. The purpose of the grant is to stimulate the learning of L2 through immersive experiences. The CNTHI working group has also organized two tools for the exploration of beliefs and attitudes towards the learning of a foreign language of teachers and students of the 4 primary school classes where the tools comes tried out. The aim is to recognize the preliminary components of a positive approach to the language.

Partners of The Lecturio + Project Are: Association Internationale Pour La Promotion de L'intercompréhension À Distance – France; Lycée Le Mas Blanc – France; Fédération Régionale des Maisons Familiales Rurales de Midi-Pyrénées – France; University of Salento – Italy; Universitat de Barcelona – Spain; Universite de Corse Pascal Paoli – France; Universitat des Saarlandes – Deutschland; University of the Studies Roma Tre – Italy.

Keywords: *Intercomprehension, dyslexic students, inclusive didactic tool.*

CHALLENGE BASED LEARNING: AN EDUCATIONAL PROPOSAL FOR SOCIAL TRANSFORMATION

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Abstract

The approach of problematic situations in the educational process requires the incorporation of new teaching and learning methodologies, among which the Challenge Based Learning (CBL) is presented as a pedagogical proposal to favor the development of transversal and disciplinary competences, collaborative work, leadership, research, critical and reflective thinking. The CBL allows the involvement of students in real teaching contexts, so that, through the design and implementation of projects, they generate proposals for solving the main social challenges; this teaching dynamic is based on the theory of experiential learning. The present work describes the antecedents, characteristics, the stages for the development of the CBL, and its main differences with the Problem Based Learning (PBL) and the Project Based Learning. Finally, the stages of the CBL are exemplified with a university experience of implementation of the project called *Social Reconstruction*, which allowed the participation of students and professors in a multidisciplinary and collaborative way in the social transformation of two Mexican communities affected by the earthquake of September 19, 2017.

Keywords: *Experiential learning, challenge based learning, social transformation.*

A GAME-BASED MODEL TO ENHANCE LEARNING AT UNIVERSITY

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Abstract

The present doctoral research, through the adoption of a game-based model, intends to promote the development of learning strategies of the students who encounter greater difficulties along their academic path. The game-based model consists in educational activities that have characteristics linked to the dimensions of video games, gamification and Alternate Reality Games. Particularly, the game-based

model targets students of the Degree Courses in Educational Sciences and Primary Teacher Education of the University of Roma Tre that have encountered greater difficulties in their studies. The paper presents the results obtained at the end of the try-out phase, which was carried out within two workshops of the Degree Course of Primary Teacher Education at the University of Roma Tre with the aim of testing some components of the game-based model.

Keywords: *Learning strategies, university, gamification, learning.*

THE USE OF THE RENZULLI-HARTMANN RATING SCALES (2010) WITH ITALIAN TEACHERS. PRELIMINARY DATA FROM A CORRELATION ANALYSIS

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Abstract

The assessment of Gifted students represents a new emergent area of study in Italy. Education and training programs start from a good evaluation of children's potential and their learning characteristics (Tomlinson, 2012). The lack of appropriate identification procedures often does not allow teachers to understand the student's needs of exploration and knowledge. Consequently, it usually happens that Gifted students underachieve (Neihart & Betts, 2010) and/or do not receive appropriate instructional and educational supports. In continuity with this need of useful instrument of observations for teachers, this study presents the results of part of a macro-study for the adaptation of the Renzulli-Hartmann Rating Scale (2010) in the Evaluation of Giftedness in Italian middle schools in south-eastern, north and centre Italy. Considering the different educational panorama in terms of inclusive practices of Italy and America the study will primarily present the inclusive historical pathway in the American and Italian school system. Successively, the contribute will present the analysis of the correlation between the learning subscale chosen from the Renzulli-Hartmann Rating Scale (2010) and the final marks of 186 students of second and third year of a middle school. These preliminary data will be helpful to understand if the instrument presents a strong concurrent validity and it is relevant to the Italian context.

Keywords: *Giftedness, assessment, school, teachers, Renzulli.*

LEVERAGING EDUCATIONAL SOFTWARE WITH EXPLORATION GUIDES IN HIGHER ARTS EDUCATION: THE VIDEOLAB SIMULATION CASE STUDY

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Abstract

Availability of 'creative computing' toolkits has lowered barriers to the development by educators of complex applications, enabling the development of educational software according to their own assessments of needs. VideoLab presents such a case, an educational software designed to assist the teaching of video technology concepts in accordance to an assessment of the needs at a Film Studies program in a Portuguese higher education institution. This software combines simulations and tutorials and was designed according to principles laid out by the Multimedia Learning Theory (Mayer, 2003) and the Cognitive Load Theory (van Merriënboer & Ayres, 2005), and its use in the classroom is complemented by an exploration guide for students (cf. Paiva & Costa, 2010). Empirical assessment of VideoLab's instructional efficacy was carried out with a total of 40 students over two school years. During specific lessons of the Editing unit, students were given the software and asked to follow the exploration guide while completing some included questions as to measure learning. Other methods were employed simultaneously, including observation by the researcher, screen recording, and a questionnaire based on the Learning Object Evaluation Scale for Students (Kay & Knaack, 2008), as to determine students' perceptions of learning value, design quality, and engagement. VideoLab was found to be an

effective learning object and its design quality was found to be very acceptable. Findings from previous research on exploration guides were also replicated, in that students' close adherence to the instructions was a key to learning effectiveness. Educational software development thus shouldn't stop at the software itself, even in the face of a 'self-sufficient' design. Consequent implications for the reusability of educational software and simulations should be considered and can indeed be a focus of future research.

Keywords: *Higher education, Arts education, educational software, exploration guide, case study.*

WHAT DO EDUCATIONAL PROFESSIONALS THINK ABOUT GIFTEDNESS? AN ANALYSIS OF ATTITUDES AND REPRESENTATIONS

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Abstract

In recent years, studies on teachers' attitudes towards giftedness have become increasingly numerous, though a strong heterogeneity both in the approaches and results. In this direction, focusing on the social dimension of knowledge and on the processes of interpretation and co-construction connected to it, the paper will describe the attitudes toward Giftedness of a sample of 130 Italian education professionals (educators, teachers, pedagogists, psychologists) from North, Centre and South Italy. A specific questionnaire was built to investigate the representations of giftedness. The contribution will explore the main categories of representations connected to Gifted students through an interpretive analysis of qualitative data. We want to verify also if the professional and social role could affect the interpretation of giftedness among the sample of study. Although a great variability is present in the attitudes of the subjects, main dimensions arise in the ideas and imagination of giftedness. The characteristics of the dimensions and how they influence the identification, intervention and education of gifted students is discussed. The contribute reflects on the social representations expressed by the people interviewed about the concept of giftedness and the mental image associated with it. The main differences refer to the meaning of creative thinking and IQ and the image of giftedness as a process of development, growth and plant germination.

Keywords: *Giftedness, attitudes, teachers, inclusion, social representation.*

TEACHING CLIL IN HIGH SCHOOL: A COMPARATIVE CASE STUDY IN TRENTINO ALTO-ADIGE

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Abstract

The present paper represents the research design of an ongoing project conducted in two high schools in the Province of Trento, Italy, during the current school year, 2018/2019, that later on will become a PhD thesis. The aim of this research is to closely observe the implementation of a teaching method called content and language integrated learning (CLIL). The research is a qualitative one using a constructivist grounded theory (Charmaz, 2006) theoretical framework which means trying to establish an adequate theory starting from data. The interest of the project was spurred by the great results the students of the two high school have managed to achieve in such a short period of time since the Trentino Trilingue has been implemented, in November 2014.

The main research questions are: "What are the factors that influence teaching CLIL in high school? How do these factors intertwine and affect each other? What is the best combination of factors that ensure achieving the best results in teaching CLIL?"

In order to be able to answer these rather challenging research questions, data collection was initiated in October 2018 and will continue till the end of the current school year through observation, fieldnotes and interviews of the willing participants. Several CLIL modules of different subjects all taught in English, namely History, Web design, History of Art, Project Design, Geography and Science will be observed in two high schools in the Province of Trento. The lessons are being both observed and audio recorded, tasks

and activities are being photographed, whenever possible, and the willing participants, i.e. the teachers and several students participating in the project, are being interviewed, on a voluntary basis. All these data obtained in the field, will be triangulated by adding the results of the tests the students normally take during a school year and the results of national tests that are compulsory in the fourth and fifth year in high school. Triangulating all these pieces of information will provide additional reliability to the findings. Further on, all collected data will be analyzed and compare using numeric and statistical methodologies and qualitative data analysis software packages.

Motto: "The more languages you speak the more human you are" (*Bulgarian proverb*).

Keywords: *CLIL, linguistic ethnography, English, constructivist grounded theory, high school.*

TEACHING SITUATED DESIGN METHODS: A CASE STUDY

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Abstract

Preparing students in higher vocational education for a career in the domain of design requires the transfer of a deep understanding of the design methods applied within that domain. Within design practices, however, a shift can be observed from methods based on sequences of planned steps towards the design of a certain object, to more situated design methods that favor progression on the basis of actions in the design context towards more open ended outcomes. Moreover, literature on situated design methods suggests that adopting such methods is to *perform situated actions* on the basis of previous experience, rather than to *execute preplanned steps* explained by educators. This poses a challenge to design educators, as students do typically not have much previous design experiences to rely on; they have yet to build up a reservoir of resources and know-how to be able to perform within a design context. To explore this apparent dilemma, we formulated the following research question: *How can education best facilitate situated actions in the design processes of students?* To gain insight into this question, a case study was conducted in which 25 students were observed and interviewed at various stages of their design processes in the context of a minor course on the design of mixed reality projects. Their processes were observed on the basis of natural observation, and data was recorded on the basis of written event sampling. At the end of each workshop, semi-structured interviews were conducted with participants about their design process. The case study revealed that (i) the discussion of story concepts in the classroom environment was dominant in the design actions taken by the students; (ii) planned and situated design actions generally alternated within their design processes; and (iii) limitations in time, facilities and pre-existing experience seemed important factors with respect to their choices in design actions. On the basis of these findings, we conclude that, design education should ultimately facilitate situated actions in the design processes of students by opening up the learning environment for situated learning experiences rather than merely use it for reflection on the outcomes of design steps. This conclusion raises fundamental questions about the organization of higher vocational education in design and calls for a better awareness of the relationship between situated design methods and the learning environments in which they are taught.

Keywords: *Design education, situated action, design methods.*

REVITALIZING HIGHER EDUCATION: HOW TO MAKE EVERY COURSE COUNT AS AN OPPORTUNITY TO PRODUCE VALUABLE RESEARCH

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Abstract

Recently, attempts have been made at Danish Universities and University Colleges to combine teaching activities with research activities. The reasons for this trend are twofold. First, it is well-known that research does not have the intended impact, because the produced knowledge is often not applied in

education and/or professional practice. In that respect, it can be argued that student involvement in research activities can strengthen the connection between research and education. Second, it seems to be a growing trend within research communities, in general, to include the perspectives of relevant participants and stakeholders (cf. ‘participatory action research’).

At University College Absalon, a number of research projects have been conducted that involve student participation. In the following, three of these cases will be presented. The aim is to demonstrate and explore the potentials and the possible dilemmas that this specific research strategy entails.

In the first case, the learning-potential of E-sport was investigated. E-sport is a relatively new learning area in schools and institutions. Therefore, there is limited experience with how these activities can be organized in a pedagogical context. Accordingly, there is a need for new didactic approaches and designs. In the presented case study, students in social work developed different didactic designs. The aim was to enhance the children’s competence in terms of E-sport and digital literacy on a general level.

In the second case, the students investigated the conditions of play in daycares and kindergartens. The point was to explore the potential of using the students’ positions and learning processes as a way to produce knowledge through systematic procedures. Accordingly, the students were active co-creators of important knowledge that will possibly have an impact in the future on the development of the profession. In the third case, the implications of outdoor exams were investigated. In the summer of 2018, outdoor examinations were conducted in order to investigate the students’ experiences, the interaction between the students and the environment, the aesthetic perspective, etc. Furthermore, the point was to strengthen the focus on the students’ practical skills.

Based on the referenced cases, the involvement of students in research activities seems to be a valuable strategy. However, this method also entails dilemmas and problems in terms of the students’ dual role as both students and researchers. These challenges will be discussed further at the END conference.

Keywords: *Student involvement, participatory research, play, science, E-sport.*

COMBINING DIFFERENT SUBJECTS FROM AN INDUSTRIAL CHEMICAL ENGINEERING BACHELOR’S DEGREE FOR ADVANCED KNOWLEDGE ACQUISITION

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Abstract

This study intended to achieve advanced knowledge acquisition by creating effective linkages between specialised engineering subjects. Herein it is describing a pilot experience based on a problem-based methodology (PBM) involving third-year students taking the Industrial Chemical Engineering Bachelor’s Degree at the Faculty of Engineering Vitoria-Gasteiz (University of the Basque Country (UPV/EHU)). In this case, students had to design lab reports regarding how to determine different target substances in real matrices, such as deodorant bottles, brass alloys or lab residues.

Despite the difficulties encountered by students as regards attaining the established objective (elaborate a lab script), the proposed activity was found to be an adequate tool for linking *Analytical Chemistry* and *Chemical Engineering Laboratory II* subjects, as well as an efficient method for internalizing theoretical knowledge. Performance of the activity was evaluated by means of a student survey and SWOT analysis. This experience could be transferred to other subjects related to Engineering or Applied Sciences.

Keywords: *Active learning pedagogy, chemical education, chemical engineering degree, laboratory experiments, problem-based learning.*

FROM CULTURAL TO INTERCULTURAL COMPETENCE: RECENT APPROACHES TO TEACHING CULTURE IN THE FOREIGN LANGUAGE CLASSROOM

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Abstract

At the beginning of her book, Zarate (1986) asks a two-part question: "How, she writes, can one 'learn' and 'teach' a foreign culture?" We see this questioning as a great challenge to both the learner and the teacher. In this presentation, we briefly recall how culture is taught from the Communicative Approach perspective, and we move on to more recent and engaging ways of teaching foreign language culture. The Common European Framework of Reference for Languages (2001) is an important document to start with as it highlights an array of cultural and intercultural situations ranging from interpersonal relationships to values and beliefs, ritual behaviors and body language. We also examine Byram's proposed five categories of *savoirs* that lead to intercultural competence (Byram 1997; Byram and Wagner 2018). We then propose our own cultural activities that promote active learning within an Action-oriented Approach (Euler 2017; Piccardo, 2010).

In this presentation, we posit: a) that attributes of the good language learner can be a good indicator of a learner who is also positively permeable to foreign culture; b) that language instructors should create learning situations that allow learners to develop intercultural communication skills. Modeling our approach according to the Big Five personality traits (Ashton and Lee, 2005), we believe that teachers should then focus on 1) instilling in learners the spirit of curiosity and the need to think outside the box (openness to experience and encounter with the Other); 2) to emphasize the role of sociability (extraversion becoming a dynamic act and a constructive approach to joining others); (3) to emphasize the importance of showing kindness, sensitivity and empathy (agreeableness); 4) to reduce the affective filter in class (neuroticism); 5) and to discourage impulsive comments (conscience).

Keywords: *Action-oriented approach, culture and intercultural competence, personality traits.*

THE UNIVERSITY IS FLAT: THE INTERNATIONAL PERSPECTIVES ON TEACHING INITIATIVE

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Abstract

Auburn University (Auburn, Alabama) created a Global Teaching Academy to recognize and celebrate superlative faculty teaching efforts and activities that contribute to the internationalization of our students and curricula. These efforts continue a focus on high-impact teaching practices, and the Academy is one of the University's initiatives to train all faculty in high-impact practices to enhance student success. The Academy's teaching and learning efforts span the globe and can take place at overseas locations or at home on campus. And they can be focused on Auburn-enrolled students or students of sister institutions (or both), with technologies allowing Auburn faculty to teach from anywhere in the world. All of our Global Teaching Academy faculty are inducted into Phi Beta Delta, a US-based honorary society for international scholars, as part of their Academy membership. Working together as part of the Global Teaching Academy, our faculty have discovered commonalities in both opportunities and challenges in pedagogy across disciplines and geography. In exploring these commonalities and opportunities, Auburn's Global Teaching Academy faculty instituted a project to synthesize and to collaborate on these ideas with other like-minded colleagues around the globe. In this presentation, Auburn's Global Teaching Academy faculty and administrators will share the goals, development process, program content, and outcomes of an innovative strategy in promoting global learning conducted in June 2018: The International Perspectives on University Teaching and Learning Symposium. This was a three-day meeting exploring new and innovative avenues of global teaching and learning informed by theory, research, and practice, as well as current and future trends impacting international undergraduate and graduate education. The symposium created a unique micro community of faculty, graduate students and administrators from diverse cultural, national, and academic backgrounds to discuss global issues affecting teaching and

learning in the academy. Based upon a premise, with apologies to Thomas Friedman, that the “University is Flat”, the symposium fostered this community through an intimate setting that included pre-conference workshops, concurrent presentations, keynote speakers, and multiple shared meals and experiences to encourage networking. Additionally, a unique feature of the symposium was our Conversation Starter book of presenter-contributed essays and an associated speed-dating-style roundtable format designed to guide participants, in intimate small groups, through a discussion of important topics rather than listening passively to presentations. The key role that campus members of our Academy Phi Beta Delta chapter played in facilitating these discussions as well as in presenting their individual approaches to encouraging global learning will also be discussed.

Keywords: *Faculty development, high impact practices, teaching academy, global learning.*

E-ENGINEERING: TEACHING ELECTRICAL ENGINEERING AT DISTANCE

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Abstract

The e-learning concept was born in the 19th century when the development of the mail services in England enabled the delivering of correspondence courses by mail. Initially restricted to printed material, the content was enriched with audio and video records in the third quarter of the 20th century.

Still, it was the development of the Internet that revolutionized e-learning in the dawn of the 21st century. Apart from facilitating the delivery of a broad set of different materials, the Internet enables a degree of interaction between students and instructor and among students never achieved before, considerably improving the learning process. It also enables the development of remote laboratories, sets of equipment that may be manipulated remotely in real-time to perform experimental work. Initially restricted to the implementation of small experiments, the development of virtual instrumentation enabled the accomplishment of increasingly complex tasks.

In engineering disciplines, laboratory work is widely recognized as essential for students to acquire the required skills. The concept of e-Engineering results from the concatenation of those two previous ideas - e-learning and remote laboratories.

Compared with traditional face-to-face courses, e-Engineering courses require a distinct pedagogical and organizational framework. The experience won with an e-Engineering course developed under a first European project resulted in a new European project currently underway whose aim is to document a set of good practices in e-Engineering. By documenting our experience, our aim is to help other universities to develop and manage their own sustainable e-Engineering courses.

Keywords: *E-Engineering, e-learning, remote laboratories.*

THREATS AND OPPORTUNITIES ON THE CURRENT CZECH MARKET WITH UNIVERSITY EDUCATION

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Abstract

Purpose and background: The political and economic changes that took place in the Czechoslovak Republic after the Velvet Revolution and in the Czech Republic founded in 1993, have fundamentally influenced the education market. The market has expanded considerably on the tertiary level of education. Private universities and new faculties and study programs at existing universities were established. A new educational structure has been introduced: a bachelor, magister and doctoral program. These changes bring new opportunities for students, but they also endanger the education market. Many fields of study produce a small number of graduates, which causes some faculties to become at risk of existence. Other study programs produce a large number of graduates who have little chance of applying in their field of

study. The aim of the paper is to answer the question: What opportunities and threats characterize the current Czech market with university education?

Key points: The Czech education market is opening up to the international market. Czech students start studying at foreign universities and foreign students at Czech universities. There are new opportunities for cooperation, but also new problems that have not yet been explored. The reflection of the Czech education market can be inspiring for both universities and for experts coordinating international education program.

Methodology: Demographic data and documents of the state administration, especially ministries, are research objects. SWOT analysis and thematic analysis will be used. The findings will be confronted with empirical researches that dealt with the Czech education market.

Keywords: *University, education, Czech education market.*

SCHOOL PROBLEMS AND TEACHERS' COLLABORATION: BEFORE A COLLABORATIVE PROBLEM SOLVING PROGRAM

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Abstract

This study precedes a collaborative problem solving intervention program with teachers (teachers, educators and school direction board) to tackle together real and complex problems at school and to promote professional development. Therefore, the main objective is to acknowledge teachers' problems, needs and collaborative context at school. In the present study we sought to identify teachers' problems and needs and the main factors associated with the development of teachers' collaborative work. Specifically, we intend to understand which dimensions act as constraints to the development of collaborative work. Ultimately, we intend to contribute with scientific evidence in this field to allow the development of an effective teachers' collaborative problem solving program at schools. Therefore, an empirical study was carried out involving 153 teachers, working in preschool, elementary, middle and secondary schools in a city of Aveiro's region, in Portugal. To this assessment, the following instrument was used: a questionnaire developed by researchers aimed to collect information about teacher's collaborative practices, problems and needs. Our study points out to four main findings: i) the main problems at school identified by teachers are teachers' work overload, physical and/or mental exhaustion, the high number of students per class, teachers' lack of motivation, students' lack of motivation and violence among students; ii) teachers' main needs are the reduction of the number of students per class, well-being and social intercourse activities, and peer support; iii) the efficacy of school direction board and teachers on school problem solving has positive significant correlation with teacher collaborative work; iv) the cumulative total of school problems identified by teachers has significant negative correlations with teachers' participation on collaborative work. The present study responds to the research gap in the analysis of the relation between school context problems identified by teachers and collaboration practices. Before beginning a collaborative problem solving program is essential that the researchers acknowledge teachers context and start with scientific data in order to set the best conditions to an efficient intervention.

Keywords: *School problems, teacher collaboration, collaborative problem solving, teacher professional development, well-being in teaching.*

RETHINKING LEARNING IN THE LIGHT OF DIGITAL TRANSFORMATION AT THE AUSTRIAN SECONDARY COLLEGES FOR AGRICULTURE AND FORESTRY – WHY AND HOW?

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Abstract

The concept of digital transformation has been setting the pace for a while now. It represents one of the most central meta-trends and takes education to a whole new level. Inexorably, the learning environment is becoming increasingly virtual – e.g. Computer Based Training or Web Based Learning, Learning Apps, etc. In order to boost this opportunity properly, there is the need to move beyond merely adding a 'digital' component to traditional teaching. In learning contexts, the idea of 'blending' is not new. Blended learning, nowadays, involves the inclusion of technology-based learning, i.e. providing online or offline activities and materials in the mix, with traditional face-to-face classroom lectures. It is not a wholly new approach to learning and teaching. The practice of including technology-based training has been around since at least the 1960s, first with cassettes, then with videotapes and television, computer and, most recently, the Internet. Given the extent, inevitability and potential of digital transformation there is a clear need to rethink all aspects of learning practices. This ongoing process of digital transformation is inducing changes in the current learning paradigm at secondary colleges for agriculture and forestry, forcing a shift from an instructional system (e.g. face-to-face teaching) to learning experience paradigm. The question of how and whether this process should be shaped, i.e. designing digital learning and flexibly applying technology tools, guides the thinking in this paper. This should not only be applicable for these colleges but transferable. As a starting point his paper looks at the status quo of digitally supported learning at these colleges based on data from an online questionnaire answered by 1,963 pupils. The need for action is clear, from updating the infrastructure and technical standards through changing learning processes to training skill and competence sets for learners and teachers. Reflecting on this data shows that the digital transformation will require the courage to implement more active learning approaches as well as gather experimental experience. Research on current *executive* development experiences also underpins this development. It is also apparent that by considering the person as a whole any new learning paradigms or perceptions of learning will no longer be restricted to the classroom thanks to digital transformation. This paradigm should form a milestone in 'continuous education' and encompass an 'omnipresent learning environment'. The paper contributes to the ongoing discussion on digital learning (in schools) and the continuous development of a research agenda for learning and teaching in the digital age.

Keywords: *Digital learning, digital transformation, holistic approach, secondary colleges, agriculture and forestry, Austria.*

DEVELOPMENT OF INTERDISCIPLINARY INSTRUCTION USING INQUIRY BASED SCIENCE EDUCATION

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Abstract

The task of current educational system is to give all students competences they will need to prosper in global economic competition. However, students very often consider learning content as useless for their everyday life. In the context of natural sciences, this is not only about the choice of learning content but also about the way in which science subjects are taught. Students are not usually able to connect knowledge from individual natural science subjects and to solve interdisciplinary problems so typical for everyday life. It could be one of important reasons of lack of student interest in study of natural sciences. However, teachers are not usually educated in interdisciplinary instruction and they do not know appropriate educational methods supporting interdisciplinarity. Inquiry based science education is one of suitable educational strategies for interdisciplinary teaching/learning. Research findings confirming the effectiveness of pre-service teacher education in interdisciplinary instruction using IBSE are presented.

Keywords: *Interdisciplinary instruction, inquiry based science education, teacher education.*

IT TAKES A VILLAGE: IGNITING THE SCIENTIST IN LOWER TRACK STUDENTS THROUGH PARTNERSHIPS

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Abstract

The paper presents a study on a partnership between schools, a community welfare organization, Science Centre and the National Institute of Education to design, study and implement new approaches of learning for lower track students. Singapore as an inclusive society has sought to address the diverse educational needs of children in the country. This partnership seeks to ignite students' interest in learning Science and address the affective needs in learning, which includes developing students' confidence, competence and social skills. Leveraging on the diverse expertise and experiences, the partners designed tinkering activities to anchor students' learning experiences in exploring, testing and constructing Science ideas. The activities are designed and enacted with linkages to the existing Science curriculum. However, setting a partnership with stakeholders from different backgrounds and domains is challenging. We will describe the journey of setting up the partnership, developing shared goals, building capacity and knowledge, and designing for learning. Also, we will share students' learning and affective outcomes because of the partnership and participation in the designed tinkering activities. Our goal is to highlight how meaningful partnerships can be formed to better understand and meet lower track students learning and affective needs through collective social responsibility according to the familiar proverb "It takes a village to raise a child".

Keywords: *Partnerships, learning, science, lower track students.*

EDUCATING DESIGNERS TO SUSTAINABLE INNOVATION. A REFLECTION ON THE CONTRIBUTION OF DESIGN IN PROJECTS WITH SOCIAL AND ENVIRONMENTAL IMPACT

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Abstract

Design for sustainability is not necessarily a new subject. Research and studies about it rapidly increase, given the current conditions of the planet and the way lifestyles, production and consumption continually move towards unsustainability. The concept, which was initially treated as a design specialty with ecological concerns, has today a broad theoretical and practical scope, recognizing the important role of users, communities, and society in general. Thus, designers are increasingly expected to have more than technical skills. Existing methods and tools taught at universities, and applied to design practice, are currently challenged by the global changes that affect the planet, by transforming the role and responsibility of designers in building a more sustainable and inclusive material reality. With this scenario, universities play an important role on training professionals rather than just researchers, highlighting the need for teaching methods and processes focusing on preparing designers for the complexity of the contemporary world. In order to bring students closer to this new reality, a module was developed within the Master Program in Product and Industrial Design (MDIP) of University of Porto, in which, by applying the Project Based Learning methodology, students were confronted with a real problem and challenged to create innovative solutions on an experimental basis. The We Won't Waste You initiative, presented as a challenge to the students, is a social design project developed in the Design Studio FEUP, in partnership with the City Council of Matosinhos, which aims, through design, define strategies to transform waste into raw materials for objects to be produced by vulnerable social groups. The students, organized into teams, were responsible for all project management, and had the opportunity to share knowledge and learn from each other. The challenge of balancing the social, environmental and technical concerns was supported by the application of methods and tools suggested by the professors, who also played the role of advisors, encouraging discussions and suggesting appropriate tools.

This paper presents a case study of this project, followed by a brief analysis of the applied methods and tools, and the results of a survey with the students. To conclude, the final considerations are presented, aiming to indicate new questions to be addressed, in order to encourage academia to respond to global challenges, rethinking the role of design for sustainable innovation.

Keywords: *Project based learning, design research and education, design for sustainability, sustainable innovation, social design.*

BUILT ENVIRONMENT EDUCATION FOR YOUNG PEOPLE: ARCHITECTS AND URBAN PLANNERS USING CULTURAL HERITAGE AS A LEARNING RESOURCE

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Abstract

Built environment education (BEE) uses tangible objects produced by humans, which constitute our built environment (BE) (i.e. buildings, bridges, monuments) to enrich learning for children. Monuments as facets of our material culture can be focal points of BEE. Cultural heritage has been used as a teaching resource in social studies, cultural geography, (art) history, and sustainable development. Although architects use monuments as BEE curricular resource; looking at the existing academic literature the topic is difficult to discern. Therefore, the article will critically reflect on Lost Traces projects - a Bavarian project for school children on cultural heritage. In 23 projects, through creative spatial interventions pupils had an opportunity to interact with historic relics, archaeological traces, abandoned buildings and constructions, rediscover and bring the 'lost places' in into the public awareness, thus transforming the relics into a common European future. In order to critically reflect on the practice of architects and urban planners as educators using monuments as a curricular resource, and a learning context, a further debate is needed regarding the understanding of cultural heritage and the educational processes around them as constantly evolving cultural constructs, the role of *the educative planners*, and the quality of design and planning tools as educational tools.

Keywords: *Built environment education, cultural heritage, monuments, architects and urban planners, youth participation.*

FLIPPED FOR CRITICAL THINKING: EVALUATING THE EFFECTIVENESS OF A NOVEL TEACHING APPROACH IN POSTGRADUATE LAW MODULES

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Abstract

Flipped classroom is a novel model that can help students develop their learning skills of critical thinking in postgraduate law program. The assumption is made that the flipped classroom benefits students by fully engaging in learning experience through team working and pre-designed class activities with tailor-made questions. The literature about flipped teaching reveals that the flipped model is still underutilized and underexplored in the higher education law teaching. This study thus aims to fill in this gap by developing a model that can provide a foundation for further research and practice for flipped learning in higher legal education. This study presents information about how this model promotes greater critical thinking. The proposed research and design model is a threefold dimension. Every dimension is at the right angles to other dimensions comparing flipped classroom effective rating with: i) different communicative learning stages, ii) engaging experiences, and iii) final grade). This model was implemented in a flipped classroom environment and evaluated based on Module Evaluation Questionnaires and final module grades.

Research was conducted using eleven-week-long postgraduate law modules of "international trade law", "international human rights law" and "international criminal law". The participants in the study were 65

postgraduate students who were attending the above three law modules at Coventry University in the academic year 2017/18 and 2018/19. Data was collected from students who completed module survey in each term and submitted summative assessment for their final module grade.

Result shows that over 90% post graduate law students found the flipped classroom model to be either effective or very effective to promote critical thinking. Students who perceived effectiveness of the flipped classroom had a significant association to their academic performance in the course as measured by their final grade. However, students who found the flipped classroom to be effective were more likely to be satisfied with their learning experience with their counterparts and interaction with lecturers.

Keywords: *Flipped classroom, critical thinking, learning experience, problem-solving activities and team working.*

USE OF BEHAVIOR MANAGEMENT STRATEGIES IN CHILDREN WITH AND WITHOUT DISABILITIES: A COMPARATIVE STUDY OF GREEK PARENTS' AND TEACHERS' OPINIONS

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Abstract

Behavior problems either at school or at home are a great challenge for all people that are responsible for a child's upbringing and education, that is mainly parents and teachers. Teachers often encounter intense stress and discomfort about the classroom management. Moreover, family tranquility and balance are disrupted, since the behavior problems management on the parents' behalf causes stress and anxiety to all members. Thus, taking into account parents' and teachers' physical and psychological exhaustion in their everyday life, the use of positive discipline strategies seems to be a great challenge. The aim of the current study is the investigation of the similarities and differences in the use of behavior management strategies by teachers and parents, as they state them. The research questions were a) which strategies do parents most often use and which do teachers use? and b) do parents or teachers more often use positive discipline strategies? Participants, 110 parents and 200 teachers (of primary and secondary education), were randomly selected and came mostly from cities in Central and Northern Greece. The instruments used were the Teacher Classroom Management Strategies Questionnaire (TSQ: Webster-Stratton, 2002) and the Parent Practices Inventory-Interview Form (PPI: Webster – Stratton, 1998). The results show that, in general, Greek parents manage behavioral problems mostly by using positive verbal discipline strategies, while Greek teachers state that they mostly use coaching, praise and incentives and they, also, almost equally use proactive and SEL strategies, even though only 30% of them have applied a social and emotional learning program in their classroom. Concerning the second research question, teachers seem to use positive strategies more often than parents. The current study has important implications for the scientific field, as its results could form the basis of the design and implementation of a Social Emotional intervention or training program for teachers and parents, who constitute a basic factor in the management of a child's behavior problems.

Keywords: *Teachers, parents, children with disability, behavior problems management.*

INDIVIDUAL SUPPORT FOR INDEPENDENT LEARNING AT THE LANGUAGE CENTER AT UNIL: FROM TEACHING TO ADVISING

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Abstract

The Language center at UNIL offers a twofold language training combining communication skills in a foreign language classroom with a professor as well as independent learning skills while working with advisors on independent learning skills in a multimedia center. Students from beginner level to A2 level have one hour and a half in the classroom with a professor and two times 45 minutes in the multimedia

center where they can go at any time they want. Students from A2/B1 level to B2 level have one hour and a half in the classroom and 45 minutes in the multimedia center. This setting in which the students are working independently in the multimedia center is based on the theories of autonomy, and more specifically, on the concept of individual support for independent learning as defined by M.-J. Barbot (2006). M.-J. Barbot advocates for engaging the learner in his/her learning process by making him/her responsible for the path taken. In this perspective, the learning environment should provide tools and support to guide rather than teach the student in order for him/her to be able to pursue the learning process on a life-long basis. Based on this research, the goal of the action research project led at UNIL aims at improving the quality of the support an advisor can give to a student in his/her independent learning path. However, one of the major challenges for this support – as the advisors in the multimedia center are also the professors in the classroom but playing a different role – is a horizontal, nondirective, computer mediated communication between the learner and the advisor. Indeed, the advisor's role is not to teach, nor to follow the progress of a student but rather to take a student at a T-moment and manage to engage with him/her to understand what are his/her needs and expectations to then be able to suggest activities, strategies, etc. in order to help the student experiment new ways of learning and thus provide him/her with tools on a more and more independent path. Therefore, this computer mediated communication requires new skills and implies a paradigm change that has caused some hesitations from the professors in their new role of advisor. Initial hesitations by the team members included the fear to interact on a punctual basis with students they don't know, fear to interrupt and bother a student who is already engaged in an activity, unease to observe what students do on the computers as if they were spying, insecurity in the validity and quality of a feedback they could give to someone they don't "follow" in a classroom. Following these hesitations, the Language center led an action-based research to address the challenges in computer-mediated communication. To do so, the action research seeks to question the system and the representations about the system by the users (advisors and students). The advisors were given a questionnaire about how they understood the concept of independent learning, about how they felt in their advisor role, what were the strengths and weaknesses of the system according to them, what would they change to improve it, etc. This questionnaire also had a list of ideas of what an advisor could do and the latter were asked whether they had already tried these actions or not, if they would like to try it or not and why. At the same time, the students received as well an online questionnaire about their practice, their use of the multimedia center, their feedback on the type of advice they received by the advisors, etc. In a second part, sessions in the multimedia center were observed by the researcher following an observation protocol sent to all the advisors beforehand with again the list of possible actions/interactions. After analyzing this data, the results were presented to the team and then some individual interviews were conducted in order to get an opportunity for each one to close the process and say what they felt during the study and if this had helped them to a certain extent or on the contrary provoked a supplementary stress. Finally, the team worked together on new tools to respond to the needs that came out of the study. This paper presents briefly the theoretical background and the data that has been used. It, then, discusses the results of this action-based research as well as the current and possible forthcoming tools and training that can be developed based on the findings.

Keywords: *Language learning-teaching-advising, independent learning, computer-mediated learning.*

SELF-EFFICACY AND ATTRIBUTIONAL STYLE IN GIFTED STUDENTS

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Abstract

The contribution, starting from the general construct of self-efficacy, examines the mechanisms of construction of a motivational attributive style, to achieve academic success in gifted students.

The models of interpretation of cognitive giftedness agree in retaining motivation and perseverance as factors determining the success of learning and the transformation of the giftedness into real talent. The perception of self-efficacy and the attributive style guide the motivation and in the persons with high cognitive potential they are not always present. This can lead to a non-directional potential.

What is the function of self-efficacy in promoting talent in students with high cognitive potential? What is the most appropriate type of attributive style to promote in these students? And the role of teachers to enhance motivation, in order to avoid the risk of underachievement and dropout?

The contribution, after having analysed the constructs in the literature proposes an answer to the questions.

Keywords: *Self-efficacy, motivational attributive style, giftedness, talent.*

PERSONAL AND EDUCATIONAL VALUES OF PUPILS FROM DIFFERENT CULTURAL BACKGROUNDS: COMPATIBILITY OR CONFLICT?

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Abstract

One of the most important and traditional values imparted by schools is that of education. However, schools are not the only institutions which channel this value. Preference for the value of education amongst elementary and secondary school pupils is strongly influenced by cultural background, represented in particular by the family or community in which the pupil is growing up. Thus the question arises of whether culture influences the preference for this value, and if so in what way. It is our conviction that the answer to this question is important for the teaching and education of individuals within schools.

As such, in our research survey we are focusing from a qualitative perspective on the significance of the value of education in the values preferences of pupils from different cultural backgrounds and on the description of partial determinants affecting the individual conception of this value, in order to acquire a comprehensive picture of how specific groups perceive education as a value. We are concentrating on two entirely different minority groups living in the Czech Republic, specifically pupils from Roma families, and pupils from intercultural families. We utilised projective method, which gave our research sample sufficient space to describe their concept of life values. For a more complete approach, we also included in-depth interviews with representatives of both groups of pupils in our investigation. In light of the research findings, we then compare personal value preferences with the values which have a basis in curricular and strategic documents regarding teaching and education at a state-wide level.

Keywords: *Pupil, different cultural backgrounds, education, value, Roma, Intercultural.*

FACULTY'S TRAINING FOR AN INCLUSIVE PEDAGOGY

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Abstract

In recent years, the university has been immersed in a process of change and evolution towards the creation of more inclusive learning contexts (Weedon & Riddell, 2016). This requires a deepening review of elements such as inclusive pedagogy and its development in higher education. In this sense, the project 'Inclusive Pedagogy at University: faculty narratives', aims to analyze the beliefs, knowledge, designs and actions of faculty members to carry out an inclusive pedagogy in the university environment. In this research, 119 faculty members from ten Spanish public universities participated. This faculty was selected by students with disabilities for developing an inclusive pedagogy. Specifically, this work analyses what training faculty have, why they consider training as necessary, what training they should receive in order

to contribute to the inclusion of all their students, and what recommendations they would make to universities in order to improve training in terms of inclusion. In order to collect data, semi-structured interviews were carried out with each participant and data analysis was carried out progressively by means of a system of categories and codes. The results obtained in this study indicate that faculty who develop an inclusive pedagogy are trained in pedagogical issues and teaching management tools. However, this faculty members considers that more training in educational and disability issues is necessary in order to be able to adequately attend to all students. The work shows that it is essential to incorporate training into teaching practices in order to build a real inclusive university culture and thus foster awareness of the needs of students with disabilities.

Keywords: *Higher education, faculty, training, inclusive pedagogy, disability.*

ENABLE- ASC: ENABLING COLLABORATION IN THE ASC CLASSROOM WITH YOUNG CHILDREN AND TOUCHSCREEN DEVICES

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Abstract

Young children with autism have many talents and special interests among which can be their affinity with digital technologies (Porayska-Pomsta et al. 2012). Despite the increasing use of mobile tablets in schools, and the motivation of the children to use them, there is limited guidance and research on how teachers use touchscreen technologies in the classroom to support children with autism develop specific skills, such as social communication (Kagohara et al. 2013). Specifically, the literature about the impact of teacher training on developing social communication skills in class is scarce (Mangafa et al. 2016). This study explored the effectiveness of iPad teacher training on improving teachers' practice and interactive style and the child's behaviour and engagement in joint interactions.

An action research methodology was followed at a primary special school in England, UK. Video recordings and semi structured interviews were used to collect data. Video recordings of four children with autism aged 10-11 were conducted as they interacted with iPads over a period of five weeks. Interviews with teachers were carried out to explore their experiences of teaching autistic children and using new technologies in their teaching. Teachers also participated in a training workshop to share experiences and learn about new ways of using touchscreen technologies in class.

Children were more actively engaged in joint interactions when using iPads with their teachers than without the use of technology. During the training workshop, teachers mentioned that discussions about iPad use and autism strategies grew their confidence and helped them reflect on their practice. Following the workshop, teachers were found to adjust their communicative style (e.g. by allowing time for the child to respond), make changes to the environment (e.g. by minimising distractions) and use resources (e.g. by using symbols/pictures) to engage with young children while using the iPad.

Teacher training on iPad use and autism specific teaching strategies is an effective approach that can improve teachers' confidence in using mobile devices in the classroom in more collaborative and engaging ways. Future studies should incorporate the active involvement of school staff and investigate their personal experiences in developing social communication skills in autistic children for the use of touchscreen technologies in real world settings.

Keywords: *Teacher training, autism spectrum condition, technology in teaching and learning, social communication skills.*

DESIGN OF A SUPPORTING SYSTEM FOR EDUCATIONAL IMPROVEMENT WITH ACTIVE LEARNING APPROACHES

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Abstract

As is well-known the role of instructors has changed from conventional “teaching of academic expertise” to “offering new learning to students” in learner-centered education paradigm. Recently, with the spread of active learning practices like experience-based learning in higher education, facilitation or consultation skills, and project management skills have been recognized as necessary teaching techniques for any instructor. In such educational approach instructors are demanded to build up closer relationship between students than that in the conventional lecture style, because it intimately influences on both students' outcomes and educational effects in the approach. Unfortunately, most of instructors provide guidance or coaching to their students empirically without acquiring necessary skills described above. So, it is important to clarify the responsibilities of instructors and the essential knowledge and teaching skills for implementation of the experience-based learning approaches. We have conducted to study about supports for instructors practicing the experience-based educational approach, particularly focus on STEM education, in both educational and technological aspects. In the present paper, we show our study about frequently confused issues or cases of instructors in experience-based approach, and also show design concept and functions to be installed on developing portal site.

Keywords: Educational improvement, knowledge base, active learning, service learning.

MOOCS AS A KEY STRATEGY FOR UNIVERSITY ORIENTATION

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Abstract

In a global knowledge society, there is a growing need for a highly-qualified, and differently-qualified, workforce. Leading to heightened interest on the part of European and National Institutions in student demographics, and figures like total number of undergraduates, graduates, and STEM students. In Italy, the total number of people in the 25-34 age range who have a degree is 20% compared to the OECD average of 30%. And compared to graduate numbers in the rest of Europe, Italy is almost at the bottom of the league table. Italians score similarly on levels of digitalization. Student dropout figures in Italy also compare unfavorably with the rest of Europe. Against this background, European directives state the need for strategic intervention on the part of universities, in orientation and education. On a national level, the Ministry for University Education and Research (MIUR) is focusing on ways of responding to these challenges. And MOOCs and multimedia learning have been cited as a potential tool to help address them. This paper looks at how MOOCs, since January 2019, are being used as part of the new strategy for university orientation for school-leavers at Federica Weblearning, the Centre for Innovation and Research into online learning at the University of Naples Federico II. It explores how courses are structured to address the needs of this particular audience, how students are reached, student engagement encouraged and how success of the initiative is measured.

Keywords: MOOC, multimedia learning, orientation.

MAKING A DIFFERENCE: THE TALE OF RECYCLING EFFORTS OF AN INDIVIDUAL STAFF MEMBER AT AN HBCU

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Abstract

In the area of sustainability individual efforts matter and can make a difference in the commitment of institutions of higher education for sustainable actions and practices by moving the needle closer to the goal of going green. Research supports the notion that one person can make a difference.

Institutions of higher education have the potential to function as change agents for sustainability (Stephens, Hernandez, Roman, Graham & Scholz, 2013). According the University Leaders for a Sustainable Future sustainability implies that the critical activities of institutions of higher education are ecologically sound, socially just, and economically viable. These institutions can function as sustainable communities, embodying responsible consumption of food and energy.

In 2010 Clark Atlanta University, an HBCU took an important step toward reversing global warming when the university's president signed the American College and University President's Climate Commitment (ACUPCC) thus joining over 600 institutions in 50 states in the United States to commit to attaining carbon neutrality. Goals were defined and outlined in the institution's Strategic Plan Initiative that set the university on a path for 20% reduction of energy consumption across the campus in five years and a doubling the campus recycling efforts by 2015 thus ensuring that sustainability issues remained an integral to the CAU experience.

This presentation explores the case of a staff initiated recycling effort at an HBCU (Historically Black College and University). It analyzes an in-depth interview with the staff member whose efforts moved from interest and concern about recycling, to membership of the university's Sustainability Council and ultimately influencing the recycling behavior of others in his unit including other staff, faculty and students. The presentation serves as an example of how one person can make a difference in sustainability initiatives, and offers insight for how recycling as a practice can be initiated and sustained at an institution of higher education in their quest to go green.

Keywords: *Recycling, case study, sustainability, HCBU.*

TEACHING AND LEARNING

RELATIONSHIP BETWEEN ITEM DIFFICULTY LEVEL AND ITEM DISCRIMINATION IN BIOLOGY FINAL EXAMINATIONS

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Abstract

Item analysis is a useful tool for a number of reasons, including the assessment of the quality of the test items. It indicates how difficult each item is and its ability to discriminate between the better and poorer students. The aim of the current study was to examine the quality of Biology Advanced level Paper 1 final examination and to see if there was any relationship between the item difficulty index and the item discrimination index values in these examinations. The data involved scores obtained by post-secondary students attending a public institution between 2014 and 2018. Final examination scores of a total of 1311 post-secondary students aged 16-17 years were analysed. Two different discrimination values were calculated, discrimination index and discrimination coefficient, to find which is the more appropriate to discriminate between high and low achievers. Both were appropriate, however the coefficient gave more positive results. No negative discrimination values, indicative of a 'defective' item, were recorded when using the two different formulae for discrimination. The correlation between the indices was investigated. Neither the discrimination index nor the discrimination coefficient was correlated with the difficulty index. Only the discrimination index was found to be significantly correlated with discrimination coefficient (0.563; $P=0.000$). The overall difficulty level was 'moderate' ($0.3 < P < 0.8$) in all years investigated and optimal ($P=0.50$) in 2018. In the five years investigated, 7% of the items (4/56) were 'too hard' and the rest, 93% (52/56) were of 'moderate' difficulty. Recommendations that result from this study are that tutors should design questions to include 'easy' ones, place them in order of increasing difficulty and to use item analysis to shed light on the discrimination power of the set questions. Results from this study show that a bank can be developed from which questions with the appropriate level of difficulty and discrimination may be chosen to increase the effectiveness and quality of future examinations.

Keywords: *Difficulty index, discrimination index, discrimination coefficient, Biology, post-secondary.*

THE EFFECTS OF IMPLEMENTING THE SYDNEY SCHOOL GENRE-BASED APPROACH IN A THAI EFL WRITING CLASSROOM

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Abstract

This paper reports on students' writing improvements after the application of the Systemic Functional Linguistic (SFL) genre-based approach. The research participants were 37 students who enrolled in the English Report Writing Course. In this study, the approach was employed in the teaching of three genres (description, report, explanation). Similar findings were shown after analysing students' writing drafts of the three genres in that students gained control over the key features of the required genres, however, grammatical mistakes at clause level still existed. This paper discusses how the approach helps students improve their writing. Due to the limitation of space, students' writing on one genre (description) will be illustrated and discussed. This paper will also discuss some implications in terms of language learning and teaching.

Keywords: *Writing skills, SFL genre-based approach, description.*

CREATING CONTEMPORARY PICTURE SHORT STORIES USING INTERTEXTUAL HEROES & PLOT SUBVERSION: AN EMPIRICAL RESEARCH

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Abstract

It is a fact nowadays that the child's ability to acknowledge specific narrative structures has become one of the main objectives in the field of children's literature and its teaching approach. Although there is plenty of research showing that preschoolers are able to comprehend and generate both verbal and pictorial narrative structures, there is no recent study concerning the way in which specific narrative elements can be used in combination to produce a particular literary type. Taking this fact into account, the particular research aims to assess preschoolers' ability of creating contemporary picture short stories using two dominant narrative elements. Therefore, the evaluation of the extent to which the 'intertextual hero' and the 'plot subversion' elements can be used in their narrative speech, is explored. For the purposes of this empirical research, a teaching intervention was conducted with a sample composed of preschoolers from two public Greek Kindergartens, aiming at the creation of contemporary picture short stories containing elements of intertextual heroes and plot subversions. More specifically, the preschoolers' performance of using the aforementioned narrative elements in their narrative speech is evaluated via context analysis. The results prove that the teaching approach of these specific narrative elements led to their use in the preschoolers' narrative speech in order to generate narratives of the picture short story type. The particular research discusses the way in which teaching approaches centered on contemporary picture short story's narrative elements could develop the narrative skill in early childhood.

Keywords: *Picture short story, intertextual hero, plot subversion, teaching intervention, early childhood.*

SELF-MONITORING AND PEER FEEDBACK STRATEGIES: CHALLENGES AND OPPORTUNITIES IN THE EFL WRITING CLASS

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Abstract

Although learning paradigm has shifted from teacher-centered to student-centered for more than a decade, where students are encouraged to be left independent and able to learn writing collaboratively, the teaching and learning in the EFL writing context still poses many problems. The problems can be students' lack of proper understanding of the writing skill; language knowledge limitation; ambiguity of feedback; and low self-efficacy for writing. These are factors that affect how students perform in their writing as well as on their ability to think critically. This study aimed to explore students' attitudes toward the implementation of the self-monitoring and peer feedback strategies in the EFL essay writing class using a four-point Likert scale attitude questionnaire and semi-structured interview as instruments. Participants were 30 mixed-ability third-year undergraduate students majoring in English for International Communication at a university in the northeastern region of Thailand. Findings revealed that students had positive attitudes toward these two strategies, stating that it helped them to learn via social process and to gradually develop their critical thinking skills. This paper, based on the data, concluded that challenges in implementing the self-monitoring and peer feedback strategies in the writing class where the majority of students were in the low-intermediate level due to lack of proper understanding of the characteristics of the writing skill and of learning how to write; due to possible low self-efficacy for writing and collaborating with peers due to their limitation of language knowledge.

Keywords: *Self-monitoring, peer feedback, EFL writing.*

ACADEMIC'S PARTICIPATION ON COLLABORATIVE RESEARCH ON THE CHINESE MAINLAND

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Abstract

In recent years, the Chinese government promulgated to develop collaborative research team to enhance the standard of research in order to reach the international standard. Therefore, many Chinese universities encouraged academics to form collaborative research team to align with the government policies. Community of practice is the relevant academic perspective to help have in-depth understandings on how the academics perceive and participate in the collaborative research team. We employed Little's (2002) conceptual framework which is consisted of the representation of practice, norms of interaction, and orientation toward practice to help investigating the process of academic's participation. This study employed qualitative research method to conduct interviews with 20 academics in the first, second and third tier universities in Mainland China. The academics in four areas which include Arts, Science, Social Sciences, and Engineering would be interviewed. The preliminary observations of our study found that, first, academics were assigned to participate in the collaborative research team by their senior leaders and they employed instrumental views to join the team in order to protect their career development. Second, the old professors gave comments and the young scholars do the authentic tasks. Third, the research design would be easily distorted. Due to the lack of accountability, the process and output of the research conducted by collaborative team tended to be low quality.

Keywords: *Collaborative research, community of practice, applied research, Mainland China.*

WHAT MAKES AUTONOMOUS LEARNING OBJECTIVES AUTONOMOUS: A CASE STUDY FROM HIGHER EDUCATION

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Abstract

Teachers and other professionals at all levels of education worldwide are aware of the inevitable changes to the existing education systems. Traditional teaching methods are failing to yield effective results when mirrored against the skills graduates need to be able to succeed professionally in the modern globalized world. Responsibility for the preparation of leaders for the world of the future rests strongly with higher education institutions. This paper aims to contribute to the various approaches college and university teachers are adopting to introduce changes to their own teaching in an effort to provide their learners not only with the knowledge in their area of expertise, but also to empower them to become self-directed life-long learners and authentic personalities possessing key competences for the 21st century. The author's approach is based on her belief in the power of autonomous learning as a process the learner goes through from the start line of self-assessment to the finish line of the evaluation of and reflection on learning achievements. The core of this paper lies in the presentation of the results of a case study focused on autonomous learning objectives of students in higher education. It outlines the tools and procedures the learners use when working with an e-portfolio to set themselves their own goals prior to the start of their learning, provides a description of the learner goal categories, and presents a conclusion in terms of what makes learning objectives autonomous. Although the specific context of the case study is language learning, the author aims at a broader perspective to draw more general conclusions about learner autonomy in higher education.

Keywords: *Higher education, autonomous learning, learning objectives, e-portfolio, case study.*

EXPLORING THE IMPACT OF A SWISS BILINGUAL PROGRAM THROUGH A MIXED METHOD DESIGN

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Abstract

The use of mixed methods has increased in research over the past decades, especially in the field of education. In this article, we describe how the use of two methodological approaches led researchers to evaluate the competences of 10- to 12-year-old pupils in a bilingual public primary school in Switzerland. The following target disciplines have been selected for the aim of the study: L2 (French or German) and mathematics. The first part of the article focuses on quantitative aspects: by using close-ended questionnaires, L2-tests in four communicative competences and mathematics tests, we have compared the results of children following the bilingual program (n=76) with the results of children following monolingual education (n=214). The second part of the article describes the qualitative approach adopted in order to gain a better understanding of classroom activities and perceptions of a teacher involved in the bilingual program. This part includes the discursive analysis of classroom social interactions and the semi-structured interviews with teachers. The use of mixed methods has been helpful in detecting the complex context of knowledge production in the analyzed setting, in which the use of two languages has been effective in enhancing content and language learning. Therefore, recommendations for the growing number of bilingual programs such as benefits of combining methodological approaches are presented in the final part of the article.

Keywords: *Mixed methods, communicative competences, mathematic skills, bilingual education.*

ASSESSING THE EFFECTIVENESS OF TECHNOLOGICAL TOOLS IN TEACHING AND LEARNING ENGLISH AS A SECOND LANGUAGE

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Abstract

With the developing of information age, there is a tendency for many countries around the world to improve the quality of language education with the help of technological tools. This study tries to investigate the influence of virtual learning platform for university students in their English learning as second language. The quantity research was carried out and the participants were 144 second-year English major students coming from the Faculty of Foreign Languages in Gansu Agricultural University in China. By evaluating the data collected by the questionnaire, the results are as following: (1) It demonstrated the students' perception about using technological tools in studying English; (2) It verified the improvement for students' English competence with technological tools, especially in speaking and listening; (3) There were evidences that the communication between students and teachers had also been promoted; (4) The autonomous learning was formed when it came to acquire a higher level of English.

Keywords: *Technological tools; second language acquisition; English learning; autonomous learning.*

METHODOLOGICAL CREATIVITY IN PEDAGOGICAL RESEARCH – GLOBAL CHALLENGE

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Abstract

Most pedagogical issues cannot be explored or explained in the example of numerous indicators and mathematical analyzes. This does not mean that statistical indicators do not have to be present in pedagogical research, but it is emphasized that without any qualitative indicators not a single pedagogical phenomenon could be fully explored. This topic raised another important issue – the issue of publishing

works in which mostly qualitative methodologies have been used in highly indexed journals. Such works by scientists (reviewers) are often classified as "works of the second order" because they do not show "higher" level of statistics. In addition, such works often do not pass the first step, which is a preliminary review that mainly refers to a methodological analysis. For these reasons, it is much easier to publish a paper using rather quantitative than qualitative methodology. Numerous researchers have already been alerted about this situation, and now it reached its peak.

We will come across a special report by scientists and reviewers if we use the futurology methods of research in the methodological part of the paper. This is, according to some, another step below the "evaluation" of those who do not even know the futurology research methods. As a counterpart to such an understanding and to the research corpus, there is a "third part". In addition to the quantitative and qualitative methodology we have a mixed methodology that seeks to alleviate the positivist approach in pedagogical research.

That opens some space for reflection on the new approach (in addition to the existing ones) in the methodology that would give a new framework for pedagogical phenomena. Can the choice of methodology be less restrictive for researchers? Is a high level of precision and the ability to check the results obtained, and thus greater relevance than the actual changes in practice? Can methodology be "creative"? Those are the questions that need answering.

The paper aims at raising awareness of the importance of a qualitative approach in the research of pedagogical problems and at offering ideas that can contribute to changes in the creation of a new methodological framework that certainly represents a new global challenge.

Keywords: *Creativity methodological approach, mixed methodology, pedagogical research, qualitative methodology.*

SEEING, READING AND LISTENING TO GENDER INEQUALITY/EQUALITY IN VIDEO CLIPS

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Abstract

Sexuality pervades the media, an important tool to access information, in the promoting dialogue and in non-formal education for adolescents and young people (Andrelo & Almeida, 2015; Gallego, 2000). As much as objectivity in communication is proclaimed, the messages conveyed by the media are hardly neutral, developing regimes of authenticity with multiple conflicting meanings about sexuality and gender. Many media narratives, from a consumer perspective, are constructed from successful formulas, acting as proposals for the interpretation of reality and social behaviours, present in stereotyped forms of socially dominant values, norms and behaviour models (Andrelo & Almeida, 2015; Belloni, 2005; Lobo & Cabecinhas, 2013; Teixeira et al., 2010). Music has a prominent place in the media and music videos play a relevant role in its dissemination. During their educational training adolescents and young people should be alerted to certain types of social constructions and video clips may be the means to do so. So, starting from the didactic approach of the following video clips: "As Long As You Love Me ft. Big Sean," "Try," "Havemos de lá chegar," and "Scratch My Back" carried out by 65 7th and 12th year students, whose thematic axes focus on affectivity (paternal, parental, erotic and sexual, friendship) and on love, on interpersonal relationships that are established in the work environment and on violence in affective and/or romantic relationships. The discourses analysed found that stereotyped conceptions about the feminine/femininity/being a woman and the masculine/masculinity/being a man persist.

The discourse presented also refers to: i) psychological differences and personality characteristics; ii) moral attributes of behaviour and personal skills; iii) placing women in a situation of dependency and inferiority; iv) perpetuating the roles traditionally attributed to men and women and unequal relations of power; and v) promoting heteronormativity.

The idea that it is necessary to work on the issues of sexuality and gender conveyed in the discourse contained in video clips is corroborated, so that they are not received passively, because the discourse is fraught with subjectivity.

Keywords: *Sexuality, gender, media, gender equality, video clip.*

A PERCEPTUAL-COGNITIVE PROGRAM TO TRAIN SOCCER PLAYERS' DECISION MAKING

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Abstract

Elite sport is all about making the right decision, at the right time, under pressure and in any context (Vickers, 2007). Many tools are available to train decision-making skills. One used commonly in elite level sports is video feedback. However, with young players, this tool is rarely used due to time constraints and athlete-coach ratio. Nowadays, an alternative to video feedback is used in the form of a perceptual-cognitive exercise (Zentgraf, Heppe, & Fleddermann, 2017). This exercise has significant effects on decision-making skills when used during warm-ups, but cumulative effects have not been measured (Holding, Meir, & Shi, 2017). Also, perceptual-cognitive exercise has mainly been studied in experimental contexts, leaving few considerations for athletes and coaches' reality.

Therefore, this study aims to help a coach integrate perceptual-cognitive exercises in his training program. The first objective is to describe the clinical supervision process offered to a youth coach. Sub-objectives involve (a) understanding the different phases of the clinical supervision and (b) measuring players' performance as indication of change. The second objective is to describe players and coach's perceptions about quality and effectiveness of such program.

One female coach participated in the study, as did her 27 young female players ($M=12,25 \pm 0,28$). They completed a six-week perceptual-cognitive program, twice a week. To jot down the supervision process, a log-book was used by the researcher during 16 weeks. Players' performance was measured with *Stivi* software for response time and decision accuracy during practice ($n=13$). Decision accuracy in game was measured with observation grids, three times: week one, six, and three weeks post intervention. As for actors' perceptions, focus groups were used with players' ($n=2 \times 8$) and an individual semi-structured interview was used with the coach ($n=1$).

Findings indicate that the clinical supervision process presents three phases. In the programming phase, results show that building sequences alone for perceptual-cognitive exercises is complex and time consuming, and thus unlikely to be attempted by the coach alone. In the interaction phase, the six week program was easily integrated to the training schedule. Also, the coach noted positive changes in her players, such as search for information at play and verbal support to partners holding the ball. Also, results show a slight decrease for response time and increase for decision accuracy. Finally, during the evaluation phase, performance measures enabled an objective analysis of advantages and limits of the proposed program.

Keywords: *Clinical supervision, cognition, decision-making, perception, sport.*

QUANTIFICATION OF CRITICAL THINKING SKILLS AFTER WITH COMPUTER QUIZ GAMES IN AN INTRODUCTORY SCIENCE COURSE

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Abstract

Critical thinking skills, in general, and specifically, within the framework of introductory science courses in engineering and science majors, are increasingly a focus of education reforms. This prioritized goal comes along with the ongoing efforts to phase out traditional teaching and steadily replace it with interactive engagement learning and teaching methods. To respond to such goals without being disruptive in the traditional teaching and learning process, we have developed computer quiz games (CQG), implemented for the purpose of enhancing students' interactive engagement and learning gains in

Introductory General Chemistry for Engineering Majors in the English as a Second Language (ESL) environment. The effectiveness of CQGs was quantified using the post-test vs. pre-test approach via FECAT (Freshman Engineering Chemistry Assessment Test) test with Hake's Gain between 15% and 35%. In the second phase of the analysis, we relied on the mapping of distinct categories of FECAT questions to Bloom taxonomy and we classified all FECAT questions into Higher Order Thinking (HOT) and Lower Order Thinking (LOT) skills. We present how HOTs and LOTs get modified and, to a varied degree, improved, with the application of computer quiz games. The results of the application of CQGs were also compared with the application of the paper-based quizzes containing the same questions, offering an insight into the influence of simple computer games on students' hierarchical critical thinking skills.

Keywords: *Critical thinking skills, game-based learning, computer-based learning, higher order thinking.*

EVALUATION OF AN ONLINE LEARNING RESOURCE FOR NURSING STUDENTS PREPARING FOR AN EMERGENCY DEPARTMENT CLINICAL PLACEMENT USING KIRKPATRICK'S MODEL

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Abstract

Clinical placements in the Emergency Department (ED) can offer nursing students a unique learning experience to develop their knowledge and skills in managing the critical care patient. However, the complexity of this clinical placement can be daunting leading to increased stress and anxiety. This can have implications for student learning and clinical performance creating feelings of unpreparedness for the challenges of emergency nursing. Analysis of students' concerns was obtained through an explanatory sequential mixed methods study identifying key areas. Following this, an online learning resource "Are you PreparED" was developed. This educational resource is a repository of useful information relevant to the role of the nursing student in the ED and is focused on the key areas of concern identified by the students.

Evaluation of the online learning resource was structured using the first two stages of Kirkpatrick's model. Following completion of an online survey, students provided feedback on several aspects including: design, usability, relevance and accuracy of information. In addition, comments were obtained regarding their perceived learning, knowledge acquisition and intent to apply to the clinical setting. Perceived levels of preparedness following use of the online learning resource was also explored.

The goal of this study was to provide a valuable online learning resource for nursing students attending a clinical placement in the ED. Evaluation of the resource was paramount to assess quality and establish that learning had occurred, and educational goals met. Suggestions offered by the students provided a valuable source of information for further improvements to this online resource.

Keywords: *Online resource, evaluations, student nurses, emergency department, preparedness.*

MATHS ANXIETY: FURTHER COMPLICATED BY SPREADSHEET SHOCK?

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Abstract

This paper offers an augmentation to the work of Smailes and Heyman (2018) and Farjadpour and Fresneda-Portillo (2018). Smailes and Heyman (2018) considered techniques for teaching mathematics to non-mathematicians (e.g. business programmes) whilst Farjadpour and Fresneda-Portillo (2018) considered mathematics anxiety. What was particularly salient about the latter study was that it involved

undergraduate mathematics students. This struck a particular chord with the first presenter: if mathematics anxiety occurred in students choosing this as a specialism, what additional impacts could be occurring within Business based cohorts? Are there further complexities that require consideration within these cohorts? For example, past experience indicates that the advent of technologies, in this case spreadsheets, can be both a blessing and a curse. Hesse and Hesse-Scerno (2009) posit that spreadsheets have changed the world and suggest that they have potentially saved some mathematics based business curricula. Spreadsheets are now a universal business tool that needs to be learned (Pan et al., 2018). What are the potential relationships between mathematics anxiety and spreadsheet confidence? Do similar factors that impact on mathematics anxiety impact on spreadsheet confidence? This paper illustrates that indeed there are a number of similarities between the two and suggest the impact of technologies is such that techno-math literacies supersedes numeracy capability as a concept (Geiger, Goos, & Forgasz, 2015). Furthermore, additional dynamics linked to confidence are exposed that merit further qualitative investigation.

Keywords: *Mathematics anxiety, perceived study abilities, technology impact, higher education.*

SOCIOCULTURAL AND INTERACTIONIST APPROACHES TO SECOND LANGUAGE ACQUISITION: ARE THEY COMPATIBLE?

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Abstract

Second/foreign language research within the sociocultural-theoretic (SCT) tradition has tended to proceed orthogonally to that in the more conventional interactionist paradigm. SCT researchers, although of course broadly interested in progress in the language in the same way as interactionist researchers are, in practice tend to ask different questions and to use different methods to obtain answers to them. Since the goals of educators with an SCT orientation and those with an interactionist orientation are at least similar, and the phenomena involved in people learning/acquiring/developing in a language are presumably the same whatever the theoretical terms used to describe them, this author suggests that there is a need for a unified account that allows constructs like the zone of proximal development (ZPD; Vygotsky, 1978), on the one hand, and interlanguage (Selinker, 1972), on the other, to be seen in terms of each other. This paper is intended as a small step towards constructing such an account.

Beginning with diagrammatic representations of the ZPD developed by the author and a colleague (Lavin & Nakano, 2017) in an attempt to clarify the spatial nature of the ZPD, this paper will explore how the ZPD could potentially be spelled out in more concrete terms and reconciled with the concept of interlanguage. Further, leveraging the concept of imitation frequently appealed to in SCT, it will be suggested that development could be operationalised in terms of a learner's performance in a range of linguistic output activities, and the outline of such an approach is sketched out.

Keywords: *Zone of proximal development, sociocultural theory, interactionist approach, imitation, interlanguage.*

HOW CAN STUDENT PEER ASSESSMENT BE USED TO IMPROVE THE QUALITY OF STUDENT LEARNING?

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Abstract

The purpose of this study is to discuss the role of student peer assessment as a learning tool at a university in England. This research seeks to determine if peer review, as part of formative assessment, can improve student understanding of the assessment process, which, in turn, should enhance student learning and take the mystery out of the assessment process. Peer assessment aims to improve student understanding of learning as it happens, through working collaboratively, assessing each other's work (usually against set criteria) and providing feedback. An additional goal is to improve students' subject knowledge, the quality

of learning and ultimately the quality of summative assessments. The study suggests that there are benefits and limitations to using this method in teaching; in the context researched here (Primary Education trainee teachers), the benefits outweigh the difficulties. The study recommends that student peer assessment is used by teaching staff as an alternative teaching strategy, which should help to find the balance between different forms of assessment.

Keywords: *Peer assessment, feedback, collaboration, engagement.*

HUMAN BEING DEVELOPMENT THROUGH HOLISTIC AND COMPLEX APPROACH

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Abstract

Several authors from different disciplines indicate that past and present school education systems are not adapted to a human being's natural development. Instead of accompanying the young human being through the phases of his natural development, the school imposes a training that is out of step in terms of requirements, which tends to restrict several aspects essential to his good development and later to his good functioning. Through the insights of several authors from various disciplines, this paper aims to propose theoretical and multidimensional approaches to justify the implementation of a holistic and complex curriculum in order to offer equitable, inclusive and quality education to young human beings. It concludes with practical implications and recommendations based on these proposals.

Keywords: *Human being, development, curriculum, complex, holistic, education.*

OUR TEACHERS: COLLECTED MEMORIES OF PRIMARY EDUCATION IN DERBYSHIRE SCHOOLS FROM 1944 - 2009

Fiona Shelton

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Abstract

This paper presents findings from narrative interviews undertaken with 24 narrators who attended primary school in the decades from 1944 - 2009. Deductive themes were first selected by examining the quantity of content and relevance to the study. Four deductive themes were drawn from the narrators' recollections: *Our Teachers*; *The Lessons We Learned*; *Our Friendships and the Games We Played* and finally *The Books we Read*. The focus of this paper is on the findings from one of the deductive themes: *Our Teachers*. Once the stories had been transcribed, they were analysed for inductive themes. These were identified as: *Pupil-teacher relationship*, noted across each of the decades. A *gendered workforce*, reflected in each decade, except 1999-2009. *Teacher personality* was common across all decades. *Corporal punishment* was common in the decades from 1944-1987, but not present after 1987. Finally, *Teacher professionalism* was a prevalent theme in most decades except 1999-2009. Key findings related to the connections that come with the relationship the teacher forms with their pupils. Teachers who break the mould are well remembered by pupils. The nature of the primary school workforce has changed since 1944, and is now female dominated. Because of changes to legislation, the role of the teacher has evolved, the changes in professional behaviour are noted in the narrators' stories, from decade to decade.

Keywords: *Memories, education, teachers, schools, narrative.*

ENGLISH FOR SPECIFIC PURPOSES – CHALLENGES FOR POST-GRADUATION OUTCOMES

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Abstract

The current level of global economy and the continuous increase of international communication in various fields involve a wide landscape of career opportunities and imply well-prepared professionals. Most students, future specialists, need to become proficient in a foreign language, usually English, in order to meet a predictable range of communicative needs. Thus, the demand for English for Specific Purposes (ESP) is expanding in technical universities. This requires a special language teaching approach, that combines English language teaching and the students' professional concerns. The present paper explains an experiment that consists of teaching ESP in an academic context, but under unusual circumstances. The professional purpose is not only the shaping of future engineers or economists, but also the desire to make language learning interesting, attractive and useful. The novelty of the experiment consists of moving the language classes from the usual classroom into the place where the students perform their practical activities. The new professional environment, which increasingly involves certain accomplishments, is a real provocation for students, more and more interested in terminology acquisition. The students' universe has no limits regarding the power of information conveyed in the foreign language. The lexical material supposed to be acquired is easily kept in mind because the new linguistic material is linked to actual facts and situations from the surrounding environment. Students become more creative and more confident in their professional capacity. Moreover, the course, taught under such circumstances, requires flexibility from the teacher in his choice of methods and techniques, but also the obligation to stick to the requirements of the curriculum.

Keywords: Communication, terminology, practice, language proficiency, professional environment.

A VIDEO RECOMMENDATION SYSTEM FOR ENGLISH SELF-DIRECTED LEARNING

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Abstract

Fast renewal technology and internet have transformed the method how people receive new knowledge and information and the increasing technology-rich environment aids learning. The richer technology is enhanced, the more dynamic, complex and interactive learning and instruction are. Nowadays people can reach various online resources to learn English. This research attempts to accelerate the learning efficiency and to motivate English learners by a recommendation system with multicultural videos, and then suggest the next to start and learn by searching for the best similarities of question items of the wrong responses and the scripts of videos. The recommendation rule is based on the latent semantic analysis (LSA), a method for extracting and representing the meaningful words from articles and building up a large corpus of text. The research adopted the video recommendation system for college student self-directed learning English and two classes of Taiwan college students are the research participants. Both classes had parallel course instruction, teaching content, and the amount of assignment. One was interfered with the video recommendation system as assignment once two weeks and the other with the regular assignment like writing a summarization/reflection after reading or preparing a presentation according to the syllabus. In the experiment group, the responses to questions related to the video were analyzed by the recommendation system and then it suggested the next learning video based on the wrong responses. According to the experimental results, adding the proposed method to the English learning can increase more learning achievements and effectiveness compare to the regular self-directed English learning as an assignment. The ANCOVA result shows that $F = 4.097$, and $t = .048$ and the mean score of the experiment group after adjustment is 156.082 which is higher than 146.367 of the control group. The video recommendation system for English self-directed learning as an assignment after class is more effective than the regular homework.

Keywords: Recommendation system, self-directed learning, English learning, CEFR.

CRITICAL THINKING IN DIGITAL NATIVES: A DOCTORAL RESEARCH THROUGH A NEW TAXONOMY

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Abstract

How to define and how to measure critical thinking (CT)? This paper presents the first findings of a PhD research project that, in its first part, has seen an in-depth desk analysis and aims to outline which traits of CT are needed by “digital natives” in the context of the fourth industrial revolution. Starting from the need to clarify whether it makes sense to speak about “digital natives” and analysing the changes in the labour market and society, increasingly influenced by digital disruption, this research work intends to underline the importance of CT in a world that appears more and more shaped by technology. The domain of CT, in facts, will allow people to distinguish itself from machines, recreate a balance “pro human” and reduce possible environmental problems. The desk research has led to outline 10 characteristics of CT (merged into a taxonomy of the major CT fields) in the areas of school, work and society, “translated” into a questionnaire submitted to a sample of Italian students. The sample has been chosen among philosophy students and others that do not study this subject, to assess whether the teaching of philosophy contributes to the development of CT. Since it is difficult to predict clearly the future of work, preparing students for future life means giving them self-mastery. The guiding hypothesis of the research, therefore, is that the development of CT can help young generations to promote their own “agency” that supports them in continuous evolution environments (both scholastic and not) and allows them to make their talents bloom, starting from the freedom of action and choice. So the promotion of people’s potential becomes as central as the development of a “capability approach”, to allow each person, both individually and collectively, to develop their own makings and have reasonable chances of leading a productive and creative life.

Keywords: *Critical thinking, digital natives, fourth industrial revolution, agency, capability approach.*

FRENCH IMMERSION TEACHER AND STUDENT PERCEPTIONS ABOUT SCIENCE INSTRUCTION IN A SECOND LANGUAGE SETTING

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Abstract

In Ontario, Canada, the vision for French Immersion (FI) education is grounded in the federal linguistic duality approach, which perceives knowledge of Canada’s two official languages (French and English) as an important part of Canadian history as well as a notable asset in terms of student interaction and employability on an international spectrum (Ontario Ministry of Education, 2013). In Ontario, students enrolled in English language schools have the option to be taught academic subjects in both French and English. In response to requests for instructional support from FI Science teachers, representatives from the Council of Ontario Directors of Education (CODE) approached Laurentian University researchers to embark on a project that would contribute to building the capacity of teachers who teach Science in French in the Junior and Intermediate grades (7-10). The current study utilized a mixed methods approach to evaluate teacher perceptions about teaching science to second language learners, teacher beliefs about their own science teaching efficacy, as well as students’ adaptive learning engagement in science. A total of 37 grade 7-10 FI teachers and their respective 324 students from across Ontario, Canada, participated in the project. Data were collected through telephone interviews, completing *the Science Teaching Efficacy Belief Survey* (for teachers) and the *Student Adaptive Learning Engagement in Science Survey* (for students). The findings show that most teacher participants generally felt that they taught science effectively, and were continually striving to find new and innovative ways to engage their students in science classes. However, these teachers faced challenges with respect to finding suitable science resources that are suitable for teaching science to second language learners. Findings from students were mixed in terms of their self-efficacy and self-regulation, for those who expressed a genuine interest in science, they were more likely to be confident in their ability to succeed in FI science classes. The paper

present the findings of the current study and postulates on the potential impact of these self-perceptions from students and teachers in the FI science classrooms, as well as some suggestions for improving FI Science teaching and learning.

Keywords: *French immersion, science, teacher efficacy, teacher perceptions, student perceptions.*

ENHANCING UNDERSTANDING OF HISTORICAL TIME IN PRIMARY CLASSES: HOW TO IMPROVE THE CURRICULUM IN LITHUANIA?

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Abstract

History teaching has been raising many didactic issues recently. First, the concept of the very discipline of history has been undergoing changes, the aim of school education is being shifted from memorizing pre-defined content towards developing historical literacy based on critical thinking and development of historical research skills. Second, admitting the impact of socio-cultural context on pupil achievement, the attitude towards children's receptive skills and their development has been gaining new perspectives. This is of high importance in primary education, where a heroic story is often still dominant. At present, the discourse of primary education curriculum change emphasizes attractive communication of scientific knowledge and the demand for active research to broaden children's deep understanding. However, the development of historical literacy in primary classes still remains to be complicated since, on the one hand, it requires new landmarks – what and how to teach, on the other hand, research in this field has been very limited.

In Lithuania, there is an intention to re-new the curricula in all the fields. Therefore, it becomes relevant to analyse what skills to understand historical time should be developed in primary classes. This scientific problem is solved by carrying out a qualitative analysis of the content of primary education curriculum. Based on the chosen model of understanding historical time (De Groot-Reuvekamp, Ros, Van Boxtel, Oort, 2015), this article analyses the extent to which curriculum requirements of history teaching correspond to the goals and comprehension levels of the model of understanding historical time (A – Emergent; B – Initial; C – Continued) and what should be improved when updating the curriculum. The research results reveal that the present curriculum requirements for the 4th year pupils are inadequately low. They lead towards the stage of acquiring understanding (A – Emergent) rather than Initial (B) or Continued (C) stages. Therefore, while revisiting the curriculum, it is important to pay more attention to the development of historical research and higher thinking skills, that would be a significant step towards gaining deeper understanding of historical time.

Keywords: *Understanding of historical time, history teaching in primary classes, curriculum.*

EXPLORING STUDENTS' REFLECTIVE NARRATIVES ON LANGUAGE AS THE SUBJECT OF THEIR STUDIES

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Abstract

The present research lies within the realms of autobiographical self-reflection extending and developing students' skills of critical thinking on language as the subject of their studies. The importance of looking back over different stages of the learning process and identifying the cases of success and failure in one's life experience has been emphasized by many scholars, among them, Mason (1994), Moon (1999), and Bold (2012). The paper focuses on the data obtained from the semi-structured reflective essays entitled "My Language Learning Autobiography" written by 250 students of the study programme "English and another foreign (Russian, French, Spanish, Norwegian) language" taught at the Faculty of Philology, Vilnius University, during the period of 2015-2018. With more than fifteen years of foreign language(s) learning experience at school and university, the target students have demonstrated their capacity to mediate over the concept of language, discuss the necessity of the knowledge of foreign languages in the contemporary world, assess themselves as language learners and contemplate on the ways, how foreign

language(s) should be taught/learned. The research period of four years allowed us to identify an interesting fact related to the students' attitudes towards a relatively diminishing role of a language teacher. The chosen medium happened to be supportive in examining the students' personal actions as well as self-motivating.

Keywords: *Narrative, self-reflection, foreign language, learning experience.*

COMMUNITY EXPERIENCES THROUGH PEER INTERACTION RITUALS OF A MONGOLIAN-KOREAN CHILD IN THE PRESCHOOL CLASSROOM

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Abstract

The rituals contain symbolic meaning about the culture of the peer group. It is likely that rituals frequently indicate the inclusion or exclusion of specific individuals by the group. Currently South Korean society began to diversify with an increasing number of immigrants and their families, which calls for a more serious discussion on school adaptation of children from multicultural families. This study examined community experiences of a Mongolian-Korean child through peer interaction rituals over time in the preschool classroom, South Korea. The theoretical framework of this study is based on interaction ritual chain and multicultural education theory. The methodology consists of a qualitative case study approach. The research classroom is a 5 years of age class has 8 boys, 12 girls, and one teacher, which has one Mongolian-Korean boy and the others are Korean children. The data were gathered through classroom participant observations 3 hours a day, twice a week for 6 months and interview with a Mongolian-Korean boy, his Mongolian mother and teacher. The data were analyzed by conducting content and meaning analysis. In the research, a Mongolian-Korean child's community experiences were related to transition to group emotions, symbol, and memories over time. The results showed that 1) in the beginning of the semester, he used to ask for help from his teacher whenever he meets conflicts among friends and have often an angry expression during free play time. But he has changed to share positive group emotions between friends through peer interaction rituals 2) in the beginning of the semester, he was interested in 'dinosaur', which was his private symbol and he didn't want to let friends know the information about it. But he has changed to explain dinosaur to his friends and 'dinosaur' has become the group symbol 3) in the beginning of the semester, he didn't say to friends about 'Mongol', which was just his mom's hometown and his private memories. But he has changed to introduce to friends about Mongol and 'Mongol' has become group memories as a common story after project activity. This results described peer interaction rituals that contribute to make a sense of community in preschool settings and offered suggestions for creating multicultural classroom community.

Keywords: *Young children, peer interaction rituals, community, multicultural classroom, preschool.*

CRITICAL THINKING IN DESIGN

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Abstract

Trend thinking is about becoming aware of changes in the user within the context of a specific culture that can affect the future success of products in the marketplace and even the marketplace itself. Learning about abductive reasoning is important to understand for this type of critical thinking. This paper provides an overview of some concepts and processes used to promote critical thinking in an undergraduate upper level course taught in the College of Design at the University of Minnesota on communicating trends. Students who take the course come from the College of Design as well as various other colleges at the University of Minnesota.

Keywords: *Design, trends, future, critical thinking, learning.*

HIGHER ARTS AND DESIGN STUDENTS' ATTITUDES TOWARDS LEARNING COMPUTER PROGRAMMING

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Abstract

A review of undergraduate arts and design programmes offered in Portuguese public higher education revealed some form of computer programming is included in about half of the curricula. This paper aims to address a gap in scholarship about arts and design students' acceptance of programming. A study was conducted which applied a survey instrument based on the Unified Theory of Acceptance and Use of Technology to a sample of students enrolled in those arts and design programmes that include computer programming units. Out of 270 valid responses, 44.8% of students reported to be already familiar with computer programming and 28.5% reported to be currently learning. Their level of familiarity was found to correlate with students' views of the utility, effort, peer approval, self-efficacy and anxiety associated with programming. Among students familiar with programming or currently learning, it was also found those perceiving the activity as voluntary were more likely to harbour a positive perception of its utility and effortlessness, while reporting less anxiety. Positive perceptions of utility, effortlessness and peer approval were also found to correlate with students' intention to program or to learn computer programming, while higher anxiety had a strong negative impact on that intention. Female students, comprising 57% of participants, were more likely to see with greater anxiety the perspective of programming computers. Students' anxiety is therefore a challenge for educators, and efforts to demystify the topic and to mitigate differences between genders in programming acceptance should be encouraged. Given the present prevalence of computer programming in arts and design curricula, scholars are also encouraged to conduct further research, including case-studies and wider technology acceptance surveys.

Keywords: *Higher education, arts education, technology acceptance, computer programming, student survey.*

LOW-COST CODE TO CHECK SOME OF THE 20 RULES FOR EFFICIENT WEB WRITING: A PROBLEM-BASED LEARNING SITUATION

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Abstract

People do not read information on the Web in the same way as they read printed material. Studies have shown that reading on screen is around 25% slower than reading from paper. Instead of carefully reading information, users typically scan it (Morkes & Nielsen, 1997). Users will have time to read 28% of the words if they devote all of their time to reading. More realistically, users will read about 20% of the text on the average page (Nielsen, 2008).

Therefore writing for the web is different from traditional print writing; it has its own rules. Nowadays everyone may be a web writer so everyone should learn the basic rules about how to write effective web content. Users should not only know how to write for the web but also how to present information to facilitate scanning and enhance comprehension.

In short, the text for the web must be easy to understand, concise, scannable and leave no uncertainty in the mind of the reader at first and faster reading.

In order to reach these goals, a previous contribution (García-Cabrera, 2018) offers a brief methodology based on two basic principles (Make text short and Make text scannable) and 20 good practices structured in a series of microcontents (Loranger & Nielsen, 2017). Following this brief guide you can teach/learn how to apply the principles of ease of use or usability of the Web to write digital text. The results show that this minimalist methodology, structured in microcontents, can be taught and learned in just a few minutes.

With the aim of supporting this brief method automatically, this paper shows how to code some of these 20 good practices in an easy and low-cost way. This challenge will be a flipped classroom in whatever subject where student learn programming. In particular, the students of operating systems can learn about bash programming but at the same time about web information system. In addition, the experience of solving this open-ended problem teaches general computer science engineering competencies such as

"Solve problems through initiative, determination, independence and creativity" and traversal skills such as "Manage time and available resources. Work in an organised manner."

The final objective of this paper is to share this problem-situation case to encourage the design and implementation of problem-based learning that allows students to apply content from more than one Computer Science Engineering subject and generate useful, open, low-cost software products.

Keywords: *Flipped classroom, problem-based learning, microlearning, web writing.*

CONTENT BASED INSTRUCTION IN THE FOREIGN LANGUAGE CLASSROOM: CHALLENGES AND BARRIERS IN THE CONTEXT OF AN AMERICAN PUBLIC SCHOOL OF THE STATE OF MASSACHUSETTS

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Abstract

This article examines content-based instruction (CBI) as a didactic methodology for the teaching of foreign languages in a North American public school in the state of Massachusetts. It gives an account of the difficulties experienced by a group of teachers in the implementation of this methodology.

Currently, there is a significant amount of literature which supports CBI as a teaching method. However, few studies are focusing on the actual working conditions of teachers and what happens in the classrooms where this method is followed. Whereas research in language teaching didactics has allowed for critical analysis of this method, it has not accounted for the difficulties and doubts teachers face. Therefore, this study focused on teachers' evaluations and suggestions. For this purpose, the authors conducted interviews, analysed lesson plans and didactic materials and also administered a critical evaluation of the students' proficiency in the target language.

This study identified the handicaps and risks of this methodology. It also highlighted that the way used to implement this product in this school required an effort on the part of teachers, which did not, in any way, translate into benefits for the students.

This study is comprised of four stages:

- 1) Theoretical foundations of the CBI methodology;
- 2) Analysis of Teachers' Feedback and perspective;
- 3) Language ideology in a neoliberal context of data-driven and increased privatization of Education;
- 4) Final considerations and suggestion of possible future research needs;

This research is of particular interest in Portugal where there is a robust governmental push for empowering councils across the country to take charge of their educational needs. This paper sheds light on areas such as autonomy and school innovation, leadership in education and the definition of the concept of being a teacher. It is also relevant for any entity interested in related issues due to curricular changes, together with the professional well-being and stability of the teaching staff.

Keywords: *Content and language-integrated learning (clil), classroom discourse, bilingualism, leadership, critical thinking.*

OVERVIEW OF DESIGN TEACHING ON ENGINEERING COURSES: A COMPARATIVE STUDY BETWEEN BRAZIL AND PORTUGAL

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Abstract

This paper presents an overview of design teaching in the undergraduate engineering courses at the main institutions of higher education in Brazil and Portugal. In order to carry out the comparative study, the curricula of the main engineering courses in Brazil and Portugal were used. The aim of the research is to first analyze how the design, as a disciplinary content, is being introduced in the engineering courses in

both countries. In a second moment, a comparative analysis will be made between the information collected in Brazil and in Portugal in order to register how this conjugation is occurring and whether there is some similarity or not in the way of design approach in the engineering courses in each country. As a result, it is discussed how the design can collaborate with the interdisciplinarity between these areas and contribute with the formation of the new competences of the engineer.

Keywords: *Education, design, engineering, Brazil, Portugal.*

AFFECT AND COGNITION: DOES GENDER IMPACT STUDENTS' MOTIVATION IN SECOND LANGUAGE LEARNING?

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Abstract

In our presentation, we will first talk about the major role that motivation plays in second language learning, and instead of treating it in isolation, we will show how it is deeply connected with and therefore influenced by aptitude, attitude, self-confidence, self-perception, personality, anxiety, and willingness to communicate which all interact with each other. To do so, we will use, among many, the major works of Al-Hoorie (2017), Dörnyei and MacIntyre (2014), Gardner (2010), Gardner and Lambert (1972), MacIntyre (2007), MacIntyre, Clément, Dörnyei and Noels (1998), Tannenbaum and Tahar (2008), Williams, Burden and Lanvers (2002) that have spanned over 50 years, and that have deeply impacted L2 teaching by enlightening educators about the many factors that deeply impact L2 learning, and about the way to help their students maximize their learning.

We will then show how students, by becoming more aware of the major role that motivation and all the above factors play in the quality of their learning, can become better language learners.

Lastly, we will present interesting research done in French immersion programs in Canada (Kissau: 2006, Kissau and Wierzalis : 2008, MacIntyre, Baker, Clément and Donovan : 2002) and in other countries that outline the major role that gender plays in motivation as certain languages are viewed as being 'feminine' (like French for example) by many male students. We will then discover what teachers can do to modify their male students' attitude and motivation towards these languages.

Keywords: *L2 learning, motivation, attitude, gender.*

LITERACY APPLICATION IN DISCIPLINARY PEDAGOGICAL PRACTICES AT LEGAL ENVIRONMENT

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Abstract

This oral presentation has been focused on the results of a research on literacy practices in undergraduate law programs at Universidad San Buenaventura (Medellin Campus), a private institution and at Institución Universitaria de Envigado, a public institution, between terms 2017-II and 2018-II, both institutions located in the State of Antioquia (Colombia). For this purpose, a research work was conducted in three phases. During the first phase, the way some theoretical and conceptual perspectives have been employed to talk about comprehension and textual production in the legal environment at higher education institutions in Latin America was reviewed until reaching the term Literacy. The second phase included the development of a field work involving the application of a questionnaire to students attending the legal program from the two schools about three common selected courses. Furthermore, interviews were administered to professors lecturing such courses and the work was executed on a focal group with students who graduated from both schools. During the third phase, the analysis of results was performed based on the initial categories for the analysis: discursive genres, (legal) field, (legal) argumentation, and inter-textuality, as well as some other categories established later, which are deemed as emerging categories: didactics, textual practices, and orality. This allowed concluding that different

strategies involving literacy which favor disciplinary learning and the development of professional competences are developed in the professors' pedagogical practices. In most circumstances, however, which is accounted by students, alumni, and professors is employed in a non-intentional manner. As a non-intentional literacy, it is not found at a specific place which allows it to actually operate as a pedagogical mediation intended to favor the teaching-learning processes.

Keywords: Law, legal environment, literacy, pedagogical practices, higher education.

TRAIT AND ABILITY EMOTIONAL INTELLIGENCE AS PREDICTORS OF ALCOHOL CONSUMPTION IN ADOLESCENCE

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Abstract

Adolescence is a period that involves a high risk to start using addictive substances due to the multitude physical, psychological and social changes (Espada, Méndez, Griffin, & Botvin, 2003). The study of emotional intelligence (EI) and alcohol consumption in adolescence is a young field of research that becomes relevant as it is found that emotional skills can be learned and improved to prevent risky behaviors (Brackett, Rivers, & Salovey, 2011; Mayer, Salovey, & Caruso, 2008). Several meta-analyses show that EI is a construct that helps to explain abusive alcohol consumption, especially in adult and university population (Kun & Demetrovics, 2010; Peterson, Malouff, & Thorsteinsson, 2011). The present study is one of the first to examine the predictive capacity of both, trait and ability EI, based on Mayer and Salovey's model, regarding different variables of alcohol consumption in adolescent population. A survey was conducted to 844 school children that completed the Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995, version adapted to Spanish by Fernández-Berrocal, Extremera, & Ramos, 2004), and Emotional Intelligence Test of the Fundación Botín for Adolescents (TIEFBA; Fernández-Berrocal, Ruiz-Aranda, Salguero, Palomera, & Extremera, 2011), as well as some items selection of the Survey on the Use of Drugs in Secondary Education Students (ESTUDES 2014-2015, National Plan on Drugs, 2016). Regression analyses revealed that trait and ability EI are complementary dimensions that can help in the comprehension and intervention of the alcohol abuse issue in adolescence. The findings in this research provide guidance for the design of educative prevention programs to promote healthy lifestyles during early adolescence.

Keywords: Emotional intelligence, trait, ability, alcohol, adolescence.

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MODEL-BASED LEARNING: AN INQUIRY APPROACH TO TEACH SCIENCE

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Abstract

Mountain building was one of the first geological phenomena simulated through modeling in the early nineteenth century. Several scientific models were created by geologists in an attempt to understand deformation structures such as faults and folds. However, the learning of this scientific content requires a high level of abstraction and the recall of previous knowledge. The difficulties finding in teaching and learning this process makes evident the not surprising huge alternative concepts diagnose in students. The modeling of mountain building can facilitate the learning process, the irradiation of alternative conceptions and the mobilization of the new learning to solve problems of daily life. With the intention to teach mountain building processes in 7th grade (students age ranging 12-13 years) the authors came across with the need to verify if an inquiry model-based approach could promote meaningful learning in science students. The purpose of this study was not only finding results to this research problem through model-based learning, but also developing education resources to evaluate if the learning was meaningful. Researchers adopt a mixed-methods research (QUAN-qual model) with the data analyzed based on statistics procedure. The data triangulation was made with focus group interviews. A two hours' intervention program was implemented in a science class composed by thirty students (n=30) of a school in the north of Portugal. Before the intervention students were asked to answer a diagnostic test. After intervention students filled a Gowin's Vee. Six focus group (five students per group) were established and interviews were conducted by a member of the research team. Results showed that girls had better achievement in the diagnostic test in questions related to the identification of faults and folds ($\chi^2_4=10.874$; $p=0.028$), in the correspondence between the types of forces that originate these structures ($\chi^2_8=16.148$; $p=0.040$) and their respective deformation regimes ($\chi^2_1=9.357$; $p=0.002$). Likewise, female students had a better performance in completing Gowin's Vee ($\rho=0.515$; $p=0.004$). Nevertheless, both boys and girls explained in the focus interviews how they achieved a meaningful learning supported in the inquiry models' activities.

Keywords: *Inquiry, models, meaningful learning, mixed method research, natural sciences.*

EMOTIONAL INTELLIGENCE AND PERSONAL COMPETENCES AS PROTECTIVE FACTORS OF ALCOHOL ABUSE IN ADOLESCENCE

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Abstract

The abusive consumption of alcohol among adolescents is one of the main public health problems in Europe (European Council, 2017). Despite the diversity of risky and protective factors linked to the abusive alcohol consumption, there is a significant lack of studies focused on identifying the predictive joint capacity of certain personal competences in adolescence. The present study was one of the first to examine the predictive capacity of emotional intelligence and other personal competences such as self-esteem, self-efficacy, empathic skills, assertiveness, coping styles and attitudes towards alcohol

consumption in a teenagers sample. To this end, a survey was applied to 844 Secondary School students. A quantitative and correlational type of methodology was conducted. The results of the discriminant analysis suggest that emotional perception, emotional clarity and self-esteem skills were the most predictive of intensive alcohol consumption. On the other hand, emotional repair, emotional perception, self-assertiveness and self-efficacy were the factors that were the most predictive of participation in street drinking. These findings may be of use in the design of alcohol prevention programs for adolescents.

Keywords: *Emotional intelligence, personal competences, alcohol, adolescence, prevention.*

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ASSESSING OUTCOMES IN ELECTRICITY AND MAGNETISM COURSES IN ENGINEERING DEGREES. STUDENTS' PERFORMANCE ANALYSED BY BEMA

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Abstract

The field of high education is a dynamic environment constantly seeking for new methodologies and tools to promote learning and increase students' performance. Learner-centered teaching methodologies such as blended learning, problem-based learning, learning-oriented assessment, flip teaching, teamwork and effective oral and written communication are new pedagogical tools used in our instruction strategy. These innovative teaching methods can be applied jointly with classical methodologies, acting in a complementary and synergistic manner. The capacity to oversee and assess the progress of student's performance is a critical issue for the academic community. One broadly used tool for measure the student's performance in introductory physics is the Brief Electricity and Magnetism Assessment (BEMA), designed specifically as a standardized instrument to evaluate students' qualitative understanding of electricity and magnetism (E&M) key concepts.

In order to analyze the performance of E&M students, the research-based assessment tool BEMA was used. The E&M course analyzed is included in the Bachelor's Degree in Industrial Electronics and Automation Engineering (DIEA) at the Universitat Politècnica de València (UPV), Spain. It is a second semester traditional curriculum in which the use of traditional textbooks and screencast have been combined. BEMA pre- and post-instruction tests were carried out at the beginning and end of the course respectively. Besides, an additional test, four months after the end of the course, was also conducted in order to analyze the persistence of the learning process.

To deepen understanding of student learning in the E&M course, correlations of pre- and post-instruction scores have been investigated, identifying systematic trends. Learning-persistence has been introduced as an additional parameter in this analysis for the DIEA curriculum. The relevant information obtained through the BEMA test will allow teachers to adapt the educational program and teaching methodologies to improve students' performance.

Keywords: *Assessment, learner-centered teaching, BEMA test, innovation effectiveness.*

USING CLASSROOM ASSESSMENT TO IMPROVE PEDAGOGY - THE JAPANESE EXPERIENCE -

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Abstract

Educational practice itself is in a state of great transition as many nations seek to adapt teaching and Learning activities in an effort to revitalize students' motivation and performance. One such measure, termed 'formative assessment', is a classroom assessment practice that is becoming the heart of the educational framework. This practice promotes continuous learning and assessment dialogue among students and their teachers, creating and sustaining their collective learning identity as respectful and successful group members. Research 'knows' that social engagement has profound psychological effects. It is, therefore, of particular interest to discuss how the interactive instructional methods that characterize 'formative assessment' interplay with the high level of collective action required of Japanese people. This is given a rich socio-cultural context by chaotic aftermath of the catastrophic 9.1 earthquake, named for its magnitude as the Great East Japan Earthquake of 2011. It is in the selfless responses to this event that the words "quiet dignity" refer. These attributes of identity have formed across centuries in unique cultural circumstances, and by their theoretical similarity parallel the core elements required for formative assessment, otherwise known as Assessment for Learning (AfL). The cultural development of the Japanese nation sanctions harmonious and reciprocal group action as the sine qua non of a functional society. This fact supports the proposition that Japan is a naturally hospitable research and development context for AfL. Consequently, many aspects of AfL have presented themselves in Japanese Lesson Study (*jugyo kenkyu*) plans since the 1910s. The authors provide unique insights into the culturally embedded pedagogy and assessment. The article is rationalized around indigenous words (e.g. *kaizen*) steeped in deep cultural meaning thousands of years of in the making. When these key terms are explored, they introduce the Western practitioner to novel yet familiar ideologies that assist active practitioners everywhere with their efforts to explore alternative assessment practices and revitalize traditional methods. These terms are key to an understanding about the exportable nature of indigenous assessment methods when they are designed to promote deep learning (internalization), and sustain collective motivation (social cohesion). This article emphasizes those particular aspects of Japanese cultural tradition that drive effective assessment, create well-rounded (*zenjinteki*) students, and prepare young adults for success in life. The authors take various approaches, exploring how classroom assessments are embedded into instructional process around the world, and how these may be creatively integrated with Japanese perspectives on classroom learning and assessment.

Keywords: *Classroom assessment, Japanese lesson study, culture of evaluation, Japanese teachers daily Jargon, kyoukan toshiteno omoiyari (group cooperation and empathy).*

PORTO PLANETARIUM – CIÊNCIA VIVA CENTER: FROM A DISSEMINATION PROGRAM TO AN EDUCATIONAL PROGRAM

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Abstract

The Porto Planetarium - Ciência Viva Center (PP-CCV) is owned by the University of Porto, but is under the scientific and operational management of the Center for Astronomy / Astrophysics Research of the University of Porto (CIAAUP), which fosters the Institute of Astrophysics and Space Sciences (IA), the largest astronomy research unit in Portugal.

Given the mission enshrined in its bylaws CIAAUP, and therefore PP-CCV, promotes science dissemination, science communication and astronomy teaching. As such, since its creation the PP-CCV

has promoted astronomy and science outreach, through a diverse program that has evolved significantly over the years. Dissemination has been a common practice in the form of specific activities for children in school ages, and with distinct activities for non-specialized public.

However, in 2016, an analysis revealed that, even though the science dissemination component was well developed, the educational one, even from a non-formal point of view, was lacking.

The main goal of this contribution is to present the undergoing research which conceived, developed, implemented and evaluated an educational program for the PP-CCV between 2016 and 2018, and continues as an educational program, available in the current school year.

The educational program was conceived based on problem solving through interdisciplinarity, involving the curriculum from Earth and Life Sciences, Physics, Chemistry and Mathematics. It was created to fit the essential learnings, goals / programmatic / curricular guidelines of the subjects in the Portuguese mandatory schooling. At the same time, a new process of direct and continuous interaction with the visitors was added, since the moment they choose a didactic sequence, until it is implemented in their formal education contexts. From start to finish, the whole process is subject of evaluation by the teacher(s) which accompany the school group.

Preliminary research data shows that this strategy, of creating and implementing a dedicated educational program, has prompted the PP-CCV as a mean of formal education. The first year of implementation of this new educational strategy saw an increase of over 3000 visitors from the previous year. After the evaluation of the visit, the results show that 98.57% consider that it was useful for their students and 98.59% that it was pedagogically relevant.

This first data analysis already seems to indicate that non-formal interdisciplinary learning strategies are not only feasible, but also facilitate the processes of formal education in "real schools" with "real actors".

Keywords: *Non-formal education, astronomy, planetarium, educational program.*

INVOLVEMENT IN HOMEWORK THROUGHOUT THE GRADE LEVELS IN SECONDARY EDUCATION

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Abstract

Homework is one of those topics that have been constantly updated within the educational field. Not only is it an issue that has been debated permanently in different educational sectors, but opinions and attitudes were always very changing and polarized. It is somewhat paradoxical that while the relevance of homework increases as students' progress through the educational system, their involvement in homework tends to decrease. Thus, the present investigation tries to provide reliable information about changes in students' involvement in homework, as throughout the grades of Secondary Education. In addition, it is intended to know to what extent such changes relate to motivational and affective variables related to homework (intrinsic motivation, interest, perceived usefulness and anxiety) of the students themselves. A total of 899 students from 14 schools from three provinces in northern Spain participated in the study, whose ages range from 12 to 16. The data were analysed in two stages. The first stage was a multivariate analysis (MANCOVA) examining the relationship between the grade level (independent variable) and the three variables associated with involvement in homework (dependent variables). Prior performance and gender were introduced as covariables (for the purposes of statistical control). In the second stage, new covariables were added to the previous design, namely intrinsic motivation, interest, perceived usefulness and anxiety regarding homework. The results of this research indicate that, as the grade progresses, the involvement of students in homework gets worse: they do less homework, dedicate less time and use worse this time spent on homework because they do not understand what their purpose is. In addition, the girls spend more time doing homework despite the fact that, according to the results obtained in the present study, homework time management in girls is worse than boys.

Keywords: *Homework, involvement, motivation, secondary education.*

ENHANCING MICRO TEACHING TECHNIQUE THROUGH THE INCORPORATION OF LESSON STUDY: PERCEPTIONS OF INITIAL TEACHER EDUCATION MATHEMATICS STUDENTS AT CENTRAL UNIVERSITY OF TECHNOLOGY

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Abstract

Microteaching is a compulsory course in the initial teacher education programme at Central University of Technology. It is aimed at preparing students for teaching practice. Its key strength is to provide a supportive environment in which student teachers could practice their teaching skills in manageable portions, receive feedback on their performance, reflect on the feedback received and subsequently use the information received to improve on their teaching. Using lesson study, teachers have a means for planning, observing, and conferring with others. Lesson study is an initiative that aims to enhance teaching and learning through the methodology of professional sharing of practice. This study explored the perceptions of Initial Teacher Education (ITE) students on the effectiveness of Lesson study in improving micro teaching at the Central University of Technology. A total of 80 initial teacher education mathematics students in their third year of study participated in this study. A five-point Likert scale questionnaire with variables ranging from strongly disagree to strongly agree was used to explore the perceptions of ITE students on the effectiveness of lesson study in enhancing the acquisition of teaching skills. Results indicate that the lesson study approach is a viable ingredient in the process of micro teaching in that collaboration in lesson study reduced feelings of professional isolation; student teachers further reported a sharper focus on pupil learning and enhanced confidence in dealing with questions from pupils.

Keywords: *Micro-teaching, lesson study, collaboration, observation of learning.*

PARENT'S PERCEPTION OF 'PLAY' AND 'HOLISTIC DEVELOPMENT' IN THE EARLY YEARS

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Abstract

In 2013, the Ministry of Education (MOE) launched the refreshed Nurturing Early Learners (NEL) Framework to provide curriculum guidelines for pre-schools (childcare centres and kindergartens) in Singapore. Subsequently, the Early Childhood Development Agency (ECDA) provided the pre-schools with intensive training and comprehensive resource materials to support the implementation of the NEL Framework (MOE, 2013). The key purpose of the NEL Framework was to ensure that all children will proceed from pre-school to primary school with a common set of knowledge, skills and dispositions. However, three years later, this is not the case, and many pre-schools are facing challenges in implementing the NEL Framework (Alfredo, Ng, Munez & Bull, 2016).

While parents want the 'best' for their children, they may not realise the importance of non-academic skills for the holistic development or well-being of young children. They may not realise that the non-academic, soft or 21st century skills are important not just for primary one (P1) but for future study, work and life (Bergen & Fromberg, 2010; Dockette & Perry, 2001, Fisher, 2008; etc.). Hence, it is important to probe, listen and ascertain exactly what their fears, anxieties and concerns are and why they have such fears, anxieties and concerns, in order to provide the necessary programs and initiatives to help parents understand, appreciate and support 'play' and 'holistic development' in the early years as well as the NEL Framework (MOE, 2013). Hence, the key purpose of the study is to understand how Singaporean parents view the terms, 'play' and 'holistic development' in the early years, and what these terms mean to them.

30 parents were interviewed face-to-face individually once for about one hour at a pre-arranged time and place convenient to them. The interview was audio-recorded, and the audio-recordings will be transcribed verbatim and analysed for the study.

The findings from this study will help preschools serve children and their parents through better communication about their programmes.

Keywords: *Play, holistic development, parent's perception.*

‘WE LOVE READING, BUT...’: NIGERIAN CHILDREN ON FACTORS THAT AFFECT THEIR READING HABITS

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Abstract

In recent decades, Nigeria has repeatedly had low pass rates in examinations taken at the end of secondary school. There are claims that the low student achievements are largely because Nigerian children do not read for pleasure, even though these claims lack the backing of empirical research. This qualitative study therefore explores reading for pleasure done by a group of 9–12 year olds in a book club in Nigeria. It aims to shed light on the extent to which the children read, how, what, when and why they read, and the factors that affect their engagement with reading for pleasure. A study of children’s reading habits is important as some research suggests that reading for pleasure may offer many benefits including reading proficiency, increased general knowledge, and improved vocabulary. Through an interpretivist theoretical perspective, the study gathered data using the methods of collage making, observation, questionnaire, and interviews. Findings indicate that the participants read for pleasure, though their level of engagement with reading for pleasure differs. All the participants read printed books, and a few participants also read digitally. Popular reading materials include fiction, comics, factual books, crime and detective books, and adventure books. The children have different motivations for reading, but many state that reading is fun and interesting. Some research done in the United States and the United Kingdom indicates that factors such as availability of books, choice of texts, pedagogies of reading and an enabling adult affect children’s engagement with reading for pleasure. This study examined the relevance of these factors to the participants’ reading habits and found that the reading engagement of all the participants may have been, in varying degrees, influenced by them. Other factors that possibly affected the participants’ reading habits were the reading environment, reading aloud, and the availability of social networks and affordances that support leisure reading. The findings could provide guidance on practices that strengthen children’s engagement in reading for pleasure and thereby help in the improvement of student achievement in Nigeria.

Keywords: *Reading for pleasure, children readers, factors affecting reading habits, reading engagement, Sub-Saharan Africa.*

EXPANDING STUDENT SPATIAL INTUITION TO LARGER SIZE SCALES: A HYBRID HANDS-ON AND COMPUTER VISUALIZATION APPROACH

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Abstract

Most students have an intuitive understanding of how to gauge the distances to objects in their local environment. Through a combination of binocular vision and visual cues such as the perceived sizes of known objects, students can construct a three-dimensional mental model of their local surroundings, and use it to make sense of their environment.

They do not typically understand, however, that the same geometric principles behind binocular vision and depth perception are also used for quantitative distance determination by triangulation and astronomical parallax. We have built a hybrid exercise combining experiential learning with computer visualization for undergraduate students to explore distance determination in the local terrestrial and astronomical contexts in an effort to help them bridge their intuitive understanding to geometries where distance measurement is not possible visually, but is possible via more precise measurements made with instrumentation.

Students explore distance determination in an outdoor setting where the distances to objects (~50m) are too large for intuitive distance measurement, but can be determined quantitatively through a simple triangulation process. By measuring the direction to a target object from two different positions separated by a known distance, they can determine the distance to the target. This triangulation method is used by

moving ships at sea, to determine the distance to, say, a visible lighthouse. It is also the method by which astronomers measure the distance to nearby stars (In this case, the “moving ship” is the Earth in its orbit about the Sun.).

The second component of the activity involves using the multi-perspective visualization capability of the WorldWide Telescope (WWT) virtual environment. WWT, originally developed by Microsoft Research, and now managed by the American Astronomical Society, is freely available to the world community. WWT represents real astronomical data in a three-dimensional environment that students can investigate from a variety of physical perspectives. With this software, students can compare the apparent locations of nearby stars from widely separated vantage points (much larger than the size of the Earth’s orbit), making the shifts in star positions due to the parallax effect obvious. They can see how their view of universe changes as they change their observing location, connecting their intuitive understanding of distance measurement, and their experience with terrestrial triangulation, to the astronomical realm.

Assessment data indicate that, after participating in this hybrid activity, students better connect their intuitive understanding of distance determination to the quantitative calculations required for precise measurement of distance.

Keywords: *Undergraduate science education, STEM, visualization, laboratory activities.*

MATHEMATICAL VISUALIZATION, MANIPULATIVES AND GEOMETRIC PROBLEM SOLVING: A CASE OF STUDY

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Abstract

The role of mathematical visualization in problem solving process and the incidence of material tools on apprehension of mathematical concepts have been subjects of intensive research for a long time.

In the present paper we analyze the use of a manipulative in solving a space Geometry problem, providing a critical account of its theoretical framework and its effectiveness in various teaching contexts. Previous researches (Leikin, Stylianou, & Silver, 2005) examined students’ use of visual representations, across various ages and mathematical education levels, proposing a challenging task to the study participants: describe the net of a truncated right cylinder. Given the visual nature of the problem, any solution strategy required a translation between 3D and 2D representations, regardless of the more or less advanced mathematical knowledge. In the behavior of the successful visualizers, similarities were identified, such as selection of what needs to be visualized and transfer of visual images in a “symbol system”, see Nemirovsky (1994); while both young and older low-achieving students reported difficulties in isolating object’s relevant characteristics.

About the same problem, a physical manipulative was designed (Cumino, Spreafico, & Zich, 2017) in a dissemination context where Geometry was a tool for understanding architectural shapes, under the need of quickly and correctly communicating the solution, avoiding mathematical formalizations: It shows a right cylinder truncated by oblique planes of various inclination and allows to obtain its net by a simple unwrap.

Currently, this manipulative is being tested at the university level, on first year students of the bachelor program in Architecture and at the middle school level, on second year students of a Technology course; in both teaching contexts, different for age and levels of mathematical knowledge, it is proving useful in making students able to elaborate individual solving strategies, to set up the problem correctly and to improve its translation in symbolic language for the holders of advanced mathematical tools, speeding up teachers’ interventions.

Keywords: *Visualization, geometric problem solving, physical manipulative, mathematical teaching strategies.*

STUDENT EVALUATION OF TRANSFERABLE COMPETENCES AND REQUIREMENTS FOR THEIR STUDIES

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Abstract

At present, the quality of education is getting more and more important at the level of educational processes, educational institutions, and overall the education system. This trend is also related to so-called accountability, when educational institutions are responsible for both consequences and quantity and quality of their services. In this way, various evaluations are carried out at universities trying to identify, evaluate, measure and compare quality. However, attention is often paid to tools for measuring learning outcomes through didactic tests, or to different ways of engaging learners' opinions through questionnaires focused mainly on the evaluation of learning environment and performance of the academics. Nevertheless, apart from above mentioned, student evaluation is also necessary to focus on aspects related to students themselves, it means on their complex skills. In this context, the paper deals with transferable competences and methods of finishing university courses. A questionnaire exploratory survey maps the degree of saturation of transferable competences and preferred methods of completion of courses by means of subjective evaluation of the target group, i.e. students of bachelor and master study programmes of a selected Czech university. The results can be used for the administrative decision-making apparatus to help to improve the planning and implementation of the educational processes of the university, both at the curricular level and to ensure optimal conditions for the completion of courses.

Keywords: *Evaluation, transferable competences, saturation, university exams, employment during studies.*

ORGANIZATIONAL ISSUES

A VISUAL CONTENT ANALYSIS OF SCHOOL IMAGES AND SIGNS: THEIR EFFECT ON HIGH SCHOOL STUDENTS

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Abstract

Visual methods are often marginalized in educational research and have not been employed to collect information about cultural identities of the school and its effect on the students. The aim of this presentation is to examine visual methods for understanding the visual culture of schools and how these images are perceived and processed by high school students in Greece. It reports on a participative research project in four secondary schools in Greece from distinctively different cultural and economic backgrounds. The strategy of research applied in this study is grounded theory and the qualitative methods of research are: structured interviews (4 interviews done and transcribed during one month), scaled questionnaires were distributed (80 done during one month and transcribed) and photography (800 photos done during one month and described) and repeated visits in schools. There were at least 80 students involved at the project during one month. Moreover this presentation draws on content analysis as a systematic, rigorous approach to analyzing documents obtained or generated in the course of research. Finally the presentation will conclude that these approaches provide a comprehensive view of how visual images are produced and interpreted, and of what their potential social consequences may be. The use of visual methods is not without challenges however. Securing ethics approval and school participation along with problems with camera retrieval and protecting participant agency were some difficulties encountered in the current study. For those wishing to pursue less conventional research methodologies in educational settings, this presentation will also highlight potential benefits and struggles.

Keywords: *School culture, visual images, multimodality, participatory social research, hidden curriculum.*

“INVISIBLE” STREET CHILDREN - EDUCATIONAL PERSPECTIVES AND / OR SOCIAL PROBLEM

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Abstract

This paper uses available literature to theorize, analyse and define the syntagma of “street children” and describes the descriptors of implication of the namesake theme. Numerous research, both psychosocial and other perspectives, point to the increase in the number of *street children* that are becoming a growing global problem, especially concerning modern emigration flows during the so-called emigration crisis in Europe, but also in the world. The problem requires the finding of starting point of understanding who street children are, as well as factors that conditioned the existence of this phenomenon. Thus, this paper can be seen also as a possibility of potential prevention since once assimilated children on the street have a hard time becoming equal participants in society with equal opportunities. However, the problem of street children could also be observed as an unused social capital since these street children withstand the harsh reality, succeeding in assimilation often imposed upon them in their struggle for survival. Researches shows an increase in sexually transmitted disease such as AIDS among street children, as well as increase in hepatitis, prostitution and beggary. Despite the fact that street children represent a significant challenge to social workers, physicians, educationalists and other experts, majority of street children are literate, know basic calculations and poses exceptional diction despite the fact they never receiving school education. In conclusion, the paper tries to present global and national perspectives of street children.

Keywords: *Street children, education, social capital, prevention.*

TEACHERS' FIRST LANGUAGE USE IN A SECOND LANGUAGE LEARNING CLASS ROOM ENVIRONMENT

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Abstract

The aim of this study is to investigate teachers' belief and perceptions about First Language (L1) use in English as First Additional Language (FAL) in a learning environment. This is a descriptive survey in which seventy two Second Language (L2) teachers from Motheo district in South Africa volunteered to participate in this study. A questionnaire which probed into beliefs and perceptions about employing learners' L1 (Sesotho) in L2 (English) learning was used to collect data. The data obtained showed that L2 teachers used L1 mainly to provide feedback; teach new vocabulary; explain grammar; build rapport; manage the class; give individual help to learners and save time in lengthy task explanations.

Keywords: *Bilingualism, first language, multilingualism, first additional language.*

INSTITUTIONALIZATION PROPOSALS OF ATTENTION TO DIVERSITY AT UNIVERSITY FROM THE VISION OF LEADERS

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Abstract

This paper outlines a descriptive and interpretative qualitative research project that is framed within a larger study, the general aim of which is to diagnose university policies and practices in order to propose an Institutionalization Plan to Address Diversity in Higher Education. We have investigated the vision of university leaders as a key part of this process. To this end, 26 institutional leaders from the University of Córdoba (Spain) have been interviewed, selected intentionally in accordance with the following criteria: leadership level (Vice-Chancellor, Department Director, Dean, Director of Specific Services, President of the Student Council, Representatives of Administration and Services Staff), representation of the entire university community (Teaching and Research Staff, Students, and Administration and Services Staff), encompassing all areas of knowledge, and gender balance. Discourse analysis was used to code all the information produced - deductive and inductive -, followed by recoding and categorization, with code validation by means of intercoder agreement and expert judgment. The findings highlight existing "good practices" but also recognize difficulties. Proposals for institutionalization pertain to the following areas: management (policies and strategies, infrastructure, recognition, external entities and resources); education (awareness and sensitization, training and specific measures for students from protected groups); innovation, research and transfer, dissemination, evaluations and culture. The discourse of these leaders highlights training, awareness and dissemination as fundamental lines of action. In addition, we found certain intergroup differences between the different levels of leadership. The conclusions coincide with previous studies with regard to some of the proposals. However, in this case, a greater volume of more specific categories and subcategories is obtained. Consequently, this study contributes greater applicability and functionality to the context studied with a greater possibility for transference. Furthermore, unlike the international studies developed that focus on the body responsible for addressing or dealing with diversity, this paper takes into account all levels of organizational leadership and sectors of the community. This is important if we intend to address or manage diversity as an integral part of university life.

Keywords: *Institutionalization, addressing diversity, higher education, leadership, policy development.*

INVOLVEMENT IN COMMUNITY-BASED ACTIVITIES OF PERSONS WITH PROFOUND AND MULTIPLE DISABILITIES

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Abstract

In Portugal, regular schools embody the main context of learning of children with profound and multiple disabilities. Paradoxically the end of schooling – that aims to prepare the individuals for a full citizenship - often means a discontinuity on inclusion process, with less opportunities to be engaged in common contexts of participation. The Day Services or Centres for Occupational Activities comprise the main support services for youths and adults which complexity of disabilities prevents the access to employment. To value the individuals' social role and their involvement in the community encompasses the main principles of these services. In this study we examined to what extent the activities performed by individuals with profound and multiple disabilities – users of the Day Services - are based in the community and are of significance. Data was collected using a questionnaire that listed different categories of activities (within learning, communication, mobility, self-care, domestic, work, and recreation and leisure domains) that were identified in a previous study as characterizing the actions promoted by the Day Services. For each category, respondents were asked about the context of occurrence (i.e., inside the centre or in the community) and their significance for the users (with a 4-point scale varying from “low” to “a lot”). Respondents were occupational therapists responsible for planning and implementing activities held in 43 centres in the North of Portugal. From a total list of 19 activities, a mean of 5 were performed in the community and concern, predominately, to recreation and leisure category (including *shopping, tours and visits and laze*). Most activities were performed inside the centres, namely: the development of work tasks; training on domestic activities as preparing meals, and cleaning; and overall learning activities. Significance was judged? in a median of 4 – meaning “a lot” -, with exception to *audiovisuals and games and play activities* that, inside the category of recreation and leisure, were judged as having a reasonable significance. A rupture of traditional centre-based models, toward increased use of community resources and activities are discussed in terms of opportunities and challenges of an inclusive society.

Keywords: *Profound and multiple disabilities, community-based service, day services, social inclusion.*

THE ROLE OF KNOWLEDGE MANAGEMENT TECHNOLOGIES AT A POLISH UNIVERSITY – A CASE STUDY

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Abstract

The purpose of this paper was to present an analysis on challenges and barriers connected with the use of technical, or Information Technology (IT) tools of knowledge localization, creation, use, transfer, and codification at a Polish university. A synthetic review of the literature on knowledge management (KM) IT tools is presented. Results of surveys and in-depth interviews on the use of IT KM tools conducted among academic teachers, university IT specialists and university administrative staff from the Polish-Japanese Academy of Information Technology in Warsaw are presented. Discussion and implications are carried out. The main conclusion of the study is that although teachers and researchers are aware of the usefulness of various IT KM tools and are willing to use them in their daily work, there is still room for improvement. It seems that the main challenge for academic authorities is to conduct a thorough analysis of the real needs of academics concerning KM IT tools and to provide them with both the tools and the knowledge how to use them. A further, more comprehensive research into the matter will be worth conducting.

Keywords: *Knowledge, knowledge management, it tools, higher education.*

ROLE OF SOCIAL DIALOGUE WITHIN PARTNERSHIP APPROACH TO EUROPEAN COHESION POLICY AND CROATIA EXPERIENCES

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Abstract

The aim of the research is to analyse the role of social dialogue within the partnership approach in European cohesion policy. Since the Republic of Croatia has become a member of the European Union in 2013, the objective is also to analyse the Croatian experience in this area. The fundamental objective of the European cohesion policy is to equalize regional inequalities across the entire territory of the European Union. In order to achieve this goal, among other things, it was necessary to establish a partnership, and social dialogue has a significant role within this partnership. There is a close link between partnership and multi-level governance (European, national, regional and local). These are the key principles underpinning the European Cohesion Policy. Partnership and social dialogue are particularly pronounced when concluding a partnership agreement, which is a novelty in the programming period of cohesion policy from 2014 to 2020. In doing so, each Member State, in accordance with its institutional and legal framework, has the obligation to organize a partnership with the competent regional and local authorities. Each EU Member State is required to prepare Partnership Agreements (Vertical Partnerships) in cooperation with partners as defined in the legally binding EU Regulation (EU) No. 1303/2013 and in dialogue with the European Commission. The Partnership Agreement establishes the mechanisms of a Member State for the effective and efficient use of the European Structural and Investment Funds. Partnership, in particular, includes social partners who, through negotiations and consultations in shaping the European Cohesion Policy, define social dialogue. The said Regulation stipulates that the partnership agreement must be in accordance with the principles of subsidiarity and proportionality, thus favouring the involvement of social partners at local level. Given the fact that the Agreement on Partnership between the Republic of Croatia and the European Commission on the use of EU Structural and Investment Funds for Growth and Jobs in the period 2014-2020 has been adopted at the EU level, Croatia's experience in these activities is also analysed.

Keywords: Member States, European Union, Cohesion Policy, social dialogue, multilevel management.

TIME AND SPACE: ANALYSIS OF EDUCATION POLICY ON MANAGING DIVERSITY IN HONG KONG

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Abstract

Globalization has created new specialties and new modes of statecraft. With globalization there have been increasing similarities between and among the societies of the world. However, regarding China's resumption of the exercise of sovereignty over Hong Kong, the rapid changes of local population carry great challenges to the Hong Kong education system. The article concerns the displacement of signifier "managing diversity" along different geopolitical scales. While units of comparative studies conceptualize in international language, we find that meaning of concepts translated and interpreted in different languages need to be revisited in the historical and cultural context. The article will examine the meaning of "diversity" in Hong Kong context first, and from the special time and spatial dimensions, it will also explore how this term carries implications for policy in practice.

Keywords: Globalization, time, space, education policy, diversity.

POSSIBILITIES OF EU FUNDS IN SOCIAL DIALOGUE DEVELOPMENT: CASE STUDY OF CROATIA

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Abstract

Social dialogue is the cornerstone of European social policy and helps create decent working conditions for all workers and workers, improving work legislation and developing social partnership as a tool to

achieve all common goals such as job creation, improved living standards and economic growth. Bipartite social dialogue is a dialogue directly between social partners (appropriate level of associations of employers and trade unions) as well as negotiations held within its framework. It needs to be emphasized that in Croatia, as a new democracy with relatively short tradition of social dialogue, social dialogue is not only collective bargaining but it also comprises dialogue and negotiations. Although Croatian legislation guarantees protection of workers' rights, in practice, however, many of them are violated on a daily basis. The research is also focused on the analysis of the EU funds available to finance projects in the area of social dialogue development. The research was conducted in the form of a survey to analyze employee satisfaction with the public sector on their rights and work obligations. The aim of the research is to improve the quality of social dialogue through the development and strengthening of administrative and professional capacities of social partners at international, national, regional, local and sectoral level.

Keywords: *EU funds, social dialogue, worker's rights, social partners.*

SCHOOL CULTURE, AS AN ORGANISATIONAL CULTURE: THE VALUE ASPECT

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Abstract

Organisational culture is a complex, multi - dimensional phenomenon, which recently is widely analysed and discussed by many researchers. This paper aims at analysis of only one aspect of organisational culture of a contemporary school, the values. Today politicians vision Lithuanian school as a learning organisation. It is obvious that it is in the school, where value formation and education of future members of society begin, where actually the axis of the future society is formed. In this research the value system of the school, as learning organisation, is understood as a pluralistic whole, which on the one hand, allows the development and co-existence of contradicting and competing values. On the other hand, the value aspect is an important variable that influences the behaviour and performance of people in the organisation. Common values shared by members of the same organisational culture lead to successful and effectively working school development. The purpose of a multiple case study was to explore social factors of school organisational culture and a value system of investigated school organisational culture, measuring teacher and student attitudes towards it. The main methodological approach: organisation culture is a pluralistic entirety that allows for existence of even contradictory or competing with each other values. This is an open whole, which encourages growth, education and improvement. The methods of the research: Theoretical: analysis and interpretation of scientific sources. Attempts are made to reveal the concept of organisation culture, to characterise school culture, to overview features of school as an organisation; Empirical: questionnaire survey of teachers and learners.

Keywords: *School culture, fundamental values, shared values.*

SCHOOL PRINCIPALS AS ENTREPRENEURIAL LEADERS EMPOWERING PARENTS OF MARGINALIZED POPULATIONS

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Abstract

This study explores principals in one school over eighteen years who empowered the parents of their students, a population of socially and economically marginalized people. The school serves the children of undocumented work migrants in Israel from third world countries, and asylum seekers and refugees coming from war-stricken countries. These people are perceived by the law as temporary with no possibility of becoming citizens. However, their children are eligible for education as specified in the Law of Compulsory Education. The principals applied their entrepreneurial skills to organized the parents and empower the parents by mobilizing funding, volunteers, and projects. Principal as entrepreneurs have a vision, engage in innovations, act proactively, that is, they always seize opportunities for innovation, they use networking often to pursue their goals, and take risks by

implementing innovations before assuring the funding. These skills are especially important when leading school in a community that is socially and economically marginalized, as marginalized people face practices of residential and work exclusion, discrimination and oppression from the dominant groups in society, and lack of power and voice. The principals in that school took upon themselves to mobilize the parents, and serve as their voice, sometime by resisting State policies.

This qualitative study used a 'data triangulation' which is the use of different sources to reach the same data set. The different sources include document reading, school observation, interviews with school staff and outside agencies, newspapers, the internet, and protocols of meetings of Israeli parliamentary committees.

It was found that the principals organized the parents by implementing numerous initiatives

(A) principals used mediators.

(B) Principals mobilized the community and the increasing civil society such as third sector anti-deportation organizations to give legal advise to parents. Also, they brought volunteer students of medicine to teach hygiene to students and parents of refugees; they also brought volunteers to teach the language to parents.

(C) Principals provided education for parent: organized field trips for the parents in the country, and provided counseling to parents in raising adolescents in a new culture.

(D) Principals initiated personal development such as forming a choir of parents who sing in school and community events,

(E) Advocacy: acting against the government deportation decision and provided services which the parents could not pay, such as educational and psychological diagnoses to students.

Keywords: *Entrepreneurial leadership, refugee parents, advocacy, triangulation.*

THE IMPACT OF AGENCY IN THE ORGANIZATIONAL-MANAGERIAL AND EDUCATIONAL-DIDACTIC PROCESSES OF SCHOLASTIC INSTITUTIONS

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Abstract

The paper offers a reflection arising from the observations related to the first results of a survey that is being conducted in the first operational part of the PhD project, entitled *Inclusive Policies: the school as a participated community and professional development mediated by the agency*. Through this survey, which is still ongoing, we analyze the perception and attitude of the school manager and the teachers towards documents and tools used in the self-evaluation and self-improvement processes that all scholastic institution are called upon to perform. This survey references to the methods of action of the actors involved in these processes with the purpose to understand: what kind of relationship exists between the *inclusive policies* and the governance of these processes and what is the impact of teachers' ability to deal with this relationship. It also allows us to understand *if* and *how* the remarkable legislative innovations are really integrated, in the operative plan, within the specifics of the single scholastic institutions. In fact, recent laws have introduced the use of tools, within the procedures that underpin the school organization, increasingly articulated and complex that invite to rethink the mode of action of the entire school community. In particular, attention is paid to the relationship between the methods of action adopted and the self-evaluation and self-improvement processes that require co-responsibility and co-participation of all actors in the school context. This perspective shows that development of teacher agency skills is mandatory and oriented towards integration, dynamism and flexibility. Moreover, we note how favoring such mechanisms brings a potential contribute to increase agency itself not only of a single teacher but of the whole school community and to encourage a "culture" of professional, inclusive learning development.

Keywords: *Inclusive policies, middle management, community of practice, agency, professional development.*

COMPARING AND CONTRASTING SUSTAINABILITY PLANS FOR TAKING THEIR CAMPUSES GREEN: A TALE OF TWO INSTITUTIONS

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Abstract

Institutions of higher education have the potential to function as change agents for sustainability. (Stephens, Hernandez, Roman, Graham & Scholz, 2013) According to the *University Leaders for a Sustainable Future* sustainability implies that the critical activities of institutions of higher education are ecologically sound, socially just, and economically viable. These institutions can function as sustainable communities, embodying responsible consumption of food and energy.

From improving recycling efforts to increasing energy efficiency and reducing waste, Hunter College is resolutely committed to sustainable actions and practices on its path towards sustainability. Through the leadership, guidance, and support of the Sustainable CUNY (City University of New York) program, Hunter College has set progressive targets, made notable gains, and pursued innovative solutions all towards the culmination of providing a healthier, cleaner, and more sustainable environment for the Hunter community. Hunter College doubled down on its commitments as the first institution within the CUNY network to promote and cultivate a position solely dedicated to advancing the College's sustainability cause. Renewed emphasis on engagement and equal representation has led the College toward creation of a new 10-Year Sustainability Action Plan led by a committee of members from the student body, faculty, and administration.

In 2010 Clark Atlanta University, an HBCU took an important step toward reversing global warming when the university's president signed the American College and University President's Climate Commitment (ACUPCC) thus joining over 600 institutions in 50 states in the United States to commit to attaining carbon neutrality. Goals were defined and outlined in the institution's Strategic Plan Initiative that set the university on a path for 20% reduction of energy consumption across the campus in five years and a doubling the campus recycling efforts by 2015 thus ensuring that sustainability issues remained an integral part of the CAU experience.

This presentation will compare and contrast the program planning for sustainability at two institutions of higher education, a public urban college in the northeastern United States and a private HBCU (Historically Black College and University) in the southeastern U.S. The presentation will describe the approaches used, progress and anticipated outcomes for each institution. How these institutes take their respective campuses green in terms of their sustainability plans and polices can be instructive for other institutions in their quest for green campuses.

Keywords: *Sustainability, green campuses, institutions of higher education, urban, HBCU.*

ADOLESCENT BULLIED 'S LIFE SATISFACTION: PERSONAL COMPETENCIES AND SCHOOL CLIMATE AS PROTECTIVE FACTORS

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Abstract

Although adolescence has been defined as a stage of vulnerability due to everything that happens at this time, it is also a growth one. Some core personal competencies that act as promoters of positive development and, at the same time, as protective against the risks of this stage have been currently identified: (1) positive sense of self, (2) self-control, (3) decision-making skills, (4) a moral system of belief, and (5) prosocial connectedness. Adolescent development occurs in connection with various contexts in which they are involved, under the influence of multiple factors. Among these, the school becomes a privileged context to encourage practices that promote the positive development and well-being for adolescents. However, it can also be a context for different forms of violence, such as bullying. The principal aim of this study is to analyze: 1) the influence of being bullied, sex and developmental stage (preadolescence/adolescence) over life satisfaction in adolescence; 2) which core personal competencies impact on wellbeing attending to bullying suffering and socio-demographic

characteristics; 3) the role of school climate over life satisfaction, taking into account all previous variables mentioned. In order to get answers, a hierarchical regression analysis was conducted with a sample of 647 Spanish students (53.3% women), from preadolescence (10-12 years old; 28.12%) to middle adolescence (12-16 years old; 71.8%) belonging to diverse socio-economic context (15.3% rural) and school kind (32.1% public). After parental and personal permission to participate voluntarily, students filled several questionnaires under anonymous condition. Results show how life satisfaction in adolescence depends on sex, age and being bullied or not. From all personal competencies assessed, self-esteem, emotional repair skills and social values are the ones that significantly affect well-being, adding explained variance to bullying and sociodemographic variables over life satisfaction. Finally, entering school climate on equation, factors as sex, age, being bullied and social values do not remain as significant predictors of life satisfaction, but self-esteem, emotional repair and school climate itself. These results have important implications for education objectives, methodologies, and school functioning in order to promote adolescent well-being and prevent bullying consequences attending to personal competencies and school climate.

Keywords: *Well-being, bullying, personal competencies, school climate, adolescence.*

EDUCATING FUTURE MANAGERS IN SOCIAL COMPETENCIES, IN SPAIN: HOW FAR HAVE WE GOT, 20 YEARS AFTER THE BOLOGNA DECLARATION?

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Abstract

The original objective of this study was to discover potential improvement areas for teaching social competencies to university undergraduate students. These competencies, often called “soft skills”, have become the most demanded capabilities from graduates by employers worldwide. The wider scope of the project became evident when the initial research problem turned out to be the very definition of “competency” itself.

Different sources offered different approaches to its conceptual definition, its classification into different types and to its operationalization. The authors therefore started with the European Tuning Project, a cornerstone of the Bologna agreement, as their base. Up to 5 different classifications were found in the literature, all of them less than 10 years old, and all of them were analyzed, compared, compiled, fused and finally refined into a set of 9 core Interpersonal (Social) Competencies that were established as a “competency framework”.

A second research problem was how to evaluate performance: What can be considered an “acceptable” level of achievement? Among the existing options, the *Comparator Organizations* system was chosen, where the benchmark would be the globally recognized United States Educational system.

Parting from these premises, the authors conducted an empirical study of a valid sample of 225 students in Spain (original sample size above 400) who were studying in either the Spanish or the United States educational systems. Statistically significant differences were found among their behaviors and self-perceptions around certain interpersonal competencies. The survey sought to measure both the students’ self-perception (13 questions) and their “real behavior”, measured as a declared intention in different hypothetical, “easily-relatable-as-realistic” situations (21 more questions). The reason for choosing this combined methodology, which to the Authors’ knowledge had never been used before, lies in the very concept of competency itself, understood to be: a “dynamic combination of knowledge, understanding, skills and abilities”. This means that, beyond theoretical knowledge and understanding, competencies are dynamic: they must be put into practice, thereby moving beyond the purely cognitive (at the level of descriptive, self-perception statements, intending to measure qualities respondents believe themselves to have) and into the behavioral arena (at the level of behaviors and/or intents, thereby seeking to measure indicators showing that respondents actually put these behaviors into practice).

The differences found between American-system and European-system students led to a series of interesting conclusions about the status quo of teaching and training social competencies to Business students in Europe, and more specifically in Spain.

Keywords: *Management learning, competences, interpersonal, leadership, teamwork.*

A (DE) HUMANISING PEDAGOGY: LET THE TEACHERS SPEAK

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Abstract

Given the nature of South Africa's linguistically and culturally diverse classrooms, it is inevitable that teaching and learning from a social justice perspective be prioritised to address injustices and inequities. Paulo Freire (1970), who laments the state of dehumanization in education argues "the only effective instrument in the process of re-humanization is humanizing pedagogy." In this case study I draw on conversations with teachers in which I explore their understandings of a humanising pedagogy to answer questions 'What does a humanizing pedagogy encompass? What does it require of us in the context of teaching and learning environments?' I conclude that a humanizing pedagogy is crucial for both teacher and student success and critical for the academic and social resilience of students. The work emanates from a project between universities in South Africa and Brazil.

Keywords: Social justice, humanizing pedagogy, education.

STUDENTS' PERCEPTION ON HIGHER EDUCATION CRM POLICY

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Abstract

As a set of practices, customer relationship management (CRM) provides an integrated view of customers which have to ensure that each customer receives the highest level of service, and consequently enhance profitability of business. According to previous studies, different models have been developed in a wide range of settings. In order to achieve better results, many higher education institutions (HEIs) have recognized the importance of adopting CRM strategy. By implementing CRM initiatives, managers in HEIs, intend to increase performance, improve teaching process, and the relationship with their stakeholders. However, the literature on higher education (HE) marketing lacks theoretical models that are adapted to particular context of HE and the nature of their services. Thus, the adoption of CRM by HEIs request the use of appropriate instruments to acquire greater knowledge of the needs of students, in order to implement training courses and to provide services, which are tailored to their characteristics. The purpose of the article is to determine needs for customization of CRM approach in order to increase satisfaction of different students groups. The main goal of this paper is to examine CRM in a HE setting and difference in the level of satisfaction on existing CRM policy of HEIs. In order to achieve defined goal, the survey has been conducted among students in the Republic of Serbia, and 444 valid questionnaires were collected. Research findings reveal students' perceptions on CRM policy, implemented in HEIs. In addition, parametric t test has been used in order to determine the difference in students' perception between male and female students, as well as between students at bachelor and master level of studies. Viewing students as customers, the obtained results should provide guidelines for achieving competitive advantage and improving a faculty's and university's ability to attract, retain and serve its customers. This paper, also, should be used by policy makers, as a recommendation in the HE sector to embrace investment in CRM and to highlight the relevance of implementing CRM strategy in HE setting.

Keywords: Customer relationship management, higher education, students.



POSTERS

TEACHERS AND STUDENTS

VOCATIONAL TEACHERS' MOTIVES FOR IMPROVEMENT THEIR QUALIFICATION

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Abstract

Vocational education and training are widely valued by policy-makers in many countries. Vocational teachers are working in difficult conditions today. Changes continually take place in educational policy and in vocational school's physical and social environment. The teachers who want to be effective in such an environment should not only master their profession, but also seek new knowledge and strive for continuous improvement. Continuous professional development of teachers is essential when addressing the gaps in training that arise through time and change. Usually teachers improve their teaching skills on a voluntary basis, based on their own need to expand their professional development.

This article concerns the continuing professional development of vocational teachers. Data were collected from vocational teachers through quantitative study. 27 vocational schools in Lithuania were involved in the study. Results showed that the needs of teachers' professional development remain unchanged for many years. Such needs are dominated by didactic-pedagogical topics, although in the current situation, vocational education requires the development of communication and information technology competences. The motives for development are caused by technological advancement in the labor market and inner need for improvement.

Keywords: Vocational teachers, qualification, professional development.

MISTAKES OR ERROR PATTERNS? THE IMPORTANCE OF ERROR ANALYSIS FOR TEACHING AND LEARNING MATHEMATICS

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Abstract

Our main purpose in the present study was to examine the type of errors on multiplication and division computation problems in 326 students enrolled in four elementary schools in Northern Portugal. Our secondary purpose was to determine if there was a difference in the number of errors across age and whether an association exists between number knowledge and multiplication and division computation problems with and without decimals. We evaluated students' written responses by conducting an error analysis using a researcher-developed coding system. Results indicated that the most frequent error types were: miscalculation for multiplication and unanswered questions for division. Furthermore, older students made more miscalculation and no attempt errors on multiplication problems compared to younger students. We also identified a correlation between number knowledge and error types on multiplication and division computation problems. Implications for identification and understanding of error patterns and for remediation of math difficulties are discussed.

Keywords: Multiplication, division, error analysis, assessment, math, teaching.

THE EMPLOYABILITY OF UNDERGRADUATES IN TAIWAN: FROM THE VIEW POINT OF ENTERPRISES AND THEMSELVES

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Abstract

97.70% of companies in Taiwan are SMEs. Most of these SMEs have an experience of recruitment on new employees just graduated from universities. Unfortunately, most companies often feel that there exists a gap between school's supply and company's need for competencies. Therefore, the purpose of this study is to gain an insight into companies' views on the employability of undergraduates and to examine the employability they had by themselves. This study randomly selected 152 employers and 117 employees from 735 SMEs companies in 2018. According to the statistical analysis and discussion, the conclusions and recommendations drawn are as follows: 1. In view of companies' views on employability, employees' "general knowledge" is given greater importance, but graduates focus on "professional skills"; 2. Among the 45 employability items, companies attach the greatest importance to "working under pressure", but graduates focus on "team work"; 3. Top managers attach greater importance to "general knowledge" compared to middle managers; 4. Compared to other countries, the top ten employability items given importance are practically the same, but Taiwan gives special emphasis to learning ability.

Keywords: Internship, employability, small and medium-size enterprises (SMEs), undergraduate, cooperative education.

A COMPARATIVE STUDY OF UNIVERSITY MISSION STATEMENTS BETWEEN CHINA AND THE USA

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Abstract

Most of the famous universities in the world have their own mission statements. According to Dinçer (2004), mission is a long-term goal, a shared value and belief, is unique to the organization and special, and is about quality not quantity. A literature review shows the number of studies on the university mission statement in China was limited. With the core search terms of "mission statement" and "university", only 842 articles could be found in CNKI from year 2005 to 2018. In this study, we accessed top 50 universities from both countries' university rankings. Based on a comparative study of those universities' mission statements, we aim to find out what the frequency words and phrases were used among the mission statements of universities in China and the US, and what are the similarities and differences between them. Findings of the study showed that the mission statements have similar but also different parts between these two countries. In conclusion, the mission statements of most universities in US have gone through changes with the social and economic development, while the Chinese data shows that most of its University mission statements are featured by an ambition and anxious attempt to become a world-class university. We found that mission statements of universities in China mostly emphasized the ethic part which may be affected by the traditional Chinese culture-Ethic Culture. At the same time, the most frequently mentioned construct in the mission statements among universities in America are "faith", "truth", "life", etc., which we believed is deeply influenced by the traditional American culture-Scientific culture.

Keywords: Mission statement, university, comparative study.

MOTIVATIONS AND JOB REPRESENTATIONS OF PROSPECTIVE PHYSICAL EDUCATION TEACHERS STARTING THEIR VOCATIONAL TRAINING

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Abstract

The teaching career-choice can be mainly explained by various intrinsic motivations (Berger & D'Ascoli, 2011) but also by a high sense of personal efficiency (Watt & Richardson, 2007). In the case of physical education teaching, the choice is often made by students who previously had a personal affinity for a sport, for which they imagine professional developments (Carlier et al., 2003). Men' choice seems, however, to be more focused on the sports skills to be achieved (Roux-Perez, 2004).

This paper summarizes the results of an exploratory research based on a questionnaire. Our main objective was to analyze the motivations, the personal efficiency and the job representations held by physical education students at the beginning of their vocational training. In order to answer our research questions, 254 subjects (174 men and 80 women), studying in two institutions of higher education, were surveyed and a descriptive cross-sectional analysis was then conducted.

Our results allow us to conclude that, broadly speaking and regardless of gender, physical education students are mainly motivated by intrinsic factors. Through their future profession, they search for a personal achievement and an improvement of their knowledge. They generally have a high sense of personal efficiency although women sometimes feel less “able” than men to teach physical education at the beginning of their training. Finally, the students agree on the qualities needed to the physical education teacher and they often hold their job representations close to that of an “educator” and “animator”.

Keywords: *Physical Education, vocational training, motivation, representations, personal efficiency.*

THE DEVELOPMENT OF STATISTICAL LITERACY ASSESSMENT TOOL FOR SENIOR STUDENTS IN ELEMENTARY SCHOOLS

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Abstract

The most critical capabilities of the twenty-first century are: learning and innovation ability, information, media and technology literacy, work and life skills. Key competencies in information literacy included data interpretation and the prediction of possibility, which has a critical impact for the decision of problem solving. However, analysis, interpretation of data, prediction and judgment are statistical literacy. To cultivate the ability of data analysis, interpretation, and the prediction and judgment of event probably occurring is the prior knowledge of statistical literacy in elementary school. Therefore, this study used data and chance as item content to compile a set of crossing grade assessment with reliability and validity. The assessment and its parallel norm tests suit to evaluate the students' statistical literacy development in the fifth and sixth grade.

The research results are as follows: 1. This study applied the Rasch model to explore the validity of the “Statistical literacy assessment tool”. The results found that most of the items were goodness of fit.

2. This study, by concurrent estimating the difficulty of all the items and the ability of the students, showed that the ability of the students of different grades was significantly different, and the higher the grade, the higher the ability of the students.

3. This research is the parallel design of the test items. It can be used as a longitudinal study assessment tool to explore the statistical literacy of students in the fifth and sixth grades, and can reduce the threat of validity for repeating the test.

Keywords: *Statistical literacy, assessment tool, elementary school.*

UNIVERSITY OF THE THIRD AGE - UNIVERSITY STUDIES DON'T HAVE TO BE ONLY FOR THE YOUNG

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Abstract

The presented study focuses its attention on one of the important forms of lifelong learning, represented by the University of the Third Age, whose primary mission is to open up university resources to acquire knowledge, and skills for people at a post-productive age. The aim of the offered programs is to provide senior citizens with the opportunity to competently and at the university level to get systematically acquainted with the latest knowledge in science, history, politics, culture etc., i.e. to present a specific program of lifelong learning that would be interest-based. Students can thus broaden and enrich their knowledge with new skills, impressions, and experiences. The experience gained shows that the motivation to study at this later age is not only the joy of learning, but also the desire to maintain some mental freshness with a reflection in the increase of self-confidence based on their own active and creative approach to life, because older age may not be just an empty and lonely, but a full-fledged life stage. The objective of the study is not only to present the specifics of the University of the Third Age in Czech higher education, but also to present the approach of its students (University of the Third Age at Tomas Bata University in Zlin) to the offer of study programs, the structure of the studies, motivational aspects, etc., on the basis of a quantitative research in continuity with the resulting qualitative research values study, and at the same time to show one of the possibilities to make the presented form of education more effective.

Keywords: *University education, lifelong learning, university of the third age, older age.*

READING COMPETENCY AND METACOGNITIVE KNOWLEDGE IN PRIMARY SCHOOL CHILDREN: AN EXPLORATIVE SURVEY

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Abstract

Reading comprehension is a process of interaction between the characteristics of the text, the reader and the reading context. In a reader, numerous cognitive processes interactively contribute to comprehension. It is recognized as an important skill, is the basis of the more general study skills, on which depends largely, the educational and academic future of each student. Since learning from longer texts causes great difficulties for many students summarizing is one of the key strategies for good reading comprehension. Summarizing is one of the reading strategies that enables students to more deeply understand the text and it is an indicator of understanding at the same time. Based on these considerations, the ability to synthesise was evaluated in a group of pupils, aged 8 to 9 years, with typical development. Furthermore, the comprehension skills of the text were measured, with reference to the ability of semantic and lexical inference, to vocabulary skills and to metacognitive skills, in order to identify the relations between summarizing and students' general reading competency and metacognitive knowledge about reading.

Keywords: *Text comprehension, primary school, summarizing, metacognitive knowledge.*

DOES IT ADD UP? PROFESSIONAL DEVELOPMENT FOR ELEMENTARY MATH TEACHERS

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Abstract

A two-year, quasi-experimental design research study evaluated the impact of professional development on teachers' knowledge/beliefs and behaviors related to mathematics instruction in elementary settings. 44 teachers (22 in control group and 22 in treatment group) completed the *Teacher Knowledge Assessment System (TKAS)*, an online system for administering the Learning Mathematics for Teaching

(LMT) assessment that measures teachers' basic mathematical knowledge and teachers' pedagogical content knowledge in mathematics (Hill, Schilling, & Ball, 2004; Phelps, 2011). Teachers in the treatment condition showed significantly greater improvement in their knowledge of mathematics than did those in the control group. The treatment group also showed significantly more growth on LMT/TKAS test than did the control group. Findings from the second-year evaluation of changes in teachers' knowledge and beliefs about elementary mathematics instruction show that the professional development did improve teacher mathematical knowledge and beliefs relevant to improving mathematics instruction.

Keywords: *Professional development, teachers, mathematics instruction, elementary education.*

STRATEGIES USED BY PHYSICAL EDUCATION TEACHERS TO ENHANCE PROFESSIONAL WELL-BEING

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Abstract

Disengagement from the teaching profession is a contemporary scourge among Canadian teachers. Quebec province is experimenting the same problematic situation. Diverse impacts are noticeable, associated to public costs, professional wearout, exhaustion and burnout. This research invites to an ideological and scientific shift in order to shed light on teachers' professional well-being. Positive psychology is used as theoretical framework to address the phenomenon, and better understand "What strategies do teachers use to create, maintain or restore a state of well-being?". To this end, the research objective is to draw a portrait of the different strategies used by teachers in order to enhance well-being. As a first stage of the project, the research protocol is aimed at teachers in physical education and health, since they are now recognized as leaders, models and promoters in healthy lifestyles in schools and communities. At the methodological level, we have undertaken five focus groups with 37 teachers, representing seven different regions of Quebec. The results will allow us to propose two avenues of strategies used by PE teachers in relation with Self and with Others. It is in this unprecedented perspective that we aspire to value the profession and the teachers, to favor the pursuit of professional careers and the motivation of teachers, and consequently to promote the educational success of pupils.

Keywords: *Strategies, professional well-being, teacher, positive psychology.*

DIVING INTO MINORITY STRESS THEORY WITHIN THE LGBTQ+ COMMUNITY

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Abstract

The LGBTQ+ (Lesbian, Gay, Bisexual, Transgender, Queer) community is an evolving population with a variety of identities that need to be understood by the heteronormative society. The first step for understanding this community is for educators to grasp current terminology and concepts. Moreover, the heteronormative society has impacted individuals in the LGBTQ+ society due to socially constructed ideals of identity. Specifically, the intersection of race, gender, and religion in the LGBTQ+ community relating to sexual violence and the like. The purpose of this presentation is to convey the need for sex education that includes the LGBTQ+ community, sexual orientation, gender identities, and gender expression. A second purpose is to investigate the impact on individuals of the LGBTQ+ populations based on the Minority Stress Theory. Minority Stress Theory breaks down the amount of stress a person experiences due their minority status using the minority stress model. As well as, present a call for action for educators at all levels. It is important to deliver and to have professional development centered around Safe Zone Trainings, which is a training the educates on the identities within LGBTQ+ communities and how as a society we can be better allies. Lastly, synthesize information about the LGBTQ+ individual's experiences, future directions and research that needs to be completed.

Keywords: *Heteronormative, minority stress theory, safe zone, LGBTQ+, sex education.*

PROJECTS AND TRENDS

THE PERCEPTION OF SCHOOL STAFF AND PARENTS IN REGARD TO THE “ENFANT NATURE” APPROACH IN A QUEBEC PRESCHOOL

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Abstract

Despite the recognized benefits of outdoor free play on children's physical and psychological well-being, there is a marked decrease of the time spent in these activities. Many factors could explain this, notably early schooling, increased time spent in indoor sedentary activities and the rise of adults' supervision and concerns related to children's safety (Strife & Downey, 2009). The *Enfant Nature* (EN) approach aims to counteract the “nature deficit disorder” (Louv, 2005) with an experiential outdoor education program. It also aims to foster overall children's development while promoting a healthy and active lifestyle. Over the course of a year, semi-structured interviews were conducted to explore the perceptions of school staff (n=2) and parents (n=8) of 4-year-olds in a preschool class engaged in EN approach. The experimental variables were perceptions related to the EN approach, the potential risk elements and the effects on the overall child's development. Our findings suggest that overall the participants demonstrated a high level of enthusiasm for EN and discovered a new stimulating way to learn and teach. They quickly concluded that the level of risk in a natural environment was similar to the school. They also reported that EN had been beneficial for children's cognitive, physical and social-emotional development, particularly for their self-confidence, general knowledge, problem solving, socialization, physical activity level and improvements of motor skills. The positive perceptions of EN and the recognition of its relevance for outdoor free play in learning allows us to be optimistic about the sustainability of this approach.

Keywords: *Early childhood, outdoor learning, perception, school staff, parents.*

DEVELOPMENT OF LEARNING ACTIVITY STATUS RECORDING SYSTEM USING THE INTERNET OF THINGS

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Abstract

In countries with birth rates that are declining significantly such as Japan, integration and abolition of schools have recently been attempted over a wide area to maintain a standard school scale from an educational point of view. Therefore, it has become difficult to carry out educational activities across different schools with the full cooperation of teachers. The task of educating must be performed without disparity, regardless of area, by complementing teachers' educational knowledge and skills. One solution is to realize an advanced education support method by promoting distance education. The aim of this study is to develop a system to record learning activity status to support classes from a distance using the Internet and the Internet of Things (IoT). The educational support system consists of a video conference system, online storage service, ‘learning activity status recording system (LRS)’, and teaching materials with IoT. This paper introduces LRS and describes how to transmit state transition information from a wheel mobile robot as a teaching material with IoT to LRS. From the results of surveys on the developed educational support system for high school teachers, the usefulness of the system was clarified.

Keywords: *Distance education, learning activity, robot, IoT.*

FORMATIVE ASSESSMENT OF GLOBAL EDUCATION -JAPANESE HIGH SCHOOL STUDENTS' CONCEPTIONS OF A GLOBAL LEADER-

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Abstract

The purpose of this poster presentation is to investigate the characteristics of Japanese high school students' conceptions of a "global leader". In an increasingly globalized world, it is critical to strengthen the development of capabilities for cultivating human resources for global operation activities. For this purpose, in 2014, a new global education project called Super Global High School (SGH) was initiated by the Japan's Ministry of Education, aiming at cultivating global leaders at the secondary education level. In order to allow students to perform globally in the future, students are to learn high levels of education, communication skills and imagination as well as about concerns such as various social problems. These certified schools are expected to design a curriculum with a profile of their ideal leader in addition to setting specific research topics during the designated period (five years, concluding in March 2019). In order to investigate students' conceptions and awareness caused by SGH learning experiences, a focus group discussion (FGD), one of the qualitative techniques for data collection, was conducted. FGD also functioned as formative assessment, since the students were able to obtain reflection and feedback on their own learning, promoting meta-cognition skills. In the poster, I will make a presentation on the students' images of a global leaders.

Keywords: *Japanese high school students, super global high school (SGH), global leaders, global education, formative assessment.*

PREPARATORY STUDY OF 'LOVE FOR ONE'S HOME' EDUCATION THROUGH LEARNING TRADITIONAL COLOR NAMES: KNOWLEDGE OF THE TRADITIONAL COLOR ENHANCES ITS ATTRACTIVENESS

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Abstract

As a preparatory step of our research project for 'love for one's home' education through learning traditional colors, an experiment was conducted to examine the effect of attaining knowledge of a color on its attractiveness. A hundred and twenty-two university students answered the degree of affinity of six Japanese traditional colors twice with an interval of one hour, first without any information and second with the color name and a short text explaining its origin and the cultural background. Results showed the degree of affinity rose from the first to the second evaluation for most colors, supporting our hypothesis that people would appreciate the value of traditional colors when their knowledge about these colors was deepened. The appropriateness of the traditional colors as learning materials for 'love for one's home' education, a part of moral education that is recently emphasized by Japanese government, was discussed. In addition, the present findings indicated the importance of the additional information that should be given to learners along with the traditional colors in order to maximize educational efficiency.

Keywords: *Knowledge of traditional colors, 'love for one's home' education, traditional color names.*

TESI PROJECT – NEEDS ANALYSIS AND NEW SOFTWARE FOR PEOPLE WITH COMMUNICATION DEFICIENCIES

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Abstract

TESI project focuses on social integration of peoples with verbal communication disorders that are at risk of social isolation. Taking into account the diversity of the verbal disorders' spectrum (including autism, dyslexia and intellectual disabilities), the project aims to develop a basic training software system for all care and professionals working with people with verbal disabilities, independently of their area of knowledge. The present work focuses first on the social needs of children and young people from the target groups. Second, based on the needs analysis, we designed a TESI Workflow Model, using a friendly structure with instructions and images data base which can be adapted to each user. The mobile application was installed on mobile devices (phones and tablets) and the tests in triads of users-parents-educators are in progress.

Keywords: *Social inclusion, research project, communication disorder, new software.*

INCLUSIVE EDUCATION OF SEN CHILDREN IN NURSERY: ANXIETY AND SELF-EFFICACY OF CHILDCARE PROFESSIONALS

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Abstract

The will to recognize and to take into account the needs and the skills of Special Education Need children in order to give them perspectives of an inclusive education cursus is already possible in nurseries. Inclusive education of such babies can be enriching for everyone; but it can also become a source of stress and anxiety for the nursery professionals. It challenges all their working procedures, the usual standards and reference marks but also the perceptions and conceptions they acquired over time about children care. So they have to adjust the way they work with children and accept to be more flexible. (Bazier & Mercier, 2009; Béclin & De Pauw, 2014; Camus & Rogier, 2012; Garcia, 2014; Hendrix, 2013). This research focuses on workers of two public nurseries who welcome Special Education Need babies in the French speaking part of Belgium. We met eleven nursery nurses, a director and the parents of two SEN children. We used semi directive interviews with each of them. We also used three additional tools with the nursery nurses: the Spielberger's State-Trait Anxiety Inventory (STAI-Y) (1990 trad), the Follenfant and Meyer's working self-efficacy scale (2003) and the drawing of a nursery typical day. Our results show that the type of disability influences the workers conceptions and practice. Investing inclusive education is not so easy for the workers. Various factors influence their feelings and could be approached through specific actions in order to reduce their anxiety (anticipation of the child's reception conditions, better communication between parents and workers, specific training programs, professional support and assistance). Choosing inclusive education must always be carefully and properly thought and care must be taken to constantly improve the working procedures.

Keywords: *SEN children, municipal nursery, professional childcare, anxiety, work self-efficacy.*

COGNITIVE SCIENCES FOR ACADEMIC SUCCESS OF MIDDLE SCHOOL STUDENTS

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Abstract

Territorial vulnerabilities subdue children at risk of difficulties at school in the Normandy region. We examined benefits of a personalized accompaniment based on the cognitive sciences on academic success of middle school students. We recruited middle school 6th graders students in Normandy. The

experimental college included 52 students who benefited from pedagogical program based on cognitive sciences, was compared to the control college included 48 students who received classic pedagogical program of methodology. All students were interviewed before and after one year of teaching. We used the *Children Memory Scale* (Cohen, 2001) to assess students' attention and national tests to assess academic performance in reading comprehension and numeracy. Students were assigned a global score for each test. We conducted repeated-measures analysis of variance for each global score. We observed significant interaction between Group (experimental vs. control) and Test (Pre- vs. Post-test) on attention and on numeracy global score considering age as covariable in analysis. The results showed that the pedagogical program based on cognitive sciences significantly improves students' attention and enhances performances improvement of 6th graders in numeracy after one year of implementation compared to a classic pedagogical program. Our proposed pedagogical program seems to be one of the possible levers to promote the success of all middle school students while promoting a scientific approach to evaluating educational practices.

Keywords: *Cognitive science, academic success, learning, neuroeducation.*

THE IMPACT OF THE ERASMUS+ PROGRAM ON THE INTERNATIONALIZATION OF CROATIAN VITICULTURE AND ENOLOGY ON THE EXAMPLE OF THE POLYTECHNIC IN POŽEGA

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Abstract

The Polytechnic in Požega was founded in 1998. with the one of primary aim for improving winegrowing, enology and fruit production in Slavonia (Croatia). Taking into account the history and the relatively young independence of the Croatia, one of the goals of the establishment of the Polytechnic in Požega is to create an international recognition of Croatia's viticulture and enology. Nine years ago the Polytechnic received the first ERASMUS charter, which is also the first international institution project. The paper presents the importance of ERASMUS + mobility program on education and development of students social skills, teacher training and international recognition in the example of cooperation between the Polytechnic in Požega and the equivalent French wine schools. The study includes data collected from the system of ERASMUS+ program at the Polytechnic in Požega a survey of current students on professional study Viticulture – enology – pomology, students and teachers who participated in the exchange with French schools. After data processing, the positive impact of participation in the mobility program is reflected in several aspects. Better communication in a foreign language, two-way transfer of new and traditional technologies in wine and grape production between Croatian and France, more intensive participation in international wine events and professional associations, as well as dispersion of the international association of the Polytechnic in Požega with the mediation of French partner institutions. The presented data show indisputable international recognition Polytechnic in Požega in areas of viticulture and enology and therefore Croatia itself.

Keywords: *ERASMUS+, viticulture and enology, Croatia.*

CREATING CIVIC-MINDED GRADUATES THROUGH COMMUNITY ENGAGEMENT

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Abstract

The purpose is to present community engagement projects embedded in courses guided by Civic-Minded Graduate (CMG) model. The CMG model guides community projects that engage students. A civic-minded graduate (CMG) has completed a course of study and has the capacity and desire to work with others to achieve the common good (Bringle & Steinberg, 2010). Using the CMG dimensions of identity, educational experiences, and civic experiences (Steinberg, Hatcher, & Bringle, 2011; Steinberg & Norris, 2011), examples of community engagement projects will highlight each dimension. Identity

dimension example will include an active listening course with campus community as a partner. Educational experience dimension will include student-created informal education programming at a zoo and student interviews with older adult residents. Civic experience dimension will include a student-designed program evaluation for an adoption agency and student support of a music and memory program for older adults with dementia. Impact of students' work on the community and student's sense of civic mindedness will be reported. Implications for using a CMG model for community engagement projects to enhance student learning and strengthen community will be shared.

Keywords: *Civic-minded graduates, community engagement, active teaching pedagogies.*

DESIGN YOUR OWN LAB EXPERIMENTS: PROJECT-BASED LEARNING APPROACH TO TEACHING CHEMICAL PRINCIPLES OF ENGINEERING

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Abstract

This study introduces the substitution of traditional laboratory practicals related to acid-base titrations and reduction-oxidation reactions carried out to date (where students only have to repeat the instructions provided by the teacher in a manual or script) by new ones where students are responsible for planning and conducting a small research project within the framework established by the teaching staff. Thus, each group of students develops an experimental design regarding topics such as, fabrication of an alcoholmeter, determination of the oxidative capacity of household cleaners or preparation of acid-base indicators based on natural products.

The promise of finding a real solution for a daily challenge becomes the motivation for learning. Therefore, the aim of the proposed methodology is focused in achieving greater involvement of students, as well as effective knowledge acquisition. Similarly, it is intended to promote students' initiative and expand their creativity.

Keywords: *Active learning pedagogy, chemical education, laboratory experiments, problem-based learning.*

THE EFFECT OF REMEDIAL INSTRUCTION USING ADAPTIVE-LEARNING PLATFORM ON MATHEMATICAL ACHIEVEMENTS OF SEVENTH GRADERS

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Abstract

This study aimed to examine the effect of remedial instruction using adaptive-learning platform on mathematical achievements in the mixed operations with integers unit of seventh grade math. The system used in this study was developed for grade 1 to 9 math learning in Taiwan based on the knowledge structure theory. A quasi-experimental design was adopted to evaluate the effectiveness of the system. The participants were 141 seventh graders from three junior high schools in Taichung city. The experimental and control group included 76 and 65 students respectively. The adaptive-learning platform was used for the experimental group to receive the computerized adaptive remedial instruction based on individual diagnosis report, and the control group received the traditional remedial instruction with the lecture given by their teacher based on the testing report of the whole class. The result showed that the performance of experimental group was significantly better than that of control group. Moreover, most students (more than 70%) in the experimental group demonstrated positive attitude to the adaptive-learning platform.

Keywords: *Adaptive learning, mixed operations with integers, individual diagnosis report, remedial math instruction.*

REFLECTIVE TEACHING AND LEARNING STRATEGIES AS AN OPPORTUNITY FOR STUDENTS' EXPERIENCE-BASED DEVELOPMENT

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Abstract

Reflective teaching and learning opens up possibilities for a student to act independently analyzing his / her experience and learning skills, relating theoretical and practical knowledge. Reflection promotes deeper learning, involving deliberate thinking and analysis of what one has done (or is doing), this way developing professionals as lifelong learners. Reflective teaching and learning strategies and models can be successfully integrated into studies, organizing student-centred studies at the higher education institution. Reflective teaching and learning as a continuous educational process at the individual and collective levels is a consistent and cyclic process. Reflection on experience integrated into teaching and learning processes at the higher education institution enables to better realize one's approach to learning and develops metacognitive abilities.

Research focus is the conceptual relationship between reflective learning models and the of higher education. Research sample: criterion-based selection of scientific literature sources. The research method employed was the review of literature based on research or conceptual evidence and published as article, monograph, PhD dissertation or research report. A literature review is an account of what has been published on a topic by accredited scholars and researchers.

The comparative analysis of different reflection models and reflection processes was performed and the following three main repeating stages were identified: the first stage – emergence of unpleasant feelings; the second stage is critical and constructive analysis of a problem; the third stage – development of a new viewpoint to a situation. Integration of schemes of models into the organization of students' – prospective special education teachers' – learning at the higher education institution induces students' reflective learning as well as strengthens interrelation of learning experience and reflective activity, which forms by paying enough time for reflection in the learning activity.

Keywords: *Student, higher education, reflective teaching and learning, experience-based, development.*

EDUCATING FOR GEOETHICS: RAISING STUDENTS' AWARENESS AND PUBLIC ENGAGEMENT

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Abstract

Several authors argue that Western thought and modern science look at nature as an offering to Man; accordingly, throughout the ages, human beings made use of natural resources without worrying about the impacts of their actions on Earth system. Conversely, Eastern thought asserts that people are one with nature; people are perceived as an integral part of nature, harmoniously interacting with it and respecting bio and geodiversity. In both cases, though for different reasons, the emergence of Geoethics proves to be imperative. According to the International Association for Promoting Geoethics, the discipline of Geoethics studies and reflects upon the values that underpin appropriate human practices, whenever human activities interact with the Earth systems. In view of this, the GOAL Erasmus+ project explores the emerging territory of Geoethics attempting to inter-relate formal knowledge with good and sustainable field practices. Members of different partner countries bring expertise in overlapping interdisciplinary areas, thus contributing to develop a relevant Geoethics syllabus for Higher Education and to offer suggestions of educational resources that promote students' awareness and public engagement. The ultimate purpose of GOAL implies fostering improved science education for all citizens, in such a way that it ambitions to have a huge impact in citizen science. It is expected (or at least hoped) that in the medium and long-term, at least some of the activities may integrate the daily routine of some civil institutions. Moreover, the on-going process of public awareness will guarantee that the impact of project lasts far beyond the funding period.

Keywords: *Educational project, geoethics, global science literacy, public awareness, teaching.*

GENERATION Z: DECISION-MAKING PROCESS OF CAREER CHOICE

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Abstract

Purpose: Current adolescents (the Generation Z) are a generation who decides whether they will continue to study at the university after graduating from high schools and which university they will choose. This decision process carries long-lasting consequences for personality as well as for society. It influences their life satisfaction, the realization of potential in the future and social acceptance. Both explicit and implicit factors are involved in the decision-making process of Generation Z.

Key points: The aim of study is to reveal the key factors in the decision-making process of the Generation Z on the basis of existing theories describing human functioning. These are the basis for explaining career choices and career development. While psychologically oriented career studies emphasize personality predispositions, values or self-concepts, sociological studies are more oriented to prestige, the choice of occupation in terms of socio-economic hierarchy and social structure of society.

Methodology: In this study, theoretical analyses will be used.

Keywords: *Generation Z, Career choice, decision-making process.*

CROSS-CULTURAL EDUCATION FOR INTERNATIONAL STUDENTS WHO INTERACT WITH JAPANESE PEOPLE: PRACTICAL LEARNING USING ROLE-PLAYS

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Abstract

This research aims to propose a style of cross-cultural education that can teach students how to behave and converse in a practical way with Japanese people in social situations by using role-plays. Role-plays were conducted in a Japanese language class for international students in Japan, and the goal of this class was to learn about different cultures based on the AUC-GS (Awareness, Understanding, Coping, General Culture, and Specific Culture) learning model. Specifically, 60 international students from 10 countries and 10 Japanese students who participated as guests were divided into 10 groups and role-played scenes from an “end-of-year party with classmates and the professor.” The Japanese students acted freely, showing international students natural interactions. The international students then repeated the role-plays with advice and feedback from the Japanese students. I analyzed the reactions of the learners before and after the role-plays using a questionnaire survey. Through role-playing, they learned about Japanese hierarchies, rituals associated with drinking, and practical Japanese phrases. Furthermore, their comments and the difference in their scores before and after the role-plays showed that their willingness to interact with Japanese people and their confidence in using the Japanese language increased. In addition, they recognized that facial expressions and attitudes are more important than speaking perfect Japanese. The international students learned about the various values and behaviors by engaging in role-plays and discussion with the Japanese students.

Keywords: *International students in Japan, cross-cultural education, cross-cultural social skills, role-playing.*

INVOLVEMENT OF ATTENTION AND WORKING MEMORY OF CHILDREN WITH ADHD IN SCHOOL-AGE

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Abstract

This investigation analyzes the difficulties in attention and memory of children with Attention Deficit Disorder and Hyperactivity (ADHD) between eight and twelve years old (attending fourth, fifth and sixth grade of primary school) compared with a control group of the same age ($n = 80$), by applying three standardized tests: the test of perception of differences or test face, Children's Color Trails Test (CCTT) and test digit by Wechsler Intelligence Scale. These tests analyze selective attention, sustained attention, alternating attention, short term memory and working memory, respectively. The results show significant differences between the control group (group without ADHD) and ADHD group in all evaluated cognitive processes. In addition, differences in the correlations of these functions in both groups, checking that there may be a close relationship between attention deficit and implementation of other cognitive processes.

Keywords: *Memory, attention, cognitive processes, ADHD, primary education.*

TECHNOLOGICAL CHANGES IN THE WORK OF ACCOUNTANTS AND CHANGES OF EDUCATION OF ACCOUNTING STUDENTS

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Abstract

The first two decades of the 21st century is a period of large changes in IT technology, which translates into a change of accounting professionals work. Instead of a calculator, paper T-accounts, there were changes resulting from the development of IT technology like:

- electronic documents that replaces traditional paper documents,
- electronic signature that replaces the traditional handwritten signature,
- shipment of electronic documents to tax authorities in the form of xml files replacing the transfer of paper copies of accounting documents.

The above changes necessitate a change of education of accounting students, because in addition to teaching the accounting principles and standards themselves, the job technique itself and the modern work environment play an increasingly important role in the accounting professionals work.

The study analyzed the current methods and curriculum of education of accounting students of the Faculty of Management at the University of Gdansk in the context of their relevance to today's accounting work environment. As a result, areas requiring updating were established.

The theoretical considerations were supported by a survey conducted among students of the summer semester 2019/2020 of the specialization in Accounting. The aim of the study was to gather students' opinions on the validity of teaching methods and subject them to evaluation of proposals for future changes in teaching methods.

The study also contains a proposal for necessary changes to adapt the curriculum of accounting students of the Faculty of Management at the University of Gdansk.

Keywords: *Electronic signature, computer accountants books, electronic shipment to the tax office, SAF-T files (Standard Audit File-Tax).*

AN EDUCATION FOR ALL: ARTS AND HUMANITIES FACULTY MEMBERS WHO DEVELOP AN INCLUSIVE PEDAGOGY

**Ruth Cabeza-Ruiz¹, Yolanda Spinola-Elias¹, Almudena Cotán-Fernández², Rafael Carballo³,
Rosario López-Gavira¹, & Inmaculada Orozco¹**

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Abstract

Inclusive pedagogy is an educational approach that has been developed in the stages of compulsory education. Inclusive pedagogy main objective is to offer an education that achieve the participation of all students taking into account their diversity and individual characteristics. This study presents partial results of a larger research funded by the Spanish Ministry of Economy and Competitiveness entitled "Inclusive Pedagogy at University: Teacher Narratives" (EDU2016-76587-R). The aim of the study was to analyse how faculty, who develop inclusive pedagogy, teaches. A qualitative methodology was used. A semi-structured interview was the instrument designed to gather information from the faculty members. The objective was to know the inclusive strategies that the teaching staff put into practice to attend to the diversity of the students. The study involved 119 faculty members from 10 different Spanish universities. Academic staff was proposed by students with disabilities. All areas of knowledge were represented. Specifically, in this communication we present the results obtained from the study of 24 Arts and Humanities faculty members. The analysis of the data was carried out by means of a structural analysis using a system of categories and codes. Four general categories were used for the analysis: beliefs, knowledge, designs and actions. The MAXQDA12 software was used for data coding. The results describe the keys that the academic staff used to attend the diversity of their students, including students with disabilities. Firstly, it shows how the participants previously planned the subject according to the particular characteristics of their students. Secondly, teaching methods that teachers considered essential for the inclusion of all students are shown. Finally, it is explained how the teachers took into consideration the opinion of the students for an adequate development of the teaching-learning process. In the conclusions section the main findings of the study are taken back and discussed with previous studies

Keywords: *Inclusive pedagogy, faculty, disability, higher education, Arts and Humanities.*

TEACHING AND LEARNING

LIFESTYLE HABITS IN A UNIVERSITY CONTEXT: STUDENTS' POINT OF VIEW

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Abstract

Despite the many physical and psychological health benefits associated with healthy lifestyle habits, some 50% of Canadians fail to adopt an active lifestyle and healthy eating habits (Statistics Canada, 2014). University students are no exception to this tendency, even though the literature acknowledges the benefits of healthy lifestyles for their academic success (Trockel et al., 2000). This research proposes to survey university students in order to learn their needs and interests towards interventions aimed at improving and/or maintaining their healthy lifestyles, with particular emphasis on regular physical activity and a healthy diet. The qualitative research includes three focus groups within the three study cycles (N=22 students, ~7/group). The interview grid was developed around the variables of the ecological *Conceptual Framework* of the Quebec Ministry of Health and Social Services (QMSS, 2012). Data were analyzed using NVivo software. Preliminary findings suggest that students are strongly interested in the development of a tailored intervention to promote physical activity and good nutrition throughout the academic year. They highlight the relevance of a balance between offline (e.g., workshops) and online interventions (e.g., computer tailoring). The relevance of online functionalities, however, would be a determining factor in their willingness to download and use the application. The *Conceptual Framework* of the QMSS serves as a theoretical support for enriching the discussion. The present research falls within the context of health initiatives in the Quebec education network, and the emerging interventions may be exported to other post-secondary institutions concerned with the health and academic success of their students.

Keywords: *Lifestyle habits, healthy, students, university, initiatives.*

GRADUATE STUDENT PERCEPTIONS OF ONLINE LEARNING

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Abstract

This session will summarize research conducted with online students in education programs. The focus of this research was to determine the rationale for students taking courses online and their perspectives on the usefulness of instructional methodologies, which enhance the social presence and student interaction. There are over 6.1 million online learners (Allen & Seaman, 2011). Students have reported that online learning is a solitary experience (Asunda, Calvin, and Johnson, 2014; Rovai, 2007). Faculty at universities who offer online courses will gain an awareness of student motivation for taking online courses, recommended practices in online teaching from the current research literature, and strategies for making online courses more attractive to a variety of students.

Subjects were graduate students in education currently enrolled in online courses in public, private and for-profit universities (n=47). Prior to sending out the survey, a panel of 12 experts, who were familiar with distance educational practices and instruction, established the content validity. The panel was asked to review the questionnaire for readability, as well as clarity and provide suggestions on improving the survey questions and statements.

Participants will gain and understanding of the following:

1. Recommended practices for online instruction
2. Student motivation for enrolling in online courses
3. Barriers encountered by students with online instruction
4. Most and least beneficial aspects of online instruction for students
5. Student perceptions of the role of an instructor in online instruction

Keywords: *Online instruction, graduate education.*

AN ANALYSIS ON THE INTRAINDIVIDUAL DIFFERENCE IN L1 AND L2 UTTERANCES IN THE SAME CONTEXT

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Abstract

A longstanding problem that English education in Japan has been struggling with is that learners cannot develop communication skills in English. Learners have rarely been trained to express their internal concerns subjectively, that is how they think or feel about external things, in English. This study investigated, using twelve university students, how and what they say in English and in Japanese when confronted with a thought-provoking situation. By comparing the data, our hypothesis that they would describe the situation more objectively in English than in Japanese was confirmed. The results were discussed in the context of the problems of current English programs and some pedagogical suggestions were made.

Keywords: *Intraindividual difference, Japanese ESL learners, objective description, subjective expression.*

MATHEMATICAL READINESS ASSESSMENT FOR FIRST-YEAR STUDENTS

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Abstract

Critical thinking, problem-solving skills and general mathematical competency are necessary for many occupations today. While working with first-year students, varying competence and confidence in mathematics is observed. This paper discusses the use of common mathematical diagnostic tests for the evaluation mathematical preparedness of the first-year students. The test was compiled by an international team of mathematicians and organised for the first time in the autumn of 2000 in the cooperating agricultural universities in Latvia, Sweden, Estonia and Lithuania. The test consists of 15 tasks and focuses on fundamental mathematical concepts and helps identify students' mathematical strengths and weaknesses. Various secondary and tertiary education reforms raise new challenges for universities mathematicians. Diagnostic tests provide the possibility to identify tasks that are more problematic for students and also allow to compare the competence of first-year students' mathematics competence between the different universities.

A graphical analysis method and a method of statistical quantitative analysis of the research data were used in the study. The results of the research revealed a connection between the students' mathematical preparedness and ongoing educational reforms. The results of this test also reveal a contradiction between quantity and quality in studies. Measures to improve the learning process of the subject of Mathematics depending on the level of students' ability are offered.

Keywords: *Mathematics, diagnostic test, mathematical preparedness, mathematical competence.*

THE ORCHESTRATION OF INTEGRATED ACTIVITIES OF SCIENCES AND MATHEMATICS IN THE 5TH SCHOOLING GRADE: THE ROLE OF QUESTIONS

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Abstract

The aim of this poster is to analyze the questions of a training teacher and of those their students in a sciences and mathematics integrated environment. The study wants to understand what type of questions will be crucial to mediate the learning in such context. The examined data belong to a research entitled “The enquiry in sciences class of 5th grade students: an approach integrating mathematics”. The methodology used was influenced by: Balance Model (Kiray, 2012) for integrating mathematics and science; the ideas of Myhiil and Dunkin (2005) and Carlsen, Erfjord and Hundeland (2009) about the teachers' questions; and the ideas of Moreira (2012) about student's questions in the classroom.

The results seem to show that the students identify the abiotic factors through analyzing graphs elicited by questions. They also used processes of interpretation and intuition. Although the students had posed few questions, they had opportunity to deal with questions of different types and functions. The types of questions that seem to us to be the most crucial to mediated the learning (Carlsen et al. (2009) are: *asking for argument, problem solving invitation and concluding*. The science textbook, used in the class, didn't take in account the mathematic curriculum. In order to promote science and mathematics learning, it seems important the textbook take in account the mathematics and science curricula according to the year of schooling.

Keywords: *Orchestration, integration, questions, sciences and mathematics, teaching and learning 5th schooling grade.*

PHENOMENON OF ARCHITECTURE AND ITS PEDAGOGICAL IMPLICATIONS / RESEARCH PROBE: PATHS

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Abstract

The research study “Paths” was realized as a workshop in October 2018 at the Department of Art education, Pedagogic Faculty, Charles University, Prague, Czech Republic. This study is part of ongoing outcomes of author' doctoral studies. The subject of the study is the mutual interaction and overlap between architecture, art, and art education, and the common “language” shared by these fields. The main research tool is the collection of students' verbal and artistic statements, which help the researcher to understand the influences and relationships that help to shape young people's attitudes towards the phenomenology of architecture. Its objective is to investigate this phenomenon through artistic creation mediated to students and to explore the possibilities of using the findings of the creative processes in educational situations with university students. The applied methodology is related to the research of artist and designer creation: A/r/tography. Contemporary art education is based on visual literacy and critical thinking skills by integrating contemporary art into the core curriculum. It emphasizes inquiry-based education, a critical understanding of contemporary art practices, problem-solving, examining the relationship between art and relevant cultural and social issues. The development of creativity (creative process, creative (artistic) expression) and cultural heritage (art history, architecture, artistic traditions) are on the main trends of topical researches in art education that currently predominate in the world.

Keywords: *Architecture, creative reflection, experience interpretation, methods in pedagogy, spatial forms.*

HUMAN BEING DEVELOPMENT: RESEARCH PROTOCOL FOR A HOLISTIC AND COMPLEX REVIEW ON THE SOCIAL DIMENSION

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Abstract

The purpose of this article is to lay the foundation for the building blocks of the social development of human beings in a contemporary democratic society; more broadly, it focuses on the research protocol with used to conduct a holistic and complex review on the social dimension of the human being. From a cross-reading of the thoughts of ancient and contemporary authors, a number of structural, conceptual and dynamic elements related to this subject emerged. This article, based on Bronfenbrenner's ecological approach, establishes a first foundation of knowledge synthesis on the social dimension of human beings. *Initial Warnings.* Current knowledge of the requirements of good development and good functioning of human beings allows for the definition of new guidelines to redirect our education systems towards the implementation of education and training programs that allow every human to better know oneself and to realize optimally their potential. We want to put into perspective the knowledge generated by several authors to synthesize their approaches and draw the guidelines for this new orientation that is necessary and more respectful of human development. This article is a proposal for the basis of work on which the experts of different fields mentioned in the text will be able to continue the reflection and co-build this holistic framework with us. More than ever, we believe in the importance of this exercise to redefine humanism and education that truly places human beings in what they are, and is most fundamental and in the optimal conditions for them to succeed.

Keywords: *Human being, development, social dimension, Bronfenbrenner, ecological model.*

TEACHING PROCESS GUIDELINE OF INDUSTRY-ORIENTED OFF-CAMPUS INTERNSHIP CURRICULUM FOR TECHNOLOGICAL UNIVERSITY

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Abstract

The off-campus internship curriculum plan should meet the educational goals and the educational philosophy to demonstrate the learning outcomes of the theoretical and practical skills module courses. The purpose of this study is to develop a teaching process guideline of industry-oriented off-campus internship curriculum for technological university. In order to meet this purpose, three parts are proposed. The first part is before internship. The teaching content includes understanding the industry profile, organization and department functions of the internship company, work norms and professional ethics, standard operating procedures, and student internship content. The second part is in the internship. The teaching content includes effective communication, teamwork, technical problem solving strategies, data collection. The last part is after internship. The teaching content includes internship report on the experience of industry-university cooperation. In each stage, this study proposes the teacher should teach the content, the counselor of the industry mentor, and the student needs to complete the content during internship period.

Keywords: *Teaching process, industry-oriented, off-campus internship curriculum, technical university.*

INTERACTIONS AND TEXT PRODUCTION: BENEFITS FOR BOYS AND GIRLS

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Abstract

Learning to write is challenging for elementary school pupils, particularly boys, who show poorer writing performance than girls (Herbert & Stipek, 2005, MELS, 2012). Offering pupils motivating and meaningful writing activities thus represents a significant challenge for teachers (Colognesi & Lucchini, 2018). Since boys generally enjoy interacting with their peers, why not take advantage of this interest and allow them to write in pairs? When this opportunity is given to them, what kinds of spoken exchanges occur between them? Do these exchanges differ from those of girls? And are the texts produced in pairs of better quality? To date, few studies have compared boys' interactions with those of girls or the impact of these interactions on the quality of the texts produced. The aim of this study was thus to 1) describe the content of the interactions of girls and boys in Grade 6 (11-12 years old) when producing texts in dyads and 2) compare the quality of the texts produced by these pupils according to the writing context (individually and in dyads). Thirty-three (33) dyads participated in this study (N = 66, 35 girls and 31 boys). The pupils planned, wrote and edited/corrected a story individually and then in dyads. Their writing performance (syntax, punctuation, vocabulary, narrative structure, lexical and grammatical spelling) and interactions (number, content) were evaluated and compared. The results are presented and discussed in light of the benefits of collaborative writing activities for boys and girls.

Keywords: Interactions, writing performance, gender, elementary school, collaborative writing activities.

DO I STILL NEED MY BRAIN? EVOLUTION OF NAÏVE MIND-BRAIN CONCEPTIONS FROM CHILDHOOD TO ADULTHOOD

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Abstract

Given that metacognitive knowledge promotes students' academic learning, it seems important to better understand how the mind-brain conceptions change with age. We recruited 34 children aged 5/6 years, 34 children aged 7/8 years, 33 pre-adolescents aged 10/12 years, 30 adolescents aged 14/16 years, and 33 adults aged 21 to 35 years. We used the Mind-Brain Questionnaire (Rossi et al., 2015). Each participant was asked to indicate what a character needs in order to perform different actions by using response cards (brain, mind, hand, heart, eye, mouth). We conducted analyses for four response category 1- Mind and Brain response cards; 2- Brain without Mind response cards; 3- Mind without Brain response cards; 4- Neither Mind nor Brain response cards. The results reveal that participants over 10 years of age had a better understanding of the relationships between the mind and the brain than younger children, particularly when it comes to mental functions (dream and imagine). However, these relationships were not as well defined for basic functions (see and talk) and scholastic functions (read and count). Children aged 5 to 8 did not perceive the implication of the two entities in cognitive functioning and participants from 10 years to adulthood only recognized the role played by the brain. Our results provide further arguments for the development of neuro-educative school programs based on a better self-awareness of learners in order to help develop young people's metacognitive skills and promote a pedagogical approach that facilitates academic learning.

Keywords: Mind-brain conceptions, development, metacognitive skills, neuroeducation.

STEM CAMP: ACTIVE INVOLVEMENT IN RESEARCH AND SCIENCE ENDEAVORS

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Abstract

At almost every step of the STEM education ladder, we see girls walk away. By seventh grade, most girls have lost interest in these fields, and few high school girls plan to pursue STEM in college. Our goal for the camp is to provide encouraging STEM Education experiences to rising eighth grade girls from Wood County and Northwest Ohio by organizing a camp introducing them to emerging areas in STEM and exposing them to the environment of higher education. During this presentation, we will discuss the camp structure, curriculum design, research design and the research findings.

This presentation will present data based on pre- and post-evaluations collected and analyzed based on the learning outcomes for the 2018 Camp. Camp participants responded to daily reflective questions on each class, workshop and field trip and we used this data in planning the curriculum for the next year. Both quantitative and qualitative data were collected. Some of the data suggests that there was a 20% increase in the number of girls indicating an interest in pursuing a career in science after attending the camp. After completing the camp, 100% girls reported their goal was to attend college. Ninety-eight percent of the campers positively rated the opportunities provided by camp to learn about the real world applications of STEM. After successful completion of Tech Trek, we concluded that these girls think about themselves as future scientists, engineers, mathematicians, and computer specialists and the camp experience ignites their interest in STEM.

Keywords: STEM education, mentorships, active learning, partnerships, STEM career ladder.

EXPLORING SHARED BOOK READING STYLES OF CHINESE TEACHERS FROM THE PERSPECTIVE OF ACTIVITY THEORY

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Abstract

Research in shared book reading has revealed that teachers vary in their styles of interacting with children around books, which can affect children's language and literacy development in different ways. While previous studies have identified broad patterns of teacher reading styles, few have defined the term or addressed adequately and systematically how characteristics of children and books help shape these patterns. This study applies activity theory model and conceptualizes teacher reading style as a multidimensional construct inherent in the transactional activity of shared book reading, in which the teacher (as the subject), the children (as the community member), and the book (as the tool) bring their own qualities to condition one other and enact the reading interaction. This conceptualization guides the qualitative inquiry revolving around six preschool teachers from Mainland China in a multiple case study. Data collection includes intensive classroom observation, teacher interview and documentation. Audio-recordings of reading sessions and teacher interviews will be transcribed and coded with qualitative analysis software. A cross-case analysis will be conducted to untangle how teacher reading styles are related to contextual specifics across cases and what learning opportunities for children can be offered through different reading styles. With a fine-grained representation and an in-depth analysis of teacher reading styles, the exploratory study seeks to inform preschool teachers of the possibilities of consciously shifting among reading styles in response to circumstantial requirement, and to provide implications for studies that examine differential effects of teacher reading styles on child development.

Keywords: Shared book reading, teacher reading style, activity theory.

ARTWORK IN ART EDUCATION

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Abstract

The presented research mainly addresses the process of artwork interpretation in art education. Attention is paid to the didactic transformation by which the artwork becomes the subject of education.

This process is explored in the relationship between the students/viewers, the teachers/art educators and the unique artwork itself. The process of artwork interpretation is analysed in a concrete teaching situation in which students are placed at the centre of their learning experiences (the subordination of teaching to learning).

The poster is based on the results of two studies exploring the use of art in art education. In both studies, the crucial question is: What is the space for students' voices, their empirical viewership and their critical thinking in art education?

The research outcomes also reflect the field discourse of art education didactics, especially in relation to functional visual literacy. Visual studies and the theory of art education are the discourses that guide the theoretical framework of the research.

***Keywords:** Art education, interpretation, discourse-based educational models, critical thinking, functional visual literacy.*

OBSERVATIONAL LIFE DRAWING AS A HOLISTIC TEACHING TOOL IN THE TIME OF MEMES / PRE-RESEARCH STUDY

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Abstract

This pre-research study deals with the problem of fundamental relational paradigm of life drawing in contradiction to virtual experience and consumer life style. It looks into the question how to teach drawing in the time of social networks and fake news when the reality has become more and more fictional, without losing the transcendental and cognitive potential of drawing. It inquires how the two-dimensional pictorial culture and related visual symbols and memes influence perception and ability to draw and how the problem is felt by pedagogues and students of drawing themselves.

The core of the study is created by the author's past experience when working as an artist, pedagogue and curator; and from that experience also derives the used practical research method - A/r/tography. The topic is viewed from the perspective of holistic pedagogy, image theories and contemporary art studies and it works with the conception of graphic types by Jaromír Uždil and symbolic systems by Betty Edwards. These principles of art expression also relate to a collection of drawings by dozens of respondents, which is an integral part of the study and the author gained it during several years when she was working as a teacher.

The study is a part of a doctoral research, which deals with qualitative contexts of drawings according to reality and their didactic reflections. The research is performed at the Department of Art Education at the Pedagogic Faculty of the Charles University in Prague.

***Keywords:** Life drawing, art education, teaching tool, art-based research, visual symbols.*

A PBL CASE ON GLYCOGEN AS AN EVALUABLE TASK FOR STUDENTS STUDYING METABOLISM

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Abstract

We are currently involved in an Educative Innovation Project (PIE17-145, funded by the University of Malaga) aimed to improve the teaching practice of Metabolism to undergraduate students. We are designing and developing new metabolism cases of problem-based learning (PBL) applied to different groups of Biochemistry and Biology undergraduate students. In the academic course 2017-18, we implemented a first trial for a PBL case on glycogen and its metabolism that was offered as an optional evaluable task for students of two courses devoted to metabolic regulation, both corresponding to the second year of the Degrees in Biology and Biochemistry.

Metabolism, its regulation and its integration is one of the most complex study subjects for Biochemistry students. In fact, its learning is perceived as a demanding and difficult task by undergraduate science students, and only few of them achieve an integrated and deep learning of the subject. In END2018, we presented a communication describing how PBL can be used as a motivating didactic strategy for the study of fundamental topics in biochemistry. In the present communication to END2019, we will show the impact of a specific PBL case on the performance and final scores of the students enrolled in the afore-mentioned courses.

Keywords: *Problem-based learning, metabolism, biochemistry, higher education, science education.*

THE MEDIATING EFFECT OF PSYCHOLOGICAL EMPOWERMENT BETWEEN RELATIONSHIP SATISFACTION WITH INSTITUTIONS MEMBERS AND COMPETENCE FOR BUILDING EARLY CHILDHOOD EDUCATIONAL COMMUNITY OF EARLY CHILDHOOD TEACHER

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Abstract

The needs for building educational community are gradually growing in Korea and the field of early childhood education are no exception. We focused on the teacher's competence for building early childhood educational community in this study. Then, which factors affect teacher's competence for building early childhood educational community?

The purpose of this study was to examine the mediating effect of psychological empowerment on relationship between relationship satisfaction with institutions members and competence for building early childhood educational community. The subjects of this study were 590 early childhood teachers who lives in Korea and they answered the questionnaire on those three factors. Using this data, correlation analysis and simple regression analysis were carried out. The results were as follows. First, There were a significant positive correlations among relationship satisfaction with other teachers, psychological empowerment and competence for building early childhood educational community. Second, we found that teacher's psychological empowerment partially mediate the effect of relationship satisfaction with members on competence for building early childhood educational community. In other words, there were greater effect on competence for building early childhood educational community when relationship satisfaction with members interacts with psychological empowerment of teacher than there was no interaction. This result shows that the interaction effect of relationship satisfaction with institutions members and psychological empowerment of early childhood teachers is important to

increase competence for building early childhood educational community of teachers. Therefore, we need some efforts to make not only positive organizational culture and climate, but also some plans to increase the teacher's psychological power.

Keywords: *Early childhood educational community, teacher's competence, psychological empowerment, relationship satisfaction with members of kindergarten teachers.*

EVALUATING RELIABILITY AND DISCRIMINATORY CAPABILITY OF BEMA IN TWO SPANISH ENGINEERING DEGREES

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Abstract

In this work, we analyzed the reliability and discriminatory capability of BEMA (Brief Electricity and Magnetism Assessment) for students of Electricity and Physics courses in Engineering Degrees taught at the School of Engineering Design (ETSID) from Universitat Politècnica de València (UPV). BEMA is a 30-item multiple-choice test designed to assess students understanding of basic electricity and magnetism concepts. The questions are mostly qualitative and some of them require simple calculations. The test is useful when combines validity, reliability and discriminatory capability. The validity is usually determined by expert opinions. The BEMA test is valid for the Electricity and Physics courses because the tested concepts are related to the course subject. A reliable test is consistent within itself and across time. Besides, a large fraction of the variance in scores is caused by systematic variation in the population of the test takers. The reliability of an assessment instrument is particularly important when it is going to be used to compare the performance of different groups. In this work, the reliability and discriminatory capacity of BEMA is assessed statistically. From the post-instructional data three parameters are focused on individual test items (item difficulty index, item discrimination index, item point biserial coefficient) and two parameters are focused on the test as a whole (test reliability and test Ferguson's).

Keywords: *BEMA test, reliability, discriminatory capability, Ferguson's.*

LEARNING ABOUT METHODS OR WORKING METHODICALLY

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Abstract

After gaining some years of experiences working and teaching in the field of Product design and development authors are presenting their reflections on the students' performance, the result achieved in the project based course but also their critical thoughts about the problems faced during their work.

In the last 7 years the course was redesigned and developed taking in consideration our own performance and result in training students to build competences in handling and solving design problems but also following the research in the area.

The problem highlighted in this paper is: regardless the well planned course content (including theories about product development process, different techniques and methods to define and solve the problems); neither matters how well the project tasks have been selected; the result from the course depends very much on how the students are taught to think and understand the process they have to apply. To teach them in so called "design thinking" it seems the biggest challenge for the university teachers in this interdisciplinary subject, because it is not only about gaining a knowledge in the subject area and development of skills to manage design problems but it is about achieving better students' performance. It

is also to develop a “designer intelligence” - an ability to perceive or infer information, and to retain it as knowledge to be applied towards adaptive behaviours within an environment or context. (Mackay, 2018) The research question for this paper is- “Is there a way to train students not only “automatically” to apply the methods learned but also to develop a holistic understanding about the product development process, competences and intelligence to work methodically on it?”

Keywords: *Higher education, project based learning, product design and development, development of intellectual capabilities, design intelligence.*

INTRODUCING BIOLOGY CONCEPTS TO STUDENTS IN BELGIUM IN THE CONTEXT OF A MODERN GREEK COURSE

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Abstract

Content and Language Integrated Learning (CLIL) refers to the educational approaches that focus on a subject matter as means to develop linguistic ability and vice versa. In the proposed study, high school students in Belgium will be introduced to neuroscience concepts during a Modern Greek as a Foreign Language course. Subject matter experts have produced a lesson plan that consists of educational activities on the topic of sensation and perception. Prosopagnosia (also known as face blindness) and other terms will be discussed so that students acquire knowledge and insight on the neurology of vision and visual awareness. To this end, a variety of tools will be used that includes talking points cards from London Science Museum, a reference textbook, an animation video from the popular Crash Course science YouTube series and Glogster, an online multimedia poster application. The lesson is designed to include the 4Cs curriculum; (1) the appropriate science content, (2) linguistic activities that delineate the function of language in communication, (3) cognition skills development as in complex science concept comprehension and (4) exposure to the Greek science culture and terminology to reinforce language acquisition. As a result, students will be able to improve all four language skills, namely listening, reading, speaking and writing along with their presentation and communication skills. Importantly, the broader theoretical background and aim of the proposed study is the promotion of language learning and linguistic diversity in secondary education and STEM (Science Technology Engineering Mathematics) literacy and participation.

Keywords: *Content and Language Integrated Learning (CLIL), STREAM (Science Technology Reading Engineering Arts Mathematics) learning, science communication, Modern Greek, secondary education.*

ORGANIZATIONAL ISSUES

THE AGE OF NEW COMMUNICATION – THE SCREENERS PROJECT

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Abstract

The technological revolution which legitimised the everyday use of computers shows that we are increasingly moving from textual cultural expression to visual/hypertextual. Following books, the Internet has become the new data-medium invention involving a new type of literacy, and it still remains relatively under-researched. Aside from art, new media connected with technical advances has the potential to transform the culture of mass society by means of easily available visual data with various purposes and functions. This contraposition of postmodernity and technologism is also significant in analogue artwork because it determines a new approach to working with visual information as well as changed attitudes towards means of expression in art education.

Contemporary life in our globalised society has already been manifested in two ways: everyday 'biological life offline' in the present without devices and 'virtual life online' through screens. The Screeners project is inspired by David Cronenberg's screenplays about our obsession with new technologies, in terms of our desire for something new, and the threat of us becoming dominated by these technologies. In his work, Cronenberg also attempts to depict the transition from humanity to post-humanity up to robotics. Everyday situations contemporarily manifested through frequent use of various screens (smartphones, tablets, TV-screens, computers) might already signify the end of traditional communication. Moreover, mobile phones enable us to switch our minds into another virtual reality within a single moment. A growing number of people are increasingly beginning to find it natural to integrate their 'self' as an additional new virtual identity into their life. My focus is on my students born after the year 2005.

Keywords: *Extended reality, internet, virtual representation, identity, communication.*

THE ROLE OF THE EDUCATION SYSTEM IN SOLVING THE SKILLS MISMATCHES ON THE LABOR MARKET

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Abstract

The good functioning of the labor market depends to a large extent on the matching of skills and qualifications to the demands of employers. Significant and persistent mismatches over time, between training, skills, qualifications required and offered on the market can be costly for employers, workers and society in general. Countries are currently facing challenges such as technological and demographic changes that may contribute to deepening skills mismatch in the future.

The purpose of this study is to analyze the correspondence of qualifications in the labor market through the over-qualification rate and the evolution of the Beveridge curve and to contribute to a better understanding of the role of education and training system in solving the mismatches of qualifications in the labor market. The analyses are conducted in dynamics, over the period 2007-2017, at EU level and in two particular cases, Romania and the UK. The data underlying the "normative" measurement of the over-qualification rate, as well as the data used to draw the Beveridge curve, a widely scale used analysis tool in the literature to highlight the balance of the labor market, are derived from official EUROSTAT statistics. Analyses show that the over-qualification rate has increased over the considered period at the EU level and in the cases analyzed, especially among women. Furthermore, the results illustrate the need for additional efforts in order to achieve a balance on the labor market.

Keywords: *Qualification mismatch, over-qualification, Beveridge Curve, labor market.*

TOWARDS HIGHER EDUCATION DATA HYGIENE – A CASE STUDY

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Abstract

While developments in data analytics have provided unprecedented opportunities for Higher Education Institutions (HEIs) to understand themselves and fulfill their missions, it remains a challenge to maintain good institutional data hygiene, with well-known barriers including lack of incentives beyond regulatory compliance, and thus lack of data sharing within the institution (Krawitz, Law, and Litman, 2018). The paper is a case study of the efforts of NYU Shanghai to improve institutional data hygiene when building the infrastructure for analytical transformation, with its nature as a Sino-US joint venture adding to the complexity. By addressing the above-mentioned challenges through establishing a central workgroup, actively utilizing regulatory reports, and engaging operational units into the process of defining and visualizing institutional data structure, NYU Shanghai made significant progress, including successfully initiating its Data Warehousing Project to integrate data silos and to improve institutional data hygiene at large. The paper also discusses how the experience of NYU Shanghai may be applied to other HEIs at a similar stage of data maturity.

Keywords: *Higher education institutions, data hygiene, regulatory compliance, data silos, analytical transformation.*

The background features a vertical color gradient from light green at the top to light blue at the bottom. Overlaid on this is a network of white lines forming irregular polygons, with a fine grid of small white dots in the background.

VIRTUAL PRESENTATIONS

TEACHERS AND STUDENTS

STUDENT ACCESS TO AUTOMATED MARKING TOOLS AS A WAY OF IMPROVING THEIR COMPREHENSION

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Abstract

Feedback, on both a summative and formative basis, is a critical component of modern teaching. At the same time as institutional expectations on quality and volume of feedback grow, learner expectations of turnaround times also become increasingly hard to meet, especially in large cohorts. One approach is to provide automatic feedback which can be applied on a formative basis or to support summative marking. To support learner experience on one large module a version of the automated summative marking system was provided on a formative basis to learners throughout their project offering a representative subset of all the marking criteria used and detailed feedback on errors found in submission. This tool has been offered over two student cohort years, 2018 and 2019, and been widely used by the learners. In 2019 there were a total of 13,141 unique submissions to the tool from at least 312 individuals (of 362 enrolled). Feedback from both learners and academic staff has been very positive, helping both pro-active problem solving and domain knowledge in the learners while reducing workload for staff, showing the approach has been highly effective in this domain.

Keywords: Feedback, automation, problem solving.

PERCEPTIONS OF ENGLISH LANGUAGE PRIMARY SCHOOL TEACHERS IN VIETNAM TOWARDS THE IMPLEMENTATION OF ENGLISH AS A MEDIUM OF INSTRUCTION

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Abstract

The implementation of English as a medium of instruction (EMI) in English-as-a-foreign-language (EFL) classrooms is beneficial to the amelioration of students' English skills. It is assumed that the earlier EMI is engaged in teaching, the more effectively English language students can enhance their skills. Because of this assumption, EMI is being implemented in many EFL classrooms, starting from primary schools. Recently, Vietnamese primary school teachers of English have been encouraged by the Ministry of Education and Training (MOET) to implement more EMI in their classrooms with the belief that its implementation helps students develop their communicative competence, contributing to the realisation of making English as a competitive advantage for Vietnamese high school/college/university graduates by the year of 2020.

Teachers' implementation of EMI depends on many factors, one of which is their perceptions of EMI. This study surveyed English language primary school teachers about their perceptions towards the implementation of EMI in their EFL classrooms. 311 teachers from three provinces in southern Vietnam took part in an online questionnaire. Findings elicit that the majority of English language primary school teachers possessed a positive perception towards the benefits of the implementation of EMI to students such as: English language proficiency improvement, better interaction, cost-effectiveness for their learning, etc. Further, teachers admitted that the implementation of EMI can help themselves as well. They felt the need to participate in innovative English teaching methodologies, skill training as well as sharing sessions on the implementation of EMI. They recommended that in order to help them successfully implement EMI in their EFL classrooms, the facility need to be invested and the class size be smaller.

Keywords: EMI, perceptions, implementation of EMI.

THE LIGHT AND SHADOW OF ASSESSMENT PRACTICES: FOCUSING ON SGH IN JAPAN

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Abstract

This research will discuss the assessment practices in global education in the context of upper secondary education in Japan. It will also aim to clarify some of the features, challenges and measures of methods for assessing learning outcomes, progress and transformation. In 2014, MEXT started a Super Global High School program, a national project toward fostering global human resources. A whole-school approach is utilized to design curriculum, such that teachers put an emphasis on global consciousness, and encourage the connection between local and global aspects by the students themselves. This leads to inquiry-based learning that inevitably results in the acquisition of competencies, and expands learning resources beyond classrooms. A comprehensive quantitative and qualitative analysis based on practical reports for each fiscal year and students' works that each SGH provided, and interview and questionnaire surveys to teachers and students was utilized. Some features, challenges and partial measures for formatively assessing student-centered inquiry learning that differs from didactic education types, will be revealed in reference to the diagnostic tool of curriculum evaluation that was originally developed based on the critical comments of MEXT's interim evaluation. The actual situation and issues to overcome regarding the formative and summative function of assessment and their linkage to global education in Japan, very relevant to the SDGs, will be considered in the discussion part to show the light and shadow.

Keywords: *Super global high school (SGH), inquiry-based learning, assessment practices, formative assessment, whole-school approach.*

THE EUROPEAN PROFILE FOR LANGUAGE TEACHER EDUCATION. A PARTIAL IMPLEMENTATION IN SPANISH AND BELGIAN UNIVERSITIES

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Abstract

In recent decades, the European Union has launched series of initiatives and programs to promote the teaching and learning of foreign languages in Europe. Therefore, the language teacher education can be considered as crucial in these European policies.

The main objective of this study was to describe the context of the European vision on foreign language proficiency and to analyze how two European countries, bordering France, Spain and Belgium are trying to implement this vision at the level of education and more precisely that of the initial education of French as a foreign language (FFL) teachers. By comparing the two contexts, we try to offer suggestions to improve these teacher education programs as a previous study (Ruyffelaert, 2017) indicated that pre-service teachers need to improve their overall language proficiency of FFL. This study is therefore aimed at the initial education of FFL teachers and the policy makers of the two countries that are the subject of this study.

Concerning the research method, this study is of descriptive and comparative nature. It was carried out in two university teacher education programs during the academic year 2016-2017: «*Máster Universitario en Profesorado de Educación Secundaria Obligatoria y Bachillerato, Formación Profesional y Enseñanza de Idiomas*» with a specialization in FFL at the University of Granada (Spain) and, «*Specifieke lerarenopleiding in de taal- en letterkunde* » with a specialization in FFL at Ghent University (Belgium).

We obtained the following results for the main objective mentioned above. Thanks to the framework *European profile for language teacher education: a frame of reference* (2004), we were able to find interesting results on the current implementation of two of the four key elements of the *European profile*, referring to the importance of language skills of the foreign language teacher. These results allow us to propose some suggestions in order to incorporate these key elements and to improve the initial education of FFL teachers in Spain and Belgium.

In conclusion, this study allows to reaffirm the relevance of starting to reflect on the real implementation of a language component in the initial FFL teacher education programs, and, to increase the possibilities

for Erasmus stays and to stimulate students to participate in it, so that future non-native FFL teachers can further develop their language skills during this teacher education program to become better FFL teachers.

Keywords: *Teacher education, curriculum, pre-service teachers, French foreign language skills.*

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DEVELOPMENT OF PARENTS' TRUST IN TEACHERS SCALE IN SECONDARY SCHOOL

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Abstract

This study was to develop a Parents' Trust in Teachers Scale (PTTS)-to better understand how parents trust in teachers in the context of secondary schools in South Korea. First, based on the literature review related to trust and trust measures and interviews of parents in secondary schools, 77 initial items were developed. Content validity of the initial items by a panel of expert judges was accomplished and then face validity was examined by a group of parents. After the content and face validity were examined, 50 items were selected to measure parents' trust in teachers in secondary schools. A total of 241 parents provided usable data. To validate the instrument, exploratory and confirmatory factor analyses were performed, using SPSS 23 and Mplus7. Finally, the internal consistency of the instrument was examined using Cronbach's α . Results: The results of EFA and CFA suggested a three-factor model with the final 20 items retained with a 5-point Likert scale, and the three factors were named: student-teacher relationship ($\alpha=.973$), parent-teacher partnership ($\alpha=.950$), and the results of the trust formation ($\alpha=.821$), respectively. The model fit indices produced were $\chi^2(167)=507.083$, $p\text{-value}<.001$, $CFI=.937$; $SRMR=0.029$; and $TLI=.928$, each. The Parents' Trust in Teachers Scale can be used as a useful instrument to understand the characteristics of parent-teacher relationship in the school community and to measure the trust level of parents in secondary school for teachers in South Korea.

Keywords: *Warm-hearted school community, trust in school, parents' trust in teachers, scale development, factor analyses.*

Acknowledgements

This work was supported by a National Research Foundation of Korea grant funded by the Korean Government (2017S1A3A2067778).

THE NATURE OF CLASSROOM DISCOURSE IN PRE-SERVICE LIFE SCIENCES TEACHERS' LESSONS IN JOHANNESBURG

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Abstract

This is a qualitative case study which sought to determine the nature of classroom discourse in three pre-service Life Sciences teachers' lessons. There has been fervent discussion on the need for dialogic teaching with researchers indicating its potential in learner cognitive development and yet the approach exerts increasing demands on teacher input. Unlike a normal conversation, dialogic teaching involves the teacher initiating dialogue and making follow up on learners' responses. As such, there is a coherent

process of enquiry occurring in the science classroom, rather than disjointed communication between the teacher and the learners. Previous research has revealed that science teachers encounter daunting challenges in their bid to ensure their teaching becomes more dialogical. It is against this background that three pre-service Life Sciences teachers were observed each teaching one lesson and then interviewed once after the analysis of the videos of the lessons. The interviews solicited teachers' intentions when they asked questions, and engaged learners in class interactive activities. Analysis of the videos and interviews showed that classroom discourse in these three lessons alternated between being dialogic and authoritative teaching styles. The findings showed that in as much as the pre-service teachers plan for dialogic teaching, sometimes they abort their plan due to various issues which include failure to initiate a sustained dialogue, inability to probe learners' ideas, lack of knowledge of some of the ideas learners bring in the discussion and also lack of effective classroom management skills. These findings inform teacher professional development programmes and teacher educators on the pertinent knowledge and skills that science teachers require for effective science teaching and learning.

Keywords: *Classroom discourse, pre-service teachers, life sciences.*

TEACHERS' OCCUPATIONAL WORK ETHIC SCALE IN SOUTH KOREA

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Abstract

The Teachers' Occupational Work Ethic Scale (TOWES) was developed to provide schools with psychometrically sound teacher survey for assessing work ethic. Based on an extensive literature review on work ethic instruments and interviews of 16 principals from K-12 schools, initial survey questions were developed. A series of content and face validity of the initial items were examined by panels of judging experts. A total of 500 teachers across K-12 schools in South Korea provided usable data. Exploratory and confirmatory factor analyses verified the scale's structure and suggested a four-factor model: Work Ethic in Instruction, Work Ethic toward Students, Work Ethic in Overall Performance at School, and Work Ethic toward Fellow Teachers. The factor structure was shown to be stable across school levels (i.e., elementary, middle, and high school) and gender. Additional support for the construct validity of the TOWES was obtained based on scores of each of the four factors correlated moderately, across groups and at the school level, with job satisfaction and Teachers' Vocational Ethics. Implications and suggestions for further research and practice are discussed.

Keywords: *Work ethic, teachers' work ethic, scale development, factor analyses.*

IS IT BAD TO PROVIDE NEGATIVE FEEDBACK TO STUDENTS? THE ROLE OF REGULATORY FIT: A CASE FROM A UK UNIVERSITY

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Abstract

Drawing on regulatory focus theory, this research examines how students' chronic promotion or prevention foci influences their preference for receiving positive versus negative feedback for their assignment. This research further investigates the compatibility effect of students' chronic regulatory focus and goal orientation (regulatory fit). This research involves a total of about 215 respondents in two studies through questionnaires. Two experiments are conducted to test the role of chronic regulatory focus on students' preference for receiving positive versus negative feedback on their assignment (study 1) and the role of regulatory fit (promotion-focused students with gain-framed feedback versus prevention-focused students with loss-framed feedback) on students' motivation to improve after receiving feedback (study 2). The result of study 1 shows that students with chronic prevention focus prefer to receive negative feedback compared to students with promotion focus who prefer to receive positive feedback. Result of study 2 shows that students' motivation for improvement increase when they experience regulatory fit. This means that when students with chronic promotion focus receive

gain-framed feedback they become more motivated to improve their performance toward their next assignment compared to when they are exposed to regulatory non-fit condition (receiving loss-framed feedback). Similarly, when students with chronic prevention focus receive loss-framed feedback they become more motivated to improve their performance compared to when they are exposed to regulatory non-fit condition (receiving gain-framed feedback). Overall, the studies offer important contributions to theory and practice relating to providing appropriate feedback to students at higher education level.

Keywords: *Promotion focus, prevention focus, higher education, students, feedback.*

EXPLORING THE IMPACT OF THE COMPLEXITY OF COGNITIVE DEMANDS ASSOCIATED WITH CURRICULUM CONTENT ON STUDENT ACADEMIC PERFORMANCE: A CASE OF MATHEMATICS

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Abstract

Student academic performance is intrinsically linked to the complexity of the cognitive demands associated with curriculum content on offer. Skills development is largely regarded as a fundamental process that serves to engender critical expertise required for economic growth and sustainable development. The ability to operate at various cognitive levels is central to meaningful enhancement of human capital development. Meaningful development of mathematical skills in particular hinges to a large degree on the extent to which students are able to grasp curriculum content associated with various learning areas. The development of adequate cognitive competence to grapple with mathematics curriculum content would certainly make it possible for students to perform routine operations as well as complex procedures associated with various mathematical tasks. In response to this key imperative, the impact of cognitive demands associated with curriculum content on student academic performance was explored by tracking the academic performance of undergraduate engineering students in mathematics at a South African university over two semesters as part of a longitudinal study. This cohort of students was purposively selected as mathematics is largely viewed as an intellectually stimulating discipline providing opportunities for students to indulge in tasks pitched at various cognitive levels. The study revealed that student academic performance based on mathematics curriculum content offered in the second semester was inadequate. This inadequate academic performance can partly be attributed to the students' inability to cope with the complexity of the cognitive demands associated with mathematics curriculum content offered in the second semester. Theoretical implications for meaningful critical reflection on the complexity of cognitive demands associated with curriculum content are discussed.

Keywords: *Cognitive demands, mathematical skills, cognitive levels.*

A MOBILE EEG STUDY ON THE NEUROPHYSIOLOGICAL CORRELATES OF ORAL READING IN DYSLEXIA

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Abstract

Cognitive neuroscientists have already begun to examine the neural basis of reading in dyslexia. In this study, the neurophysiological characteristics of reading in Filipino children with dyslexia were investigated. Using mobile EEG (mEEG), the researchers sought to determine brain differences between four normal reading children (NR group; mean age = 9.61; SD = 1.00) and five children with dyslexia (DYS group; mean age = 9.61; SD = 1.7) as they were tasked to read regular words, irregular words, and non-words. Significant differences were revealed for irregular words ($U = 0, p = .01$) and non-words ($U = 1.5, p = .04$), but not for regular words ($U = 3, p = .08$). mEEG analysis revealed that the DYS group

exhibited slower brain activity in the left frontal and posterior regions, as well as stronger activity in the right hemisphere. These findings signify that the reading impairment in dyslexia is caused by reduced communication and weaker connectivity in the frontal and posterior regions which are important areas for visual word processing. Furthermore, stronger connectivity in the right hemisphere during reading indicates a compensatory mechanism in dealing with reading difficulties.

Keywords: *Dyslexia, reading, mobile EEG.*

EXTENDED CURRICULUM PROGRAMS AS A SUPPORT MECHANISM TO ENHANCE SOUTH AFRICAN UNDERGRADUATE SCIENCE STUDENTS' ACADEMIC PERFORMANCE IN MATHEMATICS

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Abstract

The complexity of the articulation gap between school and higher education posed enormous challenges to institutions of higher learning in South Africa. In response to this predicament, various strategic interventions were adopted with a view to adequately address student under-preparedness for tertiary studies. As a gateway knowledge domain, mathematics forms an integral part of various curriculum programs geared towards the cultivation of skills required by the mainstream economy. However, inadequate student academic performance in mathematics remains a pervasive pedagogic challenge afflicting meaningful enhancement of human capital development through inculcation of critical skills. In recognition of this fundamental challenge, undergraduate science students' academic performance in mathematics was tracked over a two year period as part of a longitudinal study at a South African university with a view to assess the efficacy of the remedial interventions underpinning the concomitant extended curriculum program. The students were enrolled for a degree program in science specialising in Analytical Chemistry. In addition, the students were placed in the extended curriculum program by virtue of their inadequate overall admission score. The student cohort constituted a purposive sample within the context of this study. By its very nature, the intrinsic structure of the concomitant extended curriculum program makes provision for the implementation of remedial interventions to provide critical academic support to the students as they are viewed as at-risk cohort by virtue of their profile. The duration of the extended curriculum program is longer than the normal duration of a mainstream curriculum program. The students were divided into two groups according to the profile of their overall admission score. Analysis of student academic performance in mathematics over the two year period revealed disparity in the performance of the two groups. Students in the group with a comparatively higher overall admission score demonstrated a higher academic performance in mathematics during the period under review. While the students with a comparatively lower overall admission score derived benefits from the remedial interventions put in place, there is a crucial need to reconfigure the inherent structure of the remedial interventions in order to address the performance disparity between the two groups. Theoretical implications for meaningful curriculum reform are discussed.

Keywords: *Articulation gap, remedial interventions, curriculum reform.*

GENDER DIFFERENCES BETWEEN THE PERCEPTIONS OF PHYSICS AND SCIENCE IN GENERAL AMONGST SENIOR AND JUNIOR STUDENTS AT A SOUTH AFRICAN UNIVERSITY

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Abstract

It is widely accepted from literature (Agra et al., 2017) that male students outperform their female counterparts in science, and in particular physics. Accordingly, gender differences stem from their prior backgrounds in mathematics, physics and differences about their attitudes and beliefs about the subject.

To measure students' differences in perceptions regarding physics and science, use is made of a questionnaire that is comprised of two sections, A (four questions) and B (fifteen questions). In section A students were required to respond to questions that relates to their relationship between life and physics, chemistry and mathematics, while in section B, a probe is made regarding their confidence in physics and chemistry. A total of 101 students participated in this study, ranging from junior students (62 emergency medical care and podiatry students) to senior students (37 analytical chemistry fourth year students). Results are presented in both numeric and in percentage form. The fundamental difference between the genders is that in both groups there appears to be a strong affinity for chemistry for the female students, and even a stronger liking for chemistry by the senior analytical chemistry students. The males on the other hand shown an average liking for chemistry in both cohorts, but a slightly better liking for physics as a subject. From this anecdotal study, it appears that females show more preferences for science and chemistry than their male counterparts.

Keywords: *Physics, gender, chemistry, anecdotal, questionnaire.*

QUESTIONS AND SCIENCE CONTENTS PREFERRED BY EARLY CHILDHOOD EDUCATION TEACHERS IN TRAINING

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Abstract

In scientific education, the inquiry approach through questions is a key tool that allows establishing relationships between the facts or phenomena under study to involve students. It fosters self-learning through problem solving, dialogue, discussion, reasoned argumentation, free thought, prediction, experimentation, explanation, reflection, and evaluation. In the teaching of sciences in early childhood education, it is important to establish links between internships in schools and structure of university lectures, fostering the transition to school research. Learning of future teachers must be diverse and reflexive. The role of evaluation as a regulator of the teaching-learning process should be considered, as well as to address topics that provide resources and knowledge to future teachers, including to use such scientific knowledge in everyday contexts and provide them with a critical vision on certain topics of interest.

In this research, we have considered to know which questions and contents arouse curiosity among Early Childhood Education teachers in training and what kind of questions and contents they would propose to work in the classroom for the learning of sciences. Reasons (convictions, motivations) of their preferences have been investigated, as far as possible, to focus their development as teachers. Ad hoc questionnaires for this study have been carried out in the last two courses (2017-18, 2018-19), and filled each of them in by around 58 students of "The Nature Sciences in Early Childhood Education" of the Degree in Teaching. Most of the students considered as interesting content to work in the classroom objects and materials of the environment and water and air, and less than half considered living beings. The human body and living beings stand out as the preferred topics. The presence of chosen contents or not in the curriculum seems to be an important factor in the decision of students. Almost all of the students considered that they need to learn scientific contents together with strategies and teaching techniques on how to teach, both to be able to put them into practice and to teach students well satisfying curiosity that may arise in the classroom. And to acquire a greater conceptual base of its own as well.

In many cases, preferences as students include more complex issues than those chosen to deal with children. In relation to the questions that they considered they would make children, based on their own experience, including school practices, the most mentioned ones were about the water cycle and water states, physical phenomena and living beings.

Keywords: *Questions, school research, teaching of sciences, early childhood education.*

GENDER DIFFERENCES IN PHYSICS ANXIETY AT A SOUTH AFRICAN UNIVERSITY

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Abstract

From literature, it is known that anxiety for physics amongst female students appears to be higher than for male students. This study is carried out to determine the role that gender plays in their preference to physics and the anxiety they experience in the subject. To measure the anxiety that students experience in physics, use is made of a modified physics anxiety questionnaire, which was comprised of fifteen questions. This questionnaire has a rating scale from +1 (minimal anxiety) to + 5 (very high anxiety). A total of 64 students participated in this study. Results for this study is presented both in numeric and in percentage form. From this study, it was revealed that female students have a significantly higher level of physics anxiety compared to their male counterparts. Besides the females having a higher level of anxiety in the thought of seeing their physics assessment marks, both males and females have a similar level of anxiety for the item relating to fear of failing their physics tests or examinations. Further, females appear to cringe in their behavior when they have to go to their physics classes. The anxiety experienced by male students is their desire to excel in the subject and thus they are more focused in their physics studies, while female students are overcome by the high cognitive demand of the subject and present a higher level of anxiety in the subject.

Keywords: *Physics, gender, questionnaire and anxiety.*

TEACHER CHALLENGES AND CHOICE OF PROGRAMMING TOOLS FOR TEACHING K-12 TECHNOLOGY AND MATHEMATICS

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Abstract

A current ongoing process in many countries today is to implement programming in K-12 education. With this comes challenges for the involved teachers on how to best teach and integrate programming in their subjects. On the other hand, the introduction of programming could also open opportunities for programming as a new and improved way of learning and understanding technology and mathematics. For Swedish K-12 teachers this should be rapidly implemented, but without any concrete guidelines for how or for which tools to use. The aim of this study was to explore teachers' perceptions of learning and integrating programming in technology and mathematics, and their preferences of programming tools. The overall research strategy was a case study approach, with two instances of a programming course as the case study units. In both course instances the main choice has been between block programming with Scratch, and textual programming with Python. Data was collected in a combination of submitted essays, programming assignments and workshop observations. Findings from a content analysis of the submitted essays have been compared to workshop observations, and to the analysis of programming assignments. Results suggests that the main challenge in learning and integrating programming is the perceived time trouble. In parallel, many teachers highlight the potential benefits of renewing their teaching and learning sessions with programming-based problem solving. Considering the choice between block programming and textual programming several teachers brings up the idea of combining the two rather than excluding one of them. Furthermore, there seems to be minor differences in the preferences of programming tools between teachers with different subjects and different age groups of students. Finally, the most positive finding is the improved self confidence that many teachers show, when their own ability to manage programming in their classrooms increase after learning the fundamentals of programming.

Keywords: *Programming tools, block programming, textual programming, teachers professional development.*

PROJECTS AND TRENDS

PROMOTING LEARNER ENGAGEMENT: MEASURING AND CHARACTERIZING LEARNER ENGAGEMENT USING A COLLABORATIVE ONLINE LEARNING TOOL

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Abstract

Promoting learner engagement in large cohorts is a well-documented problem. One solution adopted in the lecture space is 'backchannel' software, which in its simplest form, provides an online chat facility that operates alongside lecture delivery. This provides an opportunity for learners to interact and ask questions without the fear of speaking out in front of a large group. Similarly, backchannel software can be used outside the lecture space to enhance engagement; however, this use has not been fully explored. Accordingly, the aim of this work is to evaluate the benefits of backchannel software to promote engagement inside and outside of the lecture space. This was achieved using the Today'sMeet backchannel service to collect 2,022 messages from 185 learners undertaking a second semester, first year programming module at Queens University Belfast. Subsequently, the findings support continued use of backchannels for promoting learner engagement inside and outside the lecture space.

Keywords: *Backchannel, student engagement, TEL, blended learning.*

THE EFFECTS OF INTERNET USE BY PEOPLE WITH AND WITHOUT INTELLECTUAL DISABILITY: STUDENT TEACHERS' PERSPECTIVES

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Abstract

The Internet is a tool that has multiple benefits for individuals and for the society as a whole, while some dangers can also be identified. The perceptions that we have about the Internet may be modulating our use of this technology and especially that of some groups that have been traditionally excluded from the digital arena, such as people with intellectual disability (ID). In order to promote the digital inclusion of people with ID, we need to explore the point of view of the general population about the advantages and disadvantages of Internet use by this group. Special attention should be paid to those professionals that will be providing support soon to people with ID in different settings (e.g. schools, sheltered workshops). The purpose of this study was to explore the perceptions that student teachers have about the benefits and risks of Internet use. The study also aimed to determine whether these perceptions differ when rating them for people with or without ID. A cross-sectional study was conducted using an online questionnaire to collect data. A convenience sample of 182 undergraduate students of Education was recruited into the study. Students had an average age of 21.42 ($SD = 4.34$) and the majority of the participants were female (84.1%). Only 17.6% of the students had regular contact with people with ID. Results show that student teachers perceive more risks than benefits of going online for both people with and without ID. Moreover, dangers of using the Internet are perceived significantly greater for people with ID than for the general population ($p < .001$). Female participants were more likely to report greater online risks when compared with male participants ($p < .05$). No significant differences on student teachers' perceptions were found with regard the frequency of contact with people with ID. Findings from this study reveal that despite the possibilities that the Internet can offer to the individuals, there are still some worries about its use. This perception is even greater when referring to people with ID who are usually seen as more vulnerable to abuse. We must be aware of and address these perceptions since they may be hindering the participation of people with ID in the digital arena and, therefore, limiting their opportunities of social and personal

development. In addition, positive risk management approaches that avoid digital overprotection of people with ID should be provided to student teachers.

Keywords: *Intellectual disability, Internet, benefits, risks, student teachers.*

INTEGRATING NEW LITERACIES IN AN ONLINE LEARNING COMMUNITY

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Abstract

The current developments in information technology have revolutionized the learning practices in education. There have been numerous discussions of how to integrate the new literacies in the online learning community. As technology continues to enhance, it is expected that learning institutions will adopt new scholarship making the traditional ones obsolete. People have drastically adjusted to the modern lifestyle; whereby new forms of communication and information continue to expand. For instance, the use of presentation software, video editors, and social networks has become a key aspect of the disclosure. To this end, learners have to be prepared and proficient enough to embrace these changes. On the contrary, opponents of this ideology argue that the deictic feature of the internet and information communication technology (ICT) might end up impeding learning. Despite these criticisms, there is abundant literature supporting the adoption of digital literacies in the online learning community since it facilitates the expansion of critical thinking and social interaction skills. Numerous advantages have been linked with digital literacies in the modern world. Nonetheless, the existing gap between the new literacies and traditional literacies has led to a slow transition in the learning practices. Instructors are not confident enough that students will adjust effectively to the modern scholarship with the total abolition of the traditional learning practices. What is the efficiency of digital literacies in an online community learning? How will instructors incorporate these procedures in the online classes?

Keywords: *New literacies, information communication technology (ICT), digital literacies, online learning, and social network.*

STRATEGOI: A SPOC TO TEACH ANCIENT GREEK

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Abstract

We present the SPOC (Small Private Online Course) 'STRATEGOI'. *The Wars between Greeks and Persians*. This course, created on the UAMX platform for the subject *Greek I* (first semester of the second year of the Degrees in *Sciences and Languages of Antiquity* and *Art History and Sciences and Languages of Antiquity*) has been implemented for the first time in the current academic year (2018/2019) following the *Flipped Classroom* methodology. The final results of the experience are also shown.

Keywords: *Ancient Greek, 'spoc', flipped classroom, greco-persian wars.*

CHILDREN LEARNING A FOREIGN LANGUAGE BY DOING AND PLAYING

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Abstract

Since the last part of XX century there has been a great interest on Foreign Language (FL) acquisition. A lot of research has been done on Second Language Classrooms (Chaudron, 1988) and on how English learning can be improved (Ellis and Sinclair, 1989) big efforts have been made on making lessons more meaningful to students (Long & Doughty, 2009). Special attention was given to learner's uptake (Bailey,

1991) although most of the studies have been carried out studying teacher's performance in class. This research pretends to investigate the teaching learning context itself. Although taking into account all participants in class, the main focus is on learners. Taking discourse analysis as an essential tool (Sinclair & Coulthard, 1992; Tsui, 1994; Poyatos, 1998; Velasco 2012) we study English classes for Spanish young learners aged 10-12.

We are interested in analyzing learners' oral output after using a different methodology. Believing that motivation, affect and students' emotional intelligence play an exceptional role on L2 learning (Arnold, 2006) as well as Cooperative Learning (Kagan, 2009; Slavin, 2014), our methodology has focused on promoting and helping students to create a game to play in and out of class, in big and small groups in order to improve their FL acquisition. We have studied students' participation and interaction level as well as their English acquisition level.

Results show very relevant information that could greatly help teachers and students from all educative levels.

Keywords: *Cooperative Learning, gamification, classroom interaction, foreign language learning, didactics.*

DEVELOPMENT OF “CONTENT-FOCUSED ACCESSIBILITY” E-LEARNING MATERIAL FOR ENGLISH LEARNING TARGETING VISUALLY IMPAIRED UNIVERSITY STUDENTS

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Abstract

Students with visual impairment use media conversion (e.g., enlarged characters and braille) and ICT environments (e.g., sounds and PC screen magnification) to learn English. However, there are very few English learning materials in braille, and magnification-capable and digital materials for higher education are not commercially available. Although many publishers produce online English learning materials, many do not allow screen magnification and text-to-speech function. Therefore, students with visual impairment need to create braille versions of and/or text data for such materials. However, satisfying such requests is time consuming, which may cause students to lose important opportunities or motivation. A self-learning environment for students with visual impairment to study English has not been completely developed.

The author found that, in many cases, only these “technical accessibility” of learning materials is insufficient for students with visual impairment to respond to questions depending on question patterns. Due to the absence of useable leaning materials, the English skills of many visually impaired students are surprisingly low. Nonetheless, university students require basic English skills. Hence, this study presents original attempts to modify the organization of questions for self-learning English grammar books. The author refers to this material as original e-learning “content-focused accessibility” material.

The author's students with visual impairment studied this material and provided feedback from the following perspectives: 1) effectiveness of the material, 2) suggestions to improve the material, and 3) improvement of activeness for learning English after studying the material. Further, the author analyzed the students' grades before and after studying the material.

The study revealed four interesting results: 1) Approximately 90% of the students with severe visual impairment found “content-focused accessibility” material very useful. 2) Those with severe visual impairment provided both positive feedback on and suggestions for improvement of the material. 3) Approximately 90% of the students with severe visual impairment significantly improved their autonomy for English learning after studying this material. 4) Finally, 80% of the students with severe visual impairment who studied this material improved their grades. Furthermore, 100% of them answered that their autonomy improved after studying the material. These results demonstrate the effectiveness of “content-focused” accessibility material in the self-learning of students with severe visual impairment.

Keywords: *Visual impairment, “content-focused accessibility”, e-learning, students' engagement in English self-learning.*

PRE SERVICE TEACHER ATTITUDES AND SELF EFFICACY TOWARD INCLUSION IN KOSOVA

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Abstract

Inclusive education is a relatively new philosophy and practice in Kosova. There is increasing recognition that successful implementation of inclusive education practices depends largely by teacher' positive attitudes and high self-efficacy toward these practices.

The purpose of this study is to examine attitude toward inclusive education and self-efficacy for inclusive practice among pre-service teachers in Kosova. Moreover, it will examine the relationships between pre-service attitude and self-efficacy and other demographic variables such as gender, age, study years, previous professional trainings in inclusive education, experience in working with children with disabilities and significant relationship with a person with disabilities.

This study will include 180 BA and MA pre service teachers (primary and preschool) from two universities in Kosova.

The findings of this study are discussed within the framework of the importance of pre service teachers' personal variables in successful implementation of inclusion in education.

Keywords: *Pre service teacher, inclusive education, attitudes, self-efficacy.*

SELECTED ASPECTS IN EDUCATIONAL RELATIONSHIPS

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Abstract

The objective of the present paper supported by the Student Grant Competition at Palacký University Olomouc (Research on inclusion of pupils and students with special needs, IGA_PdF_2018_014) was to analyse, identify and determine the aspects of the relationships between educational professionals. The demand for the data resulted from a quantitative research study undertaken in 2017 in the framework of researching inclusion among persons with special needs.

The basic usable data were obtained by means of a qualitative research approach focusing on primary school educational staff and analysing professional relationships between two groups – teachers and assistant teachers. The research was based on semi-structured interviews and included 21 respondents in each category. The research was carried out from April 2018 to November 2018 and was based on the reflection of the two occupational groups consisting of the employees of Palacký University Olomouc. In the framework of these focus groups, the basic interview topics were defined that focused on mutual communication, personal relationships, administration, and teaching organization.

The results of the research suggested the importance of reflection in the relationship between educational professionals, which is based on the requirement for a clear definition of the competences of both target groups both in terms of teaching organization and job content, especially in the case of assistant teachers. This aspect is also crucial in terms of administration, where there is a discrepancy between the teachers' own needs and assigning administrative responsibility to their assistant teachers, who seldom fulfil these duties. Despite the great variability and complexity of the data collected, the needs of both groups were identified. Both groups assess their daily communication in a positive way, but the research also suggests that the system of education lacks sufficient time for a deeper analysis of the teaching process; and therefore, both groups use alternative means of communication, even after working hours. The structure of the educational process highlights a high degree of adaptability of the participants and significantly affects the feeling of own competency and indispensability in the educational process. Both groups prefer communication based on partnership, which requires specific favourable conditions and sufficient time.

The results indicate the need for a deeper analysis of the relationships in a broader context of the school environment, which would include both the attitude of the leading employees and other staff involved in the process of inclusive education.

Keywords: *Inclusion, assistant teacher, special education, primary school, relationships.*

THE VALUE AND DIFFICULTIES OF LEARNING WITH DIGITAL TECHNOLOGIES AMONG HIGHER EDUCATION STUDENTS IN GHANA

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Abstract

Research to determine the relevance (role? importance? value? contribution?) of digital technologies for learning seldom target the students about the value that digital technologies hold for their learning, often disregarding the difficulties students encounter when they learn with these technologies. The Joint Information Systems Committee's (JISC) Higher Education Student Digital Experience insight survey was used to determine the digital experiences of 1,937 students who were enrolled at three dual-mode higher education institutions in Ghana. The results revealed that full-time students valued digital technologies during their learning more than distance learners did. The results further showed that distance learners have more difficulty in managing online information, in comparison to full-time students. The results show that dual-mode institutions in Ghana need to take additional measures to support distance learners with real time instructions to guide students on how to interact with course content. Course content and resource must be delivered in short burst to avoid information overload.

Keywords: *Digital technology, digital learning, higher education, attitude to technology, Ghana, online learning experiences.*

BIBLIOMETRIC REVIEW ON THE EDUCATION OF PEOPLE WITH AUTISM SPECTRUM DISORDER WITHOUT ASSOCIATED DISABILITY

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Abstract

Throughout the last decades, the number of published studies addressing the schooling of students with autism spectrum disorder (ASD) has increased significantly. The aim of our study is to conduct a bibliometric review in the Scopus database on published and indexed research that addresses the schooling and training of students with ASD without associated intellectual disability. The selected studies in the field of education and psychology were 500. The results have shown an increase in productivity, decreasing notably in 2018. With respect to the computation of journals that publish content on ASD, The Journal Research in ASD is highlighted. In addition, a tendency to write in collaboration has been observed, being equal the number of publications by each of the authors. In conclusion, it has been pointed out that with regard to the subject, the perspective of the people with ASD is not taken into account, but rather that it is investigated from a professional and theoretical point of view. That is why we propose some future lines of research from the voice of the families and people with ASD.

Keywords: *Bibliometrics, Autism spectrum disorder, special education.*

ROBOTICS IN THE TEACHING OF PHYSICS: A PROJECT BASED APPROACH

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Abstract

This paper aims to propose a procedure for the use of robotics in physics teaching based on a model of project-based learning (PBL). The procedure was applied during one semester to high school students of two public schools in Guaratinguetá, in the Valley of the Paraíba - SP. The methodological approach

employed was Action Research, with the involvement of Physics teachers from the partner schools, working together with teachers and students from São Paulo State University (UNESP) – Guaratinguetá Campus. The motivation for the development of the project is the lack of both laboratories and materials for experimental activities observed in Brazilian public schools. In this context, considering the recommendation of the National Curricular Parameters for Secondary Education for the use of technology in the classroom, we have opted for the insertion of educational robotics through the development of a mobile robot in the form of a teaching project. Educational Robotics, besides being a current and relevant technology, allows the student to interact with the learning object, which contributes to the construction of his knowledge. The robot design was done using Arduino platform. Regarding the use of the PBL model, in the planning stage first we established the objective of designing an automated vehicle that would then be used to determine the physical quantities of its movement (displacement and average velocity). Then we established a road map for the development of the action in the form of activities carried out in workshops in the schools, with the participation of the students, teachers and the tutors of UNESP. The application of the procedure indicated as results, among other aspects, a greater motivation and also a greater involvement of the students in the activities developed in the classroom. The students participated in the development of the robot in all activities, acting both in the assembly of the circuits and in actions related to its programming.

Keywords: Active learning, educational robotics, mobile robot, teaching physics, teaching projects.

ROBOTS AND STUDENTS WITH AUTISM SPECTRUM DISORDER IN THE EDUCATIONAL CONTEXT

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Abstract

The development during the last decade of Information and Communication Technologies (ITC) has provided many mechanisms for the intervention of people with autism spectrum disorders (ASD). Currently, among these types of ICT, a growing intervention method based on Social Assistance Robots (SAR) is being developed. Robotic assisted therapy not only perfectly aligns with the methodological principles that should guide the teaching-learning process of these students (individualized intervention, sequence of activities, active experiences and predictive environments), but also with the educational needs of these students. This rapid advance in robotics, its good results, the complexity of the educational need and the increase in cases of ASD, make it necessary to include this type of intervention in educational contexts. In this sense, the main aim of the current research was to identify a state of arts of robots in an education context and to provide an overview of skills worked. The current bibliometric study has been carried out through the Web of Science (WOS). The results showed that the number of empirical applications in the educational context is limited. Only 5 studies were adjusted to the previously established criteria, such as age of the participants (between 2 and 16 years), purpose of articles (academic) or the years of publication (between the years 2005 and 2017). Overall, all the studies demonstrate the great potential of robots as support tools in the education of students with ASD. Nevertheless, the analysis emphasizes the methodological limitations of these studies that make it difficult to generalize the results from these studies to other contexts.

Keywords: Autism spectrum disorder, robots, intervention, social and communication skills.

THE USE OF VIRTUAL LEARNING ENVIRONMENTS AND ACHIEVEMENT IN PHYSICS CONTENT TESTS

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Abstract

In the advent of industry 4.0, the use of Virtual Learning Environments (VLEs) has become increasingly valuable for mediating the teaching and learning of science concepts. These VLEs embedded with simulations of real scientific systems, processes and accompanying learning activities, have been used to

simplify concepts and enhance visualisation for science students and teachers alike. In South Africa, Physics Education Technology (PhET) and other free online simulations have been commended by several science teachers as useful tools for science learning in virtual environments. This baseline study examined the effects of using virtual learning environments (VLEs) on students' achievement in physics content test. Sixty eight (n=68) third year physical sciences education students from a South African teacher training programme participated in the study. A sequential mixed method explanatory research methodology was followed in investigating the effects of using VLEs on students' achievement in physics content test. The initial phase of the study constituted a quasi-experimental phase where a Physics content test was given pre and post virtual learning interventions using PhET simulation laboratories and the associated activities. This phase was preceded by follow-up semi-structured focus group interviews with all the participants to establish their perceptions of virtual learning environments engaged with. Data from quasi-experiment was analysed using SPSS 25 and transcribed textual data from focus group interviews was analysed using thematic content analysis assisted with Atlas.ti 8. Findings from the study revealed that, mean achievement scores in physics content tests improved significantly post intervention in VLEs. From follow-up focus group interviews five themes stood out where students revealed that; (1) within the VLEs, they were able to visualise scientific micro worlds (2) Embedded activities and tasks enhanced self-directed learning and assessment (3) the virtual classroom space enhanced collaboration with peers on learning tasks (4) the VLEs provided a convenient way to learn sciences (5) The VLEs did not promote authentic science learning. The implications of these findings are that virtual learning environments are a relevant learning enhancer for science and physics learning in the 21st century. We therefore recommend based on these findings that, larger scale studies be engaged to further investigate the affordances of VLEs in science education, including all the factors that affect how students learn in VLEs.

Keywords: *Virtual learning environments (VLEs), content tests, visualisation, physics.*

INCLUSION OF MUSIC THERAPY AS AN INTERVENTION TOOL IN THE THERAPEUTIC PEDAGOGY CLASSROOM

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Abstract

This study shows the intervention carried out in the classroom of Therapeutic Pedagogy in an ordinary school of the province of Alicante in which it has been used the music therapy. The main goal of this project is to promote the use of the music therapy as an educational discipline and, also, to give an individualized answer to the learning difficulties from a more dynamic and motivating perspective. This therapy creates an atmosphere of trust and fun using the music as the basis of this methodology. The participants of the study had been: two students of Early Childhood Education and two students of Primary School. Each one of these students presents a different SEND (Special Educational Needs and Disabilities): a Developmental Delay, PDR (Psychomotor Development Retardation), a SLI (Specific Language Impairment) and a MID (Mild Intellectual Disability). Through the creation of some individual pedagogical activities using the music therapy, it has been developed an intervention of six sessions per student of approximately thirty to forty-five minutes with designed and adapted materials based on this therapy as an intervention tool. The results obtained have had a degree of effectiveness between 77% and 84% and it manifests the advantages that the use of this methodology has provided to the field of education because it assists the emotional develop. Besides, it has improved the goals that had been worked, the motricity, the concentration and the affectivity of the students decreasing their anxiety. In the future, this project could be improved by using this methodology with other kinds of SEND and, what is more, it could be used for a longer period of time and with new materials to definitely prove its effectiveness.

Keywords: *Assessment, educational innovation, music therapy, special educational needs and disabilities, therapeutic pedagogy.*

ENVIRONMENTS OF DYNAMIC LEARNING UNDER 3D INTERACTIVE VISION: RECONSTRUCTION OF THE ORBIT

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Abstract

Introduction: technology, applied to training in health sciences, has undergone great changes over time. These changes always occurred parallel to the technological evolution of society, which is why technological advances have modified the ways of teaching and learning of university students in experimental sciences and health. Between the different subjects in medicine, one of the most important is anatomy. This will form a base which will follow the students throughout their career.

Previous findings: traditionally, anatomical dissection has been the basis of anatomical studies. Although it is a global and accepted method currently used in almost all medical universities, it has its limitations. An important disadvantage is that sometimes the structures in the human body are too small, in addition to the low availability of the object of study.

Later, using radiological sections to analyse and enlarge different structures started. The main problem with this technique is that, even though you can obtain larger images, these are two-dimensional images. In recent years important technological advances have been developed in the post-processing of radiological medical imaging.

Objectives: the aim of our study is to demonstrate the advantages of 3D reconstruction of the orbit in comparison to other ways of teaching and studying. These innovative techniques allow the representation of three-dimensional anatomical images using image diagnostic devices coupled with software capable of reconstructing any radiological section: axial, coronal or sagittal. In particular the orbit can obtain benefit from this system given its morphology: pyramidal shape, walls formed by 7 different cranial bones, small volume, large number of structures inside.

Methods: applied research; comparison, observation and analysis. Devices used: Toshiba Aquilion 64 TC (a whole body 64-slice CT scanner) using Vitrea software.

Results: the three-dimensional vision has become a crucial tool for the learning and understanding of many complex anatomical structures such as the orbit, enabling the introduction of novel techniques for the teaching and learning of anatomical models.

Conclusions: our research demonstrates the advantages of the 3D reconstruction of the orbit; visualization of each structure with its anatomical relationships, image enlargement, precise description, accessibility, morphological comprehension and improvement of spatial perception.

Keywords: Teaching, technology, 3D reconstruction, anatomy, orbit.

CREATING MOODBOARDS WITH DIGITAL TOOLS: A NEW EDUCATIONAL APPROACH

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Abstract

The paper presents methodologies and first results of an educational experimentation (Brevi, Celi, & Gaetani, 2018) held at the Bachelor of Science in Product Design programme of Politecnico di Milano. In order to build a body of knowledge for Design freshmen, the experience had the aim of matching basic skills developed at the first year with the need of an autonomous approach required at the second year from Metadesign Studio throughout the tools for creating moodboards: a collection of images, colors and texture with the aim of representing emotions, feelings or 'moods', suggested by the design research. Moodboards have an important function in developing students' ability to articulate their thinking.

The enacted experimentation had the aim to present and test some practical tool for moodboards development. During the Methods and Instruments for Design course these skills have been developed through targeted exercises of awareness and techniques of photographic processing. To enable students to act in a more conscious way the educational approach has provided lessons with practical visual examples, a selection of on-line materials and step by step guide with suggestions.

Keywords: Metadesign, moodboard, digital tools, integration, photo editing.

5G TECHNOLOGY FOR AUGMENTED AND VIRTUAL REALITY IN EDUCATION

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Abstract

This paper deals with the adoption of 5G technologies in an educational context, focusing on activities based on Augmented Reality (AR) and Virtual Reality (VR). After introducing some scenarios using AR/VR approaches, we will describe the main characteristics of 5G and will provide an example of application in the field of music education.

Keywords: *5G, education, augmented reality, virtual reality, cloud infrastructures.*

COMPARISON OF OPTIONS FOR SUPPORTING SOCIALLY DISADVANTAGED ROMA PUPILS WITHIN THE CZECH AND SLOVAK REPUBLIC EDUCATION SYSTEM

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Abstract

Efforts at securing equal treatment in education have involved developing various compensatory procedures focusing on people in disadvantaged situations. Within the Czech and Slovak Republics, support measures are generally designed for pupils from a demotivating social environment; pupils who live in deprived districts, pupils in families who do not want to or cannot focus on their children's needs, pupils from families with long-term or severe difficult relationships, pupils living in facilities under the protection of social services or educational facilities securing institutional or protective care. A large proportion of pupils who fall within this group are from the Roma community. Thus from a long-term perspective, support measures become one of the most important tools for alleviating the future impacts of Roma marginalisation, allowing for greater chance of social participation. Systematic steps supporting the education paths of Roma children and school success are subject to great expectations, and a lot of effort and endeavour is invested in them, alongside significant funds. In order to achieve a higher level of education for socially disadvantaged Roma children, co-operation is naturally required on the one hand from the Roma themselves who should be engaged in meeting targets and implementing education objectives, while greater involvement is also essential. In seeking "equal opportunities", Czech and Slovak education policy endeavours to create such support measures and compensatory procedures which can help to balance out difference in education chances. In our research project, we have endeavoured to utilise the tool of comparative analysis in our two selected countries which have not just the common features of history, social stratification and similar development genesis, but in particular social problems and the social protection system set up. In analysing and subsequently comparing specific documents and strategies at a national level, programmes and projects, we have endeavoured to find common and different integration tools which the education and political system in both countries are striving to achieve, and which through implementing they aim to balance out the chances for disadvantaged Roma pupils, thus increasing their chances for professional and social participation within society.

Keywords: *Roma minority, social policy, education.*

TEACHING AND LEARNING

TEACHERS' EDUCATIONAL AND MISBEHAVIOR MANAGEMENT STRATEGIES IN WORKING WITH PRIMARY SCHOOL STUDENTS WITH ATTENTION DEFICITS

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Abstract

Children with attention deficits are usually integrated in regular primary school classes in Croatia, without any special educational treatment nor interventions. Teachers, whose primary education does not include educational methods for working with children with developmental disabilities or procedures of inclusion of such children in regular classes, must do their best to be successful in education and integration of this specific group of children.

The main objective of this research was to determine the differences in use of educational strategies (upbringing and teaching) and misbehavior management (positive and negative) among primary school teachers working with children with attention deficits in respect of their gender, level of education, years of work experience and whether they teach in lower or upper grades of primary school.

The research covered 31 primary schools from 3 counties of the eastern part of the Republic of Croatia. Participants were teachers (N=103) teaching in lower grades (from 1st to 4th) (51%), and in higher grades (from 5th to 8th) (49%) of primary schools. 12.8% of them were male and 87.2% female teachers. Teachers gave estimations for their students who had attention deficits (N=305), 85.6% (N=261) were male and 14.4% (N=44) were female students. The age span of estimated students was 7 to 15 years, and the average age was 10.69 years (SD=2.26). Teachers filled out the Educational desirable behavior-oriented strategy scale (upbringing and teaching subscales) and the Scale of misbehavior management strategy (positive and negative discipline subscales).

The results implicate that teachers in the lower grades of primary school use more positive disciplinary strategy than teachers in the higher grades of primary school. The results of the research have shown that teachers working with children having attention deficits more often use the educational strategy of upbringing than teaching. Teachers from lower grades of primary school and also female teachers more often used the educational strategy of upbringing. As in Croatia formal education for primary school teachers teaching in lower grades of primary school differ from the education for teachers teaching in higher grades of primary school, it can be concluded that teachers in lower grades of primary schools are more sensitive and better educated for working with children with attention deficits.

Keywords: Attention deficit, educational methods, discipline, teachers.

EFFECTIVE PROGRESSION MANAGEMENT WITHIN VERY LARGE CLASSES IN COMPUTER SCIENCE EDUCATION

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Abstract

For some students, attaining the programming skills required to become an effective software engineer can be a difficult process. The initial steps taken in this journey are critical for success, but in all too many cases, lack of early engagement leads to a high attrition rate across associated education programs. Against the background of ever increasing class sizes, this work focuses on novice programmers enrolled on a software engineering degree program and considers how group activities, peer mentoring and self-assessment, can positively influence retention rate and performance.

Keywords: Active research, computer science education.

THE IMPACT OF READING COMPREHENSION ON MATHEMATICS WORD PROBLEM SOLVING

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Abstract

Word problem constitutes an important part of the mathematics curriculum of the elementary school. Different studies have argued that the understanding of the problem is the most difficult part for students, because of the lack of understanding of the 'keywords' used in the problem contexts. Thus, because the process of word problem solving is related to reading comprehension, as a most important factor in this study it was examined the impact of reading comprehension for improving student's skills for mathematics word problem-solving. Participants in the study were fifty-fourth-grade students and their teachers. The methodology of the study is the collaborative action research. The researchers (authors) have worked together with two class teachers and have used the Reciprocal Teaching method as an intervention for eight weeks aimed to improve the student's skills for reading comprehension. The Reciprocal Teaching method includes prediction, clarifying, questioning and summarizing strategies. The data collection instruments used in this study were teachers' reflections and pre and post-test. The results from this study show that the improvement of student's skills for reading comprehension has a positive impact on the improvement of student's skills for mathematics word problem-solving.

Keywords: *Mathematical word problems, reading comprehension, reading strategies, reciprocal teaching.*

USING ARTISTIC ILLUSTRATION TO COMMUNICATE ABSTRACT AND INVISIBLE IDEAS IN THE SOFTWARE ENGINEERING DOMAIN

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Abstract

Computer software is invisible and the discipline of software engineering includes a number of complex abstract concepts which are near impossible to visualize. We educate learners in a variety of ways using metaphor and comparative example but often people need to see the problem before they can understand even the need for a solution. To this end a set of illustrations have been created using the metaphor of bridge engineering to help beginners in software engineering to understand the fundamental problems of coping with changing requirements and evolving systems. These, along with the narrative they describe, are presented as an example of one possible approach to making software engineering more accessible.

Keywords: *Software engineering, art, illustration, science communication.*

EXPLORING THE SOUTH AFRICAN PHYSICAL SCIENCES PRE-SERVICE TEACHERS PEDAGOGICAL ORIENTATIONS

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Abstract

The most essential aspect of teacher education is to attain different way of teaching science for learner's conceptual understanding. However, in most South African universities, science methodology modules do not fully expose pre-service teachers to different science teaching approaches. In these modules,

pre-service teachers often are exposed to readings materials, observing one another in microteaching or create lesson plans for assessment purposes. To teach science effectively, teachers are encouraged to possess a good content knowledge and knowledge of how to translate content knowledge into appropriate teaching ways for specific topic. The study investigates physical science pre-service teacher's pedagogical orientations in one of the South African universities. The phrase 'orientation' refers to teachers' knowledge and beliefs for teaching science. Literature shows various classifications of pedagogical orientations. Based on research conducted in South Africa, orientations are classified into two approaches, namely direct approaches divided into direct didactic and direct interactive and a second approach is an inquiry approach divided into guided inquiry and open discovery. A qualitative method approach was adopted to obtain teachers pedagogical orientations using a questionnaire from the University of Western Michigan. The questionnaire comprised of 10 items and each item has four alternative teaching methods, students were requested to select the most appropriate and the most inappropriate options. For this paper, only the most appropriate teaching orientations were analysed and only two items were analysed, physics and a chemistry item. A descriptive statistics analysis was used. We then calculated a percentage distribution to the four teaching orientations. For calculation purpose, we arbitrarily ordered the spectrum of orientations along a scale of 1–4, where 1= didactic direct; 2 = direct interactive; 3 = guided inquiry and 4 = open inquiry. The results show that pre-service teachers exhibited a preference for learner-centered teaching method, which is centered within guided inquiry for both items.

Keywords: *Pedagogical orientation, pre-service teachers, inquiry-base.*

A COLLABORATIVE LEARNING PLATFORM TO ASSESS THE USE OF AGILE METHODOLOGIES IN ENGINEERING STUDIES

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Abstract

The success of using agile methodologies for collaborative work in industry, has led to adopt these methodologies for teaching Software Engineering. The curricula has evolved in recent years in order to introduce the use of agile development, so that the students practice their use and train the required skills for project-based collaborative work. Agile methodologies are characterized by being iterative and incremental, with short cycles, constant deliveries and a high level of interaction among team members. These characteristics constitute a challenge for educators and students since, in short periods of time, it is necessary to evaluate and provide feedback to individual and group work, regarding aspects like methodology usage, tools management, and collaboration within the team. For that reason, a Computer Supported Collaborative Learning (CSCL) environment has been developed to assist academics in evaluating and providing feedback to students. The CSCL environment is based on the collaborative platform GitLab, which has been adapted to implement concepts associated to SCRUM, an agile methodology widely adopted. Additionally, the use of GitLab allows to automatically collect information regarding individual and team work of students. Using GitLab data collected, a Learning Analytics platform has been developed in order to analyse group and individual work during the execution of student projects using SCRUM. The objective is to determine if SCRUM helps students to elaborate better software, by evaluating methodology adoption and quality of the resulting software. A prototype of the platform was developed and used in a Software Engineering undergrad course at a Spanish University, in which 79 students divided into groups of 3-4 people, developed two independent projects. Preliminary results show that the proposed CSCL environment helps in providing insight for evaluating and giving feedback to students. Additionally, the data collected by the CSCL environment showed a good correlation of SCRUM adoption by students and quality of resulting software.

Keywords: *Collaborative learning, Learning analytics, Undergraduates, SCRUM methodology, Gitlab, software.*

PROPOSITIONAL LOGIC WORD PROBLEMS AND MS EXCEL AT PRIMARY AND SECONDARY EDUCATION

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Abstract

It seems that propositional logic word problems are interesting for pupils aged 9 to 16 years. Younger pupils usually solve the propositional logic word problems by means of the systematic analysis of possible cases. In this way they significantly develop their combinatorial skills.

Nevertheless, we can solve the propositional logic word problems almost automatically using logical connectives and truth tables. Moreover, there are software applications for solving problems of mathematical logic. For example, MS Excel can help to work with the truth table.

We carried out research with the aid of a questionnaire to find out the preparedness of prospective elementary teachers to use MS Excel for solving propositional logic word problems.

In our paper we show some examples of propositional logic word problems for pupils of different ages. In our opinion, using MS Excel for solving propositional logic word problems can make such word problems even more attractive.

Keywords: *Propositional logic, word problems, MS Excel.*

STUDENTS' PERCEPTIONS, PROCESS AND PRODUCT IN A CSCL EXPERIENCE

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Abstract

Following up students' progress in collaborative activities is a crucial element in the teaching task if we want to properly scaffold learning and assess students' performance. Considering this, a Computer Supported Collaborative Learning (CSCL) environment was created in the subject Middleware, devoted to the development of collaborative software projects delivered to undergraduates from Computer Engineering in a Spanish university. Students (n= 46) were asked to work in teams using the SCRUM methodology and the GitLab software. In order to analyse their individual performance, a Learning Analytics platform was created and an online survey was designed to complement the results obtained collecting students' perceptions. One of the aims in our project was to explore the relationships between students' outcomes and their perceptions about teamwork and the tools used. Specifically, we analysed the relationship between students' final mark, students' perceptions of teamwork and their SCRUM competence. Their sense of flow during the collaborative activity was measured as well. Results show correlations among these variables. Further discussion is provided around the students' perceptions as a key aspect for understanding students' behaviour and performance.

Keywords: *Computer supported collaborative learning (CSCL), undergraduates, perceptions, collaboration, teamwork.*

INTERACTION BETWEEN TEACHER AND PUPIL AND ITS INFLUENCE ON THE PERCEIVED CLOSENESS OF PUPILS

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Abstract

The paper deals with the relationship between teacher and pupil in a school environment. The first part is focused on the theoretical framework which defines the specifics of the asymmetric interaction between the two main subjects of the education process. Research of the teacher's immediacy and perceived closeness is evaluated in this context. These are important aspects that seem to be directly reflected in student's learning and the classroom climate. The second part presents the results of a qualitative study which aimed to analyze the interactions in the relationship between teacher and pupil, their impact and influence on the perceived closeness of pupils. Narrative interviews with humanities students and their analysis identified several aspects in the relationship between teacher and pupil. It seems that relations with teachers are reflected in students' lives and their attitudes towards themselves, authority and education.

Keywords: *Perceived closeness, pupil, relationship, school environment, teacher immediacy.*

ORGANIZATIONAL ISSUES

MEDIATION AND CONCILIATION AS APPROPRIATE METHODS OF CONFLICT RESOLUTION (MASCs) FOR THE PROMOTION OF ACCESS TO JUSTICE AND CULTURE OF PEACE

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Abstract

In this study, we analyze mediation and conciliation as appropriate methods of resolving conflicts for the realization of access to justice and the construction of a culture of peace. The interest in this study arose from the observance of the social mobilization and the Brazilian public power in implementing mechanisms for resolving appropriate, effective and efficient conflicts. In the year 2013, the Justice in Numbers Report, of 2015, indicated the total number of 95.1 million processes in the Brazilian courts, and this number, according to projections, can reach the brand of 114.5 million in 2020. Thus, the Judiciary instituted the National Judicial Policy for appropriate treatment of conflicts (Resolution No. 125/2010, BRAZIL, 2010) as a way to consolidate a permanent policy of incentive and improvement of the mechanisms Autocompositive. The Problem of this research is to ask how mediation and conciliation as conflict resolution techniques have been employed in the Brazilian legal system and to investigate how these techniques have been constituted and effective as a public policy for the Access to justice. To this end, a bibliographic research is carried out on the conceptions of conflict, mediations and Appropriate Methods of conflict Resolution and analyzed how these guidelines have permeated the Brazilian public policies of access to justice and the promotion of the culture of peace. The Judicial Centers for Conflict Resolution (CEJUSCS), which are units of self-composition in the judicial system, were also investigated with the objective of knowing the structure, organization, functioning and implementation of these centers. They were also examined as mediators and conciliators have been trained to act in the judiciary. O theoretical framework is based on Cappelletti and Garth and Kazuo Watanabe, as regards access to justice and fair legal order in search of a socially just and equitable society. The analyses indicated that mediation and conciliation are instruments that were incorporated into the Brazilian Judiciary for the realization of access to justice and social pacification and because it is understood that the judicial function is not restricted to a decision imposed by the judge to the extent that it also seeks to promote mechanisms that allow access to justice, by means of non-heteronomous.

Keywords: *Conflict, mediation, conciliation, justice.*

THE BRAZILIAN HIGHER EDUCATION: THE UNDERGRADUATE COURSES IN LIGHT OF ITS RECENT POLICIES

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Abstract

Higher Education has been considered of unprecedented relevance when it comes to the effects of globalization on countries as they are responsible for people's training and knowledge generation. HEIs cannot avoid the inevitable global environment, as they are more exposed to the inequalities among the best-internationalized institutions as part of the world system of Higher Education. Despite, they continue to be confronted with some challenges as access, equity, quality and relevance. The Higher Education System in Brazil is the most extensive higher education system and the one who has relied the most on the private for-profit sector among the Latin America countries, and its university governance has assumed characteristics that you do not necessarily see elsewhere. Thus, this research addresses a significant gap: the limited studies considering the context of the HEIs in developing countries. Based on this context, this paper proposes to present an overview of the Brazilian Higher Education to discuss its characteristics, based on the literature review, and to analyze the data of the undergraduate courses, from

2010 to 2015, organized according to the OECD main areas and based on the Higher Education Census microdata. It intends to contribute to a more strategic view concerning the offer conditions of the HEIs, identifying its most recent trends and challenges. We adopted an exploratory and descriptive research methodology and followed an inductive approach to a quantitative research strategy. We used an artificial type of Neural Network (ANN), the Self-Organizing Map (SOM) technique, as a *method of data analysis*, as it mapped data in an easily interpreted form, capable of organizing large, complex datasets robustly and reliably. The main conclusions of the paper were that students have access to the tertiary level of study, mainly in science and engineering fields, areas of preference among abroad students. In Brazil, the findings pointed out the opposite, as the Brazilian Higher Education was concentrated mainly in Education and Social Sciences, Business and Law areas.

Keywords: *Knowledge discovery, higher education, higher education institutions, self-organizing map.*

The background features a vertical color gradient from light green at the top to light blue at the bottom. Overlaid on this is a network of white lines forming irregular polygons, with a fine grid of small white dots. The word "WORKSHOPS" is centered in a bold, dark blue font.

WORKSHOPS

TEACHERS AND STUDENTS

EFFECTIVE INSTRUCTION IN VIRTUAL HIGHER EDUCATION: ENSURING COGNITIVE, SOCIAL, & TEACHING PRESENCE

Sandra M. Rebeor, Michelle L. Rosser-Majors, Christine L. McMahon, Stephanie L. Anderson, Yolanda Harper, & Laura J. Sliwinski

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Abstract

Considerable research on effective instruction in the classroom exists. Yet, very little is known about the extent to which instructor presence (cognitive, social, and teaching) is related to effective online instruction. Low attrition rates and high retention, engagement, as well as student- and instructor- success rates are critical aspects of an effective virtual classroom and program of study. However, without adequate cognitive, social, and teaching presence in the online classroom, student- and program- success rates likely suffer. This workshop is designed to improve participants' knowledge of these constructs and share tools, as well as tips, for successful implementation. Armed with this knowledge, participants will be able to design and instruct online courses integrating best practices in cognitive, social, and teaching presence in order to bring their teaching to the next "level" in terms of effectiveness and enjoyment for students and instructors alike. Key points of this workshop entail a literature review, definitions and examples of cognitive, social, and teaching presence, tools and tips for integration, effectiveness highlights, presenters' experiences with design and teaching aspects, and participants' experiences, concluding with Q&A. This session will be conducted by full-time university faculty members who played an integral part in the design of seven self-paced instructor presence modules, which were disseminated to all faculty members aligned with the College of Health, Human Services, and Science at Ashford University. Following the lecture portion of this workshop, participants will be encouraged to exchange experiences and ask questions. This workshop is intended for faculty, course developers, and leaders of educational institutions with online course offerings. There is no limit for the number of participants.

Keywords: *Instructor presence, cognitive presence, social presence, teaching presence, instructor effectiveness.*

A GUIDED DISCUSSION ON USING GRADES AND WITHDRAWALS AS EVALUATION MEASURES OF COURSES AND INSTRUCTION

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Abstract

Colleges in the United States use grades and withdrawal statistics to draw conclusions about courses and instructors. Yet, there is a lack of rigorous research in this area. Focusing on this data point is reductive and fails to consider student accountability and life circumstances. For student success and retention, it is important to fully understand what the data implies. During this guided discussion workshop, participants will exchange and compare ideas, experiences, teaching philosophies, and institutional expectations; and will gain international perspectives on using grades and course withdrawals as assessment measures of courses and instruction.

Keywords: *Higher education, instructor and course evaluation, student success, grades, withdrawal.*

PROJECTS AND TRENDS

CULTIVATING SELF-BELIEF IN STUDENTS

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Abstract

The two presenters have very different backgrounds. Gavin Jinks is a senior lecturer in social work. Denise Harber has been a teacher, head-teacher and school adviser. Both have concluded that the ability to create self-belief in a student group, be they primary school pupils or students in higher education, is fundamental to their achievements. Gavin has been the project leader for an award winning student mentoring project on the BA Applied Social Work at the University of Derby. Denise Harber was an adviser on a team that designated a primary school in the south of England as a 'cause for concern'. She then took on the role of Head-teacher and led the school to be designated as good in a subsequent Ofsted inspection. Underpinning both of these pieces of work was a commitment to develop the self-belief of the students. This was seen as being a fundamental building block in bringing about real change in the achievements of both the students and the pupils concerned. This workshop will explore how Gavin and Denise went about these pieces of work. They will explore the transferability of these ideas to other educational settings and situations, particularly settings with traditionally low academic engagement. They will also be encouraging participants to consider how it might be possible for them to cultivate a culture of self-belief in their own students/pupils.

Keywords: Self-belief, cultivate, develop, fundamental, create, engagement.

SMOOTH TRANSITIONS: ASSESSMENT AND ADVANCEMENT OF LEVEL 2 WRITING STUDENTS AT HOUSTON COMMUNITY COLLEGE

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Abstract

Houston Community College's Intensive English program was started by Maria Bazan-Myrick in 2012 and operates at nine campuses around Houston that sometimes educate upwards of 12,000 ESL learners per academic year. It consists of five levels, the first three of which (Intro, Level 1, and Level 2) are taught by Continuing Education-Languages instructors. The program received the Exemplary Program Award from the National Council for Continuing Education & Training in 2013, and was awarded for being the top performer at HCC in 2017. Ongoing assessment of both students and the practices of the program has been vital to its success, and the idea for this workshop originated from a student learning objective (SLO) data analysis of students who took Level 2 courses during the Summer 2018 semester. The purpose of this workshop is to foster discussion about building a strong writing foundation in an ESL curriculum. By the end of this workshop, participants will be able address questions about how to build the curriculum, how to meaningfully assess student performance, and how to promote development of students' writing skills.

Keywords: Writing, evaluation, data analysis, ESL.

STUDENT ENGAGEMENT: A MULTIDIMENSIONAL PERSPECTIVE

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Abstract

1. *Purpose:* I will present a multidimensional model (Groccia, 2018) that expands the definition and application of student engagement in higher education and discusses the increasingly important need for engaging today's university student.

2. *Background:* The concept of student engagement has played an increasingly significant role in US efforts to understand and improve university student learning and persistence as well as overall institutional quality. The National Survey of Student Engagement (NSSE) has become a major instrument to assess institutional quality.

3. *Key points:* The impact of student engagement in learning, teaching and research as well as with faculty, community and other students is explored and suggestions are provided as to how the entire academic community can support these activities. This presentation demonstrates that student engagement is a *shared responsibility* involving virtually all members of the academic community—teachers, administrators, staff, and other students—as well as individuals involved in partnerships with entities within the larger community in which the institution resides.

4. *Procedure / Methodology:* The workshop will provide a basic description of student engagement using PowerPoint, then participants in small groups will be directed to develop learning activities within each dimension of student engagement. There will be time for teachers, staff, and administrators to discuss how opportunities for this multidimensional view of student engagement can be created and supported on each of our campuses.

5. *Description of the participants:* Intended participants include academic staff and administrators. Maximum number = 50.

Keywords: *Student engagement.*

AUTHOR INDEX

Abbate, E.	40	Brandão, A.	6
Aguirre, A.	41	Brevi, F.	124
Aletra, V.	104	Briones, E.	76
Allen, A.	109, 117	Bruyninckx, M.	83, 88
Allix, P.	88, 99	Bubnys, R.	16, 91
Alonso, F.	102	Bujdosó, G.	19
Alvarez, J.	90	Cabeza-Ruiz, R.	20, 94
Alves, J.	37, 59	Carballo, R.	94
Alves, S.	23, 72	Camilleri, L.	3
Amurrio, J.	32	Cardoso, A.	91
Anderson, N.	109, 117, 127	Cardoso, J.	11
Anderson, S.	135	Carranza Alcántar, M.	22, 24
Andreou, L.-V.	104	Carrasquer, B.	115
Andrieu, G.	34	Caruana, M.	3
Andrić, B.	73	Castonguay, A.	95
Aotani, N.	87, 96	Castro, M.	34
Aranyi, F.	19	Castro-Garcia, D.	17
Arcidiacono, F.	48	Cauchie, D.	83, 88
Arimoto, M.	64, 87, 110	Celi, M.	124
Armah, J.	121	Cerrato, M.	128, 129
Aruvee, E.	96	Chang, J.-C.	82, 98
Ataíde, A.	35	Chen, S.-C.	82, 98
Athanasopoulou, G.	104	Chen, D.-C.	82, 98
Austin, B.	135	Cheng, C.-M.	83
Awah, I.	67	Chezan, L.	81
Azzopardi, C.	45	Chiner, E.	117
Azzopardi, M.	45	Chodzkiènè, L.	56
Babić, V.	78	Choi, R.	111
Bae, S.	89, 100	Chou, C.-M.	98
Balvín, J.	125	Chung, K.-S.	57, 102
Baratè, A.	125	Chunyan, Z.	82
Barbosa, A.	59	Cieciora, M.	72
Bayat, A.	3	Collins, M.	109, 117, 127
Bernal-Perez, S.	63	Cortés-Vega, M.	41
Bertelsen, C.	84	Cosgrove, T.	127
Besnard, C.	60	Costa, C.	97
Beutel, D.	9	Costa, I.	64
Blanco-López, Á.	102	Cotán-Fernández, A.	94
Blašková, H.	101	Cumino, C.	68
Bodart, M.	83	Cutting, D.	109, 117, 127
Boileau, R.	53, 98	D'Arcy-Warmington, A.	15
Børgesen, M.	31	Dan, A.	22
Boudreau, F.	95	Daukilas, S.	81
Boysen, M.	31	de Balugera, Z.	32

De Blasis, M.	55	Gallastegui, G.	32, 90
de Campos, S.	131	Gámiz-González, M.	63, 103
De Guzman, R.	113	García-Cabrera, L.	58
de Jager, T.	11	García-Cano, M.	71
De Nunzio, M.	27	García-Ponce, Á.	102
De Pietro, O.	84	Garcia-Sanchez, T.	63, 103
de Sena, G.	121	Gater, D.	50
DeLong, M.	57	Gericota, M.	34
Deris, A.	95	Germansen, M.	31
Djiki, S.	95	Geunis, L.	25
Dodig, M.	38	Gilabert, A.	122, 123
Doménech, A.	41	Gillespie, A.	33
Donderis, V.	63	Glaude-Roy, J.	50, 85
Downing, S.	85	Gögele, S.	13
Dubovicki, S.	48	Gómez-Puerta, M.	117, 121
Dugas, C.	86	Gómez-Tejedor, J.	63, 103
Dupuy, B.	98	González, B.	22
Dutrieux, M.	88	González-Yubero, S.	61, 62
Eden, D.	74	Göttlichová, M.	84
Elkabas, C.	33	Gow, A.	8
Erlendsdóttir, G.	6	Groccia, J.	33, 137
Estévez, I.	65, 93	Grüttner, P.	14
Facca, C.	59	Guerra, M.	97
Fafner, G.	103	Gutierrez, J.	32, 90
Falconer, D.	51	Gwekwerere, Y.	55
Fazeli, Z.	112	Gynnild, V.	17
Fernandes, A.	37	Halim, L.	50
Fernández-Fuertes, A.	76	Hamdorf, J.	51
Fernández-Rouco, N.	76	Hanna, P.	126
Ferreira, P.	34	Haralanova, V.	103
Fett, A.	14	Harber, D.	136
Fidalgo, A.	34	Harkins, S.	118
Finková, D.	120	Harper, Y.	135
Fiorucci, A.	13, 27, 30	Hatami, J.	3
Flekačová, L.	120	Haus, G.	125
Fojcik, M.	23	Henriques, A.	59
Fojcik, M.	23	Henriques, R.	131
Folha, D.	64	Hestbech, A.	31
Fornieles, R.	118	Hlouskova, J.	47
Framiñán, A.	124	Ho, C.	37
Framiñán, B.	124	Holz, O.	25
Franco Casillas, S.	24	Hong, D.	82
Fresneda-Portillo, C.	15, 51	Howell, B.	26
Gadais, T.	53, 98	Hoxha, E.	120
Gaetani, F.	124	Hsiao, H.-C.	82, 98
Gajdošíková, P.	97	Hsieh, P.-J.	10

Hu, J.	106	Lanoë, C.	88, 99
Huljev, A.	70	Lavallée, E.	86, 95
Humble, N.	116	Lavin, R.	52
Hung, W.	37	Lavoie, N.	99
Hung, S.-Y.	54	Lázaro, S.	76
Iacobescu, G.-E.	88	Lázaro-Visa, S.	61, 62
Iazzolino, P.	84	Leonidou, P.	39
Ibitian, M.	20	Li, C.-H.	10, 26, 54
Ilavská, L.	125	Li, J.-S.	90
Imbernon, R.	62	Lima, D.	62
Isakovic, A.	50	Ling, S.	50
Ishida, Y.	43	Liu, M.	38
Ishimori, H.	87	Lledó, A.	122, 123
Ishizuka, H.	10	Londoño-Vásquez, D.	60
Islas Torres, C.	22, 24	Lopes, J.	81
Ito, Y.	86	López, J.	90
Iwayama, A.	86	López-Gavira, R.	94
Jenny, E.	48	Lorenzo, A.	122, 123
Jiménez Millán, A.	71	Lorenzo, G.	122, 123
Jiménez Padilla, A.	22, 24	Løth, K.	31
Jinks, G.	136	Lubin, A.	88, 99
Johnson, J.	12	Ludovico, L.	125
Jónsdóttir, S.	6	Lugthart, S.	31
Ju, Y.-J.	26	Macdonald, A.	6
Juanes, J.	124	Maciel, M.	22
Kajee, L.	78	Macy, M.	12
Kalaitzi, C.	46	Mangafa, C.	42
Kaminskiene, J.	96	Marcant, M.-D.	39
Kartasidou, L.	39	Marin, J.	99
Kasimatis, K.	19	Marinac, A.	73
Kerr, R.	43	Márquez, C.	20
Kim, D.	111	Marsano, M.	28
Kim, J.-Y.	102	Martínez-Poveda, B.	102
Klepp, S.	38	Mason, J.	33
Ko, K.	113	Matsuba, R.	43
Kotyla, C.	93	Matušů, R.	130
Kovačević, I.	126	Mavuru, L.	111, 113, 114
Kulenovic, E.	52	McCain, D.	136
Kuo, B.-C.	26, 90	McDowell, A.	109, 117, 126, 127
Kurshumlia, R.	120, 127	McMahon, C.	135
Lachance, E.	95	Medina, M.	102
Ladd, N.	67	Melero, N.	20
Lai, M.	47	Melero-Pérez, P.	121
Laitochová, J.	129	Meng, X.	106
Lamb, M.	36	Merciai, I.	43
Landry-Meyer, L.	89, 100	Meseguer-Dueñas, J.	63, 103

Mesić, J.	89	Palomera, R.	61, 62, 76
Meškauskienė, A.	74	Papageorgiou, T.	19
Mesquita, L.	121	Park, H.-	111, 112
Metcalfe, H.	51	Park, H.-K.	102
Mihai, M.	25	Paşnicu, D.	105
Million, A.	38	Pastor, K.	129
Miralles, I.	16	Pavelka, J.	34
Miranda, V.	131	Peet, S.	84, 89, 100
Mlinarević, V.	70	Pena, C.	136
Mokhothu, K.	18	Penn, M.	122
Molina, V.	20	Pereira, A.	35
Molina-Mateo, J.	63, 103	Pereira, C.	62
Monteiro, M.	64	Perera, H.	41
Monteiro, M.	121	Pérez, E.	122, 123
Montesano, L.	84	Pětiletá, P.	105
Morais, C.	29, 58	Phindane, P.	71
Morais, E.	29, 58	Piñeiro, I.	65
Moreira, E.	64	Pinnelli, S.	27, 30, 40
Moreno Warleta, G.	77	Pinto, A.	48
Morgado, B.	20	Pires, F.	64
Moriña, A.	41	Pollen, B.	23
Mozelius, P.	116	Pomponi, M.	75
Mtika, P.	6	Ponz, A.	115
Muniz Junior, J.	121	Psarropoulou, C.	104
Nakano, S.	92	Quendler, E.	36
Němejc, K.	69	Ramaila, S.	113, 114
Nemet, M.	4	Ramírez-Botero, A.	60
Neto, B.	37	Ramnarain, U.	127
Newbury, K.	84	Ramos, R.	113
Nirmala, K.	66	Rampérez, V.	128, 129
Nishizuka, K.	110	Rangel, B.	37
Nocar, D.	129	Rebek, C.	30
Noroozi, O.	3	Rebeor, S.	135
Nottis, K.	67	Recine, K.	67
Novac, M.	19	Reddy, L.	114, 116
Novac, O.	19	Regnier, M.	88
Oliveira, A.	121	Regueiro, B.	65, 93
Olarte Dussán, F.	17	Reis, R.	64
Oliveira, C.	81	Ribeiro, T.	62, 91
Oliveira, D.	8	Riera, J.	63, 103
Onishi, A.	10	Říhová, K.	101
Orozco, I.	94	Rimkuvienė, D.	81, 96
Ota, C.	119	Rioux, M.-A.	53
Oweini, A.	20	Rivard, M.-C.	86, 95
Pagani, E.	125	Roberge, G.	55
Paiva, J.	29, 58	Rodrigues, A.	8

Rodríguez, A.	102	Sousa, A.	49
Rodríguez, F.	128, 129	Souto, I.	35
Rodríguez, S.	65, 93	Spinola-Elias, Y.	94
Rodríguez-Llorente, C.	93	Spooner-Lane, R.	9
Rónay, Z.	5	Šramová, B.	92
Rosser-Majors, M.	135	Sritrakarn, N.-O.	45
Rossi, S.	88, 99	Stafsnes, J.	23
Rozano Suplet, M.	77	Stan, R.	54
Ruyffelaert, A.	110	Staňková, I.	41, 125
Sabater, R.	63, 103	Stephens, A.	44, 76
Saffre, F.	50	Stephens, K.	76
Sage, P.	126, 127	Stewart, D.	126
Sagredo-Sánchez, L.	15	Stoloff, S.	50, 85
Salles, L.	131	Su, Y.	100
Sällvin, L.	116	Suárez, N.	65
Sanches-Ferreira, M.	23, 72	Svitlica, B.	89
Sánchez, M.	28, 48	Tabacu, L.	81
Sánchez-Díaz, N.	20	Takahashi, S.	87, 96
Sandoval, M.	41	Talaue, F.	37
Santaolalla, A.	32, 90	Tan, K.	37
Sapia, S.	84	Tangen, D.	9
Scarabottolo, N.	125	Tatar, N.	12, 27
Schmitz, A.	77	Teixeira, F.	8, 49, 97
Schütz, S.	14	Teo, C.	37
Şeker, M.	12, 27	Thabane, R.	66
Seloane, P.	113, 114	Theologou, K.	70
Seow, S.	37	Tomczyk, L.	9
Serrano, M.-A.	63, 103	Torrice, M.	71
Shehu, B.	120	Tort-Ausina, I.	103
Shelton, F.	53	Trnova, E.	36
Shih, S.-C.	90	Trudeau, F.	95
Silva, H.	64	Truong, D.	109
Silveira-Maia, M.	23, 72	Tsagdi, S.	70
Simić, M.	78	Tsai, P-L.	54
Slavković, M.	78	Tseng, H.	4
Sliwinski, L.	135	Udomprasert, P.	67
Slocum, A.	77	Umesh, R.	122
Smailes, J.	51	Valenti, A.	84
Smékalová, L.	69	Valle, A.	65, 93
Smolíková, M.	120	van Dartel, M.	31
Soldo, T.	89	van der Westhuizen, D.	121
Sondlo, A.	127	Vasconcelos, C.	62, 91
Songyan, W.	82	Vasconcelos, M.	91
Soriano, J.	128, 129	Velasco, M.	118
Sorrentino, C.	27, 29, 30	Velki, T.	4, 126
Šostar, M.	73	Venterová, L.	41

Vidaurre, A.	<i>63, 103</i>	Winstead, L.	<i>26</i>
Vieites, T.	<i>93</i>	Wizel, M.	<i>14</i>
Viguera, D.	<i>128, 129</i>	Wong, S.	<i>7</i>
Viguera, G.	<i>128, 129</i>	Wooldridge, D.	<i>84, 89, 100</i>
Vlah, N.	<i>126</i>	Wu, P.-C.	<i>26</i>
Vula, E.	<i>127</i>	Yin, L.	<i>73</i>
Wang, B.	<i>110</i>	Yoon, G.-J.	<i>57</i>
Watson, S.	<i>81</i>	Žemgulienė, A.	<i>56</i>
Weerathai, T.	<i>46</i>	Zhao, Y.	<i>48</i>