INTERNATIONAL CONFERENCE ON EDUCATION AND NEW DEVELOPMENTS

END

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MADEIRA ISLAND, PORTUGAL 18-20 JUNE

BOOK OF ABSTRACTS

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FOREWORD

Dear Colleagues,

We are delighted to welcome you to the International Conference on Education and New Developments 2022 - END 2022, held in Funchal, Madeira Island, Portugal, from 18 to 20 of June 2022.

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 2022 received 790 submissions, from more than 45 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 263 submissions (33% acceptance rate).

The conference also includes:
- One Keynote presentation by Prof. Dr. Alan Singer (Ph.D., Department of Teaching, Learning and Technology, Hofstra University, Hempstead, NY, USA).
- One Invited Talk by Prof. Dr. Elisa Bertolotti (Ph.D., Art & Design Department, University of Madeira; ID+ Research Unit; ITI/Larsys, Portugal) and Prof. Dr. Valentina Vezzani (Ph.D., Art & Design Department, University of Madeira; ID+ Research Unit; Paco Design Collaborative, Portugal).
We would like to express our gratitude to our invitees.

This year we also counted on the support of "Madeira Promotion Bureau", contributing to the success of the event and providing a pleasant experience to all END 2022 participants. We would like to thank the "Madeira Promotion Bureau" for welcoming END 2022 to its beautiful island.

This volume is composed by the abstracts of the International Conference on Education and New Developments (END 2022), 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 Counselling; 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

"WELCOME TO THE ANTHROPOCENE: TEACHING CLIMATE HISTORY – THERE IS NO PLANET B"

Dr. Alan Singer

Ph.D., Department of Teaching, Learning and Technology, Hofstra University, Hempstead, NY (USA)

Abstract

As climate transformation continues unabated because of human action and inaction, 2021 was a year of climate extremes. Levels of methane in the atmosphere increased by the largest amount since measurements began. The Arctic and Antarctic ices sheets and northern permafrost continued to melt and there were record wildfires across the globe. Meanwhile the burden of climate change falls hardest on the least developed economies that have the smallest carbon footprint and while scientific evidence of human caused climate change and the prospects for a catastrophic near future is overwhelming, climate denial supported by powerful financial fuel corporations stalls international action. Welcome to the Anthropocene. Climate cycles, both long and short-term are natural consequences of geological history, but there is no question that recent changes since the start of the Industrial revolution are caused by human action. A study of past climate changes provides scientific evidence to explain current transformations. It is questionable whether a globalized capitalist system or technological innovations can effectively address climate change. The debate in classrooms and the political realm should not be whether climate change is happening or how much it places human civilization at risk but over how societies and individuals must respond to stabilize climate and reverse the most damaging impacts.

Keywords: Climate change, environment, teaching, activism.

Biography

Dr. Alan Singer, Ph.D., is a social studies educator and historian in the Department of Teaching, Learning and Technology at Hofstra University, Long Island, New York. He is a former New York City high school teacher and regularly blogs on *Daily Kos* and other sites on educational and political issues. Dr. Singer is a graduate of the City College of New York and earned a Ph.D. in American history from Rutgers University. His most recent book is *Teaching Climate History: There is NO Planet B* (Routledge, 2022). In the book he traces the Earth's climate history looking at natural cycles and transitions to explain the science behind impact of human caused climate change during the Industrial Era and the threat of an impending climate catastrophe. Dr. Singer is also the author of is the author of *Education Flashpoints* (Routledge, 2014), *Teaching to Learn, Learning to Teach: A Handbook for Secondary School Teachers, 2nd edition* (Routledge, 2013), *Social Studies for Secondary Schools, 4th Edition* (Routledge, 2014), *Teaching Global History, 2nd Edition* (Routledge, 2020), *New York and Slavery, Time to Teach the Truth* (SUNY, 2008), and *New York's Grand Emancipation Jubilee* (SUNY, 2018). He is the co-author of *Supporting Civics Education with Student Activism* (Routledge, 2021).

INVITED TALK

LEARNING BY WALKING. EDUCATIONAL EXPERIENCES IN THE OUTDOORS TO DEVELOP A (DESIGN FOR) SUSTAINABILITY MINDSET

Dr. Elisa Bertolotti[1], & Dr. Valentina Vezzani[2]

[1]*Ph.D., Art & Design Department, University of Madeira; ID+ Research Unit; ITI/Larsys (Portugal)*
[2]*Ph.D., Art & Design Department, University of Madeira; ID+ Research Unit; Paco Design Collaborative (Portugal)*

Abstract

The island of Madeira is attracting an increasing number of tourists from all over the world who are drawn to it by the lush diversity of its natural subtropical landscapes and ecosystems. With the local economy focusing most of its investments on the tourism sector, the island's biodiversity is already being endangered due to the increasing pressure on the balance between the cohabitation of humans and other living species (Bertolotti & Vezzani, 2021). Islands like Madeira are vulnerable territories and, as such, require the application of new methods and tools to help them transition towards regenerative and distributive systems that would make local economic growth more sustainable and ethically just towards nature, communities and ecosystems.

This talk will share some of the learning experiences we have been developing since 2018 through several international design research actions on the island, and in our teaching at the BA in Design at the University of Madeira. These include a series of exercises structured to train the designer's ability to change perspective with a post-anthropocentric sensitivity (Braidotti, 2016; Puig Della Bellacasa, 2017; Escobar, 2018; Fuad-Luke, 2022). Living and working on a peripheral and island territory allows us to observe and reflect on the challenge of sustainability and sustainable development from an unique angle. From an island perspective it is easier to think about boundaries, and therefore to visualise the aspects of circularity, interrelation and interdependence (Borgnino, 2022). In the context of design education for sustainability we consider it to be fundamental to reflect on the complexity of interrelations that exist among different natural elements and ecosystems. For this reason, our methods are based on the idea of learning outdoors in contact with nature, and bringing together people from different disciplinary backgrounds to develop, through the action of walking, a shared consciousness about challenges to a specific landscape and its communities (human, plant and animal). Finally, the talk is an opportunity to reflect with the audience on some of the challenges we encounter as (design) educators trying to switch towards a more bio-inclusive approach that would allow future generations to contemplate and build a more sustainable and just world.

Biography

Elisa Bertolotti works with storytelling, the moving image, and communication design. With a PhD and postdoc from Politecnico di Milano, she is currently teaching at the University of Madeira, Portugal. She considers that listening, poetry, having fun and collaborative making, play a central role in her work. At this time, Elisa is experimenting with ways of changing points of view in design in a post anthropocentric perspective, through forms of collaboration with different disciplinary fields, and using walking and movement outdoors as ways of learning.

Valentina Vezzani has got a PhD in Design, and a MSc in Service Design. She is Assistant Professor in Design at University of Madeira and co-founder of Paco Design Collaborative. Her research and teaching interests are in the field of strategic design, service design, sustainable development, social innovation. She believes in collaboration and participation as fundamental tools to solve today's problems, and design as a creative approach to build communication bridges.

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NEW PERSPECTIVES ON THE ACQUISITION OF LANGUAGE SKILLS

Gina Aurora Necula
Dunarea de Jos University of Galati (Romania)

Abstract
Reading, writing, speaking and listening – the four foundational skills of language learning have been constantly reassessed over time. When we learn a new language, we firstly learn to listen**,** and read then speak, and finally write. Therefore, traditionally, we consider that the student first acquires skills of receiving the newly acquired language (listening and reading) and, later, skills of producing that language (speaking and writing), thus gradually turning from consuming a foreign language, to delivering it. Thus, language teachers insist on practicing all four language skills to ensure that both the spoken (listening and specking) and written (reading and writing) aspects of the language are developed at the same level. However, experiencing the pandemic with all the imposed major switches that needed to be done in education proved changes in the way communication skills are acquired under these specific circumstances. Our research, conducted with foreign students learning Romanian Language during the last academic year, made us understand that teachers need to adapt their teaching tools and cope with new challenges imposed by the reversal of the ratio between the volume of online or asynchronous activity and the onsite ones, according to the traditional model. At the same time, we need to consider the fact that both teachers and students have been forced to redefine and understand how public and private spheres interact during online courses. Nevertheless, through this article, our intentions are to analyze the way in which the students' perception on the way of learning foreign languages has changed due to new social imperatives that have tipped the scales in terms of acquiring oral communication skills to the detriment of written communication skills, but have also changed perspectives on other satellite skills needed for an effective communication such as cultural and social skills.

Keywords: Language skills, distractors, communion, private discourse, public discourse.

TEACHERS' MATHEMATICAL CONTENT KNOWLEDGE AND STUDENTS' PROGRESSION IN LEARNING OF FRACTION AND PROPORTION

Natalia Karlsson[1], & Wiggo Kilborn[2]
[1]*Department of Pedagogy and Didactics, Sodertorn University, Huddinge (Sweden)*
[2]*Faculty of Education, Gothenburg University, Gothenburg (Sweden)*

Abstract
Proportional reasoning causes considerable difficulty for students. One reason for this is, that a lack of basic understanding of fractions in earlier years, causes difficulties in the middle years. Moreover, learning of fractions and proportion is a long-term process and students encounter it continuously from grade 1 to 9. It is also difficult to teach, and teachers' mathematical content knowledge plays a crucial role in students' learning of mathematics. The purpose of this study is to analyse the effects of teaching, and the influence of teachers' mathematical content knowledge about fractions and proportion on students learning in progression from grade 4 and 5 to grade 8. The method contains pre- and post-tests for 86 students, classroom observations, checking students' written solutions and interviews of 35 selected students after the post-test. The intervention includes construction of educational materials (EM), teachers participating in seminars-training related to EM and teacher's implementation of EM. The EM contains tasks for students and a teachers' guide with aims and goals for teaching and a theoretical background. Tools for analysis were a methodological design, *Variation theory*, and a theoretical approach, *Mathematical Content Knowledge for Teaching*. In focus of the analysis was students learning in progression, related to variation and crucial aspects of learning. Findings from this study shows that teachers' mathematical content knowledge and their ability to identify the objects of learning and apply this in teaching is very important for students' learning and progression in their learning. Most students showed an ability to learn, but their performance was intimately linked to teachers' perception of the crucial aspects in teaching, and variation. Moreover, anomalies in students' perceptions of basic concepts caused obstacles in their learning. Some

anomalies seem to have followed students from middle School to grade 8. Finally, the study illustrated how anomalies arise if misconceptions are not noticed by teachers. The outcome of the study can explain more about crucial steps in teaching and learning of fraction and proportion. The study pay attention to challenges in mathematics teaching.

Keywords: Mathematical content knowledge, fraction and proportion, variation, progression and learning.

THE INTERNATIONAL PERSPECTIVES ON TEACHING AND LEARNING INITIATIVE: MOVING FORWARD FROM LESSONS LEARNED

Andrew Gillespie[1], James Groccia[2], Jennifer Mason[1], & Kalani Long[1]
[1]*Office of International Programs, Auburn University (USA)*
[2]*Department of Educational Foundations, Leadership, and Technology, Auburn University (USA)*

Abstract
Auburn University will share the goals, development process, program content, and outcomes of an innovative strategy promoting global learning and the development of faculty global competencies to adapt to the needs and demands of higher education in the 21st Century. Conducted in 2018 and 2021 (and planned again for 2023), The International Perspectives on University Teaching and Learning Symposium is 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-symposium 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. A special topic issue of the New Directions for Teaching and Learning journal entitled Global Perspectives on Higher Education Teaching and Learning was produced. This initiative represents a novel approach to supporting and developing all members of the academic community to expand their knowledge of pressing issues of global higher education including sustainability, access, quality, and impact.

Keywords: Faculty development, university teaching, symposium, global competencies.

COMPARISON OF BURNOUT LEVELS OF EDUCATORS/TEACHERS IN THE PRE-PANDEMIC AND PANDEMIC PERIODS OF COVID-19

Mónika Veronika Szigeti[1], & Barbara Di Blasio[2]
[1]*"Education and Society" Doctoral School of Education, University of Pécs (Hungary)*
[2]*Institute of Education, Hungarian University of Agricultural and Life Sciences (Hungary)*

Abstract
Evidence suggests that the mental health and psycho-psychopathological consequences of the COVID-19 pandemic in the general population include an increase in symptoms of anxiety and depression, addictive behaviors, and psychological distress (Osváth, 2021; Galea, Marchant & Lurie, 2020). The prevention and mitigation of negative effects require the development and application of general and specific methods that support mental hygiene. Psychological distress due to the epidemic affects the risk of burnout in helping professionals, as it significantly increases the level of emotional exhaustion and depersonalization and reduces the feeling of personal effectiveness (Mion et al, 2021).
At the 2021 International Conference on Education and New Developments, we presented our research, in which we involved the staff of the Somogy County Pedagogical Service, mainly special education teachers. The 116-person sample was conducted with a version of the Maslach Burnout Inventory developed for educators (Maslach Burnout Inventory-Educator's Survey) in the pre-COVID-19 pandemic period. In our presentation, we present the results of a survey conducted in December 2021 with a large proportion of the

study population. Based on our knowledge from the literature, we expected that the level of burnout would increase in the study population, despite the institution's mental hygiene and burnout prevention strategy, but our hypothesis was not confirmed. Subjects achieved the highest scores on the three subscales of the questionnaire in the emotional exhaustion subscale and the lowest scores on the depersonalization subscale in the present study. However, based on their answers to our question, 81% of respondents felt that the COVID-19 pandemic had a negative impact on their mental health.

Keywords: Burnout syndrome, COVID-19 pandemic, mental hygiene, burnout prevention and intervention by teachers.

EXPLORING SELECTED SETSWANA DRAMA TEXTS AS THE PRINCIPLE OF UBUNTU/BOTHO IN EDUCATIONAL CONTEXT

Bridget Mangwegape
Department of Languages and Social Sciences, Central University of Technology (South Africa)

Abstract
Talking about the importance of Ubuntu/Botho in any educational system "Authentic humanism consists in permitting the emergence of the awareness of full humanity, as a condition and as an obligation, as a situation and as a project". To inculcate a sense of values at schools, is intended to help young people achieve higher levels of moral judgement. This belief is that education does not exist simply to serve the market, but to serve society, and that means instilling in students a broad sense of values that can emerge only from a balanced exposure to the humanities as well as the sciences. Enriching the individual in this way is, by extension, enriching the society. This carries the involvement within the teaching and assessment of Setswana drama texts with third year (BEd) students. Ubuntu is a Nguni term while Botho is a Setswana term from the Southern African region that means a belief in a universal relationship of sharing that connects all humanity. The researcher takes note of the key element of Ubuntu/Botho, understood as "motho ke motho ka batho" (in Setswana). The English translation of this expression is "a human being is a human being because of other human beings". The participants in this study were 24 BEd students from the language department. The comprehensive analysis includes data gathered from students: peer observation and interviews. Text analysis was used to analyse and interpret qualitative data obtained through interviews and observations with the aim of investigating the principle of Ubuntu/Botho in the characters of the two drama texts and how could students apply Ubuntu/Botho in their teaching to illustrate each theme.

Keywords: Drama texts, principles of Ubuntu/Botho, Setswana, educational context.

EXTRACURRICULAR ACTIVITIES IN TEACHING ROMANIAN LANGUAGE AS A FOREIGN LANGUAGE

Georgiana Ciobotaru[1], & Nicoară Aurica[2]
[1]*Department of Socio-Humanities Sciences, Cross-Border Faculty, "Dunărea de Jos" University of Galati (Romania)*
[2]*PhD student, "Ion Creangă" State Pedagogical University of Chisinau (Moldova)*

Abstract
Teaching Romanian as a foreign language is a new and challenging field of activity in education in Romania, a field that is growing with the arrival in our country of many students from neighboring countries or as far away as possible, people belonging to other cultures, civilizations, ethnicities, religions, which bring with them their own mentality and vision of the world. Formal and curricular activities are important for language, morpho-syntactic acquisitions regarding the Romanian language, but for the student to develop optimally and to integrate in the new society in which he entered to continue his studies, it is necessary to implement extracurricular activities complementary to the others. These are meant to develop students other skills necessary to continue their studies in a new country in educational contexts different from those in their home country by interacting with both Romanians and other colleagues as foreign to the Romanian language and culture as them. The projects and activities of linguistic and cultural integration of foreign students are defining for the development of the intercultural communication competence that must be developed for them. This paper aims to highlight the impact that extracurricular activities in the field of

dramatic art contribute to the development of students both linguistically and from the perspective of expressing emotions, feelings in order to overcome the cultural blockages inherent in a foreign country.

Keywords: Acquisitions, cultures, extracurricular, linguistically, mentality.

EMPOWERING PRINCIPALS TO LEAD AND MANAGE PUBLIC SCHOOLS EFFECTIVELY IN THE 21ST CENTURY

Raj Mestry, & Pierre du Plessis
Department of Education Leadership and Management, Faculty of Education, University of Johannesburg (South Africa)

"Education is the most powerful weapon which you can use to change the world"
(Nelson Mandela, 1994)

Abstract
Globally, education systems have been affected by radical social, political and economic changes. Although school principals play a pivotal role in improving student learning and attaining educational outcomes, they work under strenuous conditions to deal with multifaceted transformational issues. Principals experience great difficulty in coping with numerous changes, partly because they are inadequately prepared for their leadership position, or simply lack the necessary skills, knowledge and attitudes to lead and manage schools effectively and efficiently. Fundamentally, principals should be empowered to effectively deal with challenges facing them in the 21st century. Using qualitative research, this study explored the importance of promoting a culture of professional development that will prepare principals to confront education challenges and obstacles facing them. Fifteen principals were selected to determine their perceptions and experiences of how they were prepared and professionally developed to lead and manage schools. Findings revealed that in South Africa, there is no formal preparation for aspiring or practicing principals taking on leadership and management positions, and very few in-service professional development programmes are available. There is a dire need for education authorities to introduce compulsory training and development programmes for aspiring and practicing school leaders to lead and manage their schools successfully.

Keywords: Change management, continuing professional development, curriculum leadership, instruction, principalship, professionalization, qualifications, training.

THE POWER OF PEER LEARNING: GROUP REFLECTION AS A MODEL FOR UNIVERSAL DESIGN FOR LEARNING (UDL)

Nicola Duffy[1], Shaun Ferns[1], Irene McGinn[1], Nigel Vahey[2], & Helen Williams[1]
[1]*School of Media, Technological University Dublin (Ireland)*
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Abstract
The challenges of developing a fully inclusive learning environment were brought to the fore through the shift to emergency remote teaching during the Covid-19 pandemic and served to highlight many of the inequalities and deficiencies of meeting learners' needs in traditional teaching practice. Fortunately, a framework exists to support the enhancement of this teaching space; **Universal Design for Learning** (UDL). UDL consists of a set of principles for curriculum development that aims to afford diverse learners equal opportunities to learn by providing more flexible and thus inclusive methods of teaching, learning and assessment. The three core principles of UDL include multiple means of engagement in learning, multiple means of representing information, and multiple means of expressing knowledge. This paper is focused on the present authors' collective learnings as a peer learning group of university educators participating in the Digital Badge for Universal Design in Teaching and Learning, accredited by Ireland's National Forum for the Enhancement of Teaching and Learning. We place particular emphasis upon the group's experiences implementing a UDL re-design of their teaching as part of the Digital Badge. Our analysis of this experience explores in detail each lecturer's reflective examination of their own teaching, learning and assessment practices; and the practical approaches taken to embedding UDL within these practices. It also considers the impact on the learners involved based on both quantitative and qualitative

feedback from practitioners and student cohorts while highlighting the importance of engaging in peer groups. Finally, it concludes with a consideration on how engagement with UDL will impact future teaching practice.

Keywords: Universal design for learning (UDL), peer learning, lifelong learning, group reflection, case studies.

SUBJECTIVITY AND SOCIAL RECOGNITION: THEORETICAL AND EMPIRICAL PERSPECTIVES ON THE VALUE OF NON-FORMAL EDUCATION FROM THE PERSPECTIVE OF YOUNG PEOPLE

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Abstract
Due to its principles of voluntariness and openness, and because of its diverse offer of experiential and subject-related educational opportunities, open youth work is increasingly seen as having a special potential in supporting the acquisition of key competences and life skills. But which educational opportunities are meant here and what form of education are we talking about here at all?
These are the questions addressed by the qualitative-reconstructive study "Educational Experiences in Non-formal Settings", which is being conducted at the Centre for Childhood and Youth Research (CCY) at the University of Luxembourg. The study examines the subjective educational experiences of young people in open youth work on the basis of ethnographic observations in youth centers, in problem-centered interviews and group discussions with young people as well as a supplementary quantitative survey.
The study is based on an understanding of education that follows the tradition of subject-scientific theory (v. Humboldt, Koller) as well as the recognition theory (Honneth) and discusses education with concepts of self-determination and maturity in dealing with social norms and routines. The starting point of this consideration is that education can be determined as the transformation of the relationship to the self and the world. It is also linked to the theoretical work of Albert Scherr (1996), who defines the development of self-awareness, self-esteem, self-determination and thus ultimately subjectivity as the central educational goals of youth work. Empirically, it is thus not primarily a matter of investigating processes of knowledge acquisition, but rather of describing "innovative moments in the development of individual ways of thinking and acting (Koller, 2018, p.112).
The results of the data analysis show a differentiated description of youth-related educational occasions and marks small-scale experiences of the appropriation of personal, social and everyday life references. They also highlight moments of expanding young people's ways of thinking, possibilities of action and dispositions in the context of open youth work. The high importance of social recognition as a basic prerequisite for educational processes (among the young people involved) becomes visible.

Keywords: Non-formal education, youth work, reconstructive social research, youth research, educational theory.

RECONFIGURING TEACHER EDUCATION IN SOUTH AFRICAN UNIVERSITIES TO ADDRESS LEARNER BEHAVIOURAL CONDUCTS IN SCHOOLS: CHANGED REALITY

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Abstract
The purpose of the paper is to argue for the need to reconfigure the training of Bachelor of Education Degree student teachers as a strategy to empower them in dealing with the changed reality in secondary schools. The purpose is achieved by looking at the relevancy of the education or training offered to undergraduate teacher trainee students at universities in Eastern Cape Province of South Africa regarding

learner behavioural problems being experienced in secondary schools. The paper was guided by a situated learning theory. The paper adopted a qualitative approach and a case study design. The study purposively selected 3 universities, 9 lecturers and 15 teacher trainees as participants. Data were collected through use of interviews and focus group discussions. Thematic frames were used to analyse data that were discussed concurrently with the findings. The study established a mismatch between how the teachers' training and actual reality in schools as a challenge that needs to be addressed. The implication drawn is that failure to move with speed to reconfigure the training of initial teacher education increases frustration and tension between teachers and learners. The paper concludes that the current way of training of teachers lacks reality of how teacher trainees should deal with learner behavioural problems in schools. Universities should redesign an initial teacher education programme that capacitates teacher trainees to handle and speak to the current generation of secondary school learners.

Keywords: Initial teacher, teacher education programme, learner behavioural conduct, school-based experience.

TEACHING AND LEARNING THE MULTIPLICATION TABLE BY USING MULTIPLICATIVE STRUCTURES: VARIATION AND CRUCIAL PATTERNS

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Abstract
This paper examines and analyzes how students learn multiplication tables, specifically the role of multiplicative structures and how these are used as students learn to master the tables. The analysis is performed in the context of the generalization process related to the teaching activity focusing students' perception of concepts. The theoretical approach applies Davydov's concept of theoretical generalization as perception-conception-elementary concept (PCE model) and Vergnaud's theory of multiplicative structures in three classes: mapping rule (MR), multiplicative comparison (MC), and Cartesian product (CP). For the methodological design, Marton's variation theory has been chosen.
This study includes two teachers and 40 students in two Year 3 classes, followed two years later by one teacher and 25 students in one Year 5 class. The analysis of the outcome is based on documented classroom observations, one-on-one interviews with students and teachers' reflections on students' learning outcomes. The conclusion of the study is that the generalization of multiplication is a difficult process for students, especially in the classes MC and PC, and one that sometimes results in challenges to identifying multiplicative situations and relating these to the multiplication tables. This illustrates that teaching activities and teachers' support are necessary conditions for students' learning. The study also shows that multiplicative structures can help students to find and systematize crucial patterns in the multiplication table, allowing them to learn the multiplication table in a more efficient and structured manner. During the one-on-one interviews, students actively searched for and found structures and solutions that did not come up during lessons. This shows that multiplicative structures are a suitable didactic tool for identifying patterns in multiplication tables, thereby facilitating learning other than by rote.

Keywords: Multiplicative structures, multiplication table, generalization, student's perception, elementary basic concepts.

STUDENT TEACHERS' PERCEPTIONS OF THE ASSESSMENT OF VIDEO-RECORDED LESSONS DURING TEACHING PRACTICE

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Abstract
Lecturers have not been able to go to schools where student teachers were placed for teaching practice, to physically sit in classrooms to observe and assess their lessons. This is due to Covid-19 lockdown

regulations in South Africa. For this reason, students were instructed to video-record their lessons, and submit them to lecturers for observation and assessment of their teaching competence. As a result of this unprecedented venture, the researchers sought to determine student teachers' perceptions of the video-recorded lessons, and the assessment thereof. A qualitative research approach was employed to carry out this study because the researchers intended to understand in-depth, the student teachers' views and perceptions regarding their video-assessed lessons. Individual interviews were conducted among a sample of 40 third-year students, which were purposefully selected. Collected data were analyzed by means of identification of patterns and themes. Findings revealed that most student teachers preferred video-recording their lessons and sending them to lecturers for assessment. They felt less nervous and anxious, and thus made fewer mistakes when it was just them and the learners in the classroom, as opposed to when the lecturer or mentor teacher sits in and observes them as they conduct lessons. However, they preferred mentor teacher/lecturer feedback over feedback from their peers. The study highlighted the need for a shift, from lecturers being physically present in the classroom to observe and assess student teachers' teaching competence, to assessing video-recorded lessons and providing students with feedback.

Keywords: Assessment, teaching practice, video-recorded lesson.

MORE THAN MEETS THE EYE: THINKING AND LEARNING MULTI-MODALLY WITH BLENDED TEXTS, HYBRIDITY IN ACTION

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Abstract
Blended texts, also referred to as hybrid texts, are engaging and can be utilized for instruction. These texts offer numerous potentials for learning across the curriculum (Bintz & Ciecierski, 2017) because of the opportunities they present for thinking and learning in critical and meaningful ways. According to Bintz and Ciecierski (2017), hybrid texts are a blend of narrative and informational text. Not mutually exclusive, hybrid text treats the narrative and informational texts as mutually supportive. From this perspective, readers can view literary and informational texts as symbiotic, not separate. This symbiosis builds on natural curiosity and functions as an opportunity for inquiry.
The purpose of this research was to push on the boundaries of previously defined hybrid texts to include multimodal texts as well as texts that are hybrid in composition style. Multimodal instruction extended beyond multimodal texts and included multimodal instruction as well as multimodal meaning making and publications. Multimodal instruction can lead to deeper, abstract thinking (Batchelor, 2018) as well as an expansion of content knowledge, greater understanding and interpretation of vocabulary, and support to deconstruct and rectify misinterpretations in specific content areas (Cappello & Walker, 2021). Additionally, this research explored how blended texts might be used in an interdisciplinary manner in connection with multimodal instructional techniques might influence thinking and learning,
The methodology for this research was grounded theory. Open-ended questionnaires, observations, interviews, journals, and multimodal artifacts served as data points throughout the study. To begin, the rationale behind the research will be presented. Next, the steps of the research, as well as the findings and discussion will be presented in a manner that can be considered for future curricular and instructional planning.

Keywords: Hybrid texts, blended texts, multi-modal, thinking critically.

A HUMAN RIGHTS CENTRED HISTORICAL APPROACH TO TEACHING SCIENCE FOR SOCIAL CHANGE

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Abstract
The COVID-19 pandemic brought to light uncomfortable realizations for science educators; it has become patently obvious how much confusion and misunderstanding there exist about basic scientific facts that could help one make informed decisions, from individual choices to policy making at all levels of

government. The extreme polarity in public and private discourses related to COVID-19 might be augmented by political views, economic interests and social media algorithms, but at the bottom of it all there is a lack of understanding of scientific concepts and of the nature of science, as well as its sociocultural and historical contexts. There is also a lot of skepticism about science and scientists. This skepticism is not completely out of place; historically, there are embarrassing large numbers of cases in which human rights were infringed in the name of advancements of scientific knowledge. There are also incredible contributions of science to upholding and improving human rights. Whereas scientific discoveries are presented by the media as noteworthy and celebrated, there is a lack of intentional exploration and meaningful discussion of the "ups and downs" of science throughout its history and across cultures in the context of its relationship with human rights. To address this issue, I developed and implemented two courses designed for pre-service and in-service teachers, exploring the rather turbulent history of science and human rights from ancient times to the present day, from a perspective that considers both science and human rights within social, cultural and historical contexts, and highlights the contributions of science to human rights causes, from both negative and positive cases. Rather than promoting a naïve view of science as an a-cultural practice, detached from its sociocultural and historical context, and uncritical of the hegemonic Western, Judeo-Christian, White, male, heteronormative and colonial grounds on which rests the mainstream science presented in grade school textbooks, the courses pushed the boundaries of the very definition of science and its role in human rights causes, challenging students to consider the many implications of how we define, present and study science in schools, as well as how we promote and use scientific knowledge in our lives. Students in the courses were challenged to (re)envision science and human rights as they critically analyzed predominant Discourses from an eco-pedagogical social-cultural and historical perspective. A description of the courses and results evidencing the impact of the courses on students' conceptualizations of science education for social change are reported in this conference presentation.

Keywords: Science education, human rights, teacher education, sociocultural and historical context, equity.

REFLECTION ON THE USE OF E-PORTFOLIOS DURING TEACHING PRACTICUM AT A UNIVERSITY OF TECHNOLOGY IN SOUTH AFRICA

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Abstract
During teaching practicum student teachers are expected to acquire major pedagogical skills that have to do with classroom management; organisation; self-criticism; leadership; teaching; testing and assessing between themselves. Evidence of all activities of a student-teacher during teaching practicum is usually contained in a portfolio of evidence which is submitted to the faculty at the end of the program. At the Central University of Technology, this portfolio has always been paper-based. The aim of this project is to reflect on the use of e-portfolios during teaching practicum as a replacement for paper-based portfolios. The project used Participatory Action Research (PAR) as a research methodology. Workshops, interviews, and observations were used as data-gathering instruments. Internal stakeholders took part in the project and included student teachers and lecturers, and the e-learning center at the Central University of Technology. This report provided an overview of the entire project, including the planning phase results. Thematic analysis arrived at teacher training institutions must adopt e-portfolios as a reflective tool to enhance students learning.

Keywords: *Teaching practicum, e-portfolio, pedagogical skills, self-criticism, reflection.*

DEALING WITH MULTICULTURALISM AND SOCIAL JUSTICE IN DIVERS SOCIAL SCIENCE CLASSROOMS: PERCEPTIONS AND EXPERIENCES OF INTERMEDIATE PHASE STUDENT TEACHERS

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Abstract
This qualitative study reflects the perceptions and experiences of intermediate phase student teachers in dealing with multiculturalism and social justice in diverse classrooms. The content of Social Science as a subject in the intermediate phase, respond to many societal challenges currently associated with issues such as urban and rural settlement, pandemics, climate change, poverty, racism, etc. -these contents as portrayed in some subject themes, fulfils a role in enhancing social cohesion and tolerance for one another. In an age in which diversity, multiculturalism and social justice are increasingly prominent features of higher education and society, researchers are tirelessly exploring numerous ways to meet the educational needs of diverse populations. Social Science as a subject in the intermediate schooling phase of South Africa deals with the interrelationship of humans and their environment and can thus play an integral role to meet the needs of diverse populations. Through a qualitative research methodology, data was gathered from Focus Group Discussion (FGD) sessions with three groups of five teacher education students from the same race, in their final year, specializing in Social Science teaching. The results of the study indicate that student teachers find the teaching of Social Science in a multicultural classroom very challenging, irrespective of their race, culture, or socio-background. The study therefore recommends regular exposure to diverse learners through mandatory teaching practice at multicultural schools, appropriate training and development throughout the students' teacher training with supported policies and integration of social justice into the curriculum content.

Keywords: Classrooms, diversity, experiences, intermediate phase, multiculturalism, perceptions, social science, social justice, student teachers.

UNDERSTANDING THE TRANSITION TO KNOWLEDGE GENERATION ENVIRONMENTS: EXAMINING THE ROLE OF EPISTEMIC ORIENTATION AND TOOL USE

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Abstract
Current reforms in education have emphasized shifting learning environments from a traditional replicative framework to be much more aligned to knowledge generation environments. These environments are focused on promoting student engagement with the epistemic practices of the discipline, which are the argumentative practices used to generate disciplinary knowledge. Helping teachers to shift from their more traditional pedagogical approaches requires professional development programs that enable them to not only experience learning within a generative environment but to also engage with the theoretical underpinning of such environments. To better understand the complexity involved in helping promote teacher change, the researchers implemented a professional development program that focused on asking teachers to examine their orientation to learning and how this influenced their pedagogical approaches. The knowledge generation approach, Science Writing Heuristic (SWH) approach, was the focus of the professional development as the work was centered on improving science teaching and learning.

The professional development program focused on examining cognitive learning theory, the use of epistemic tools of argument, language and dialogue, the development of pedagogical approaches and development of teaching units that aligned with school curricula. The K-5 teachers were drawn from two states and were involved in 10 days of professional development – 6 during the summer and 4 during the academic year. To study teacher transition to these environments the researchers developed three new survey instruments focus on epistemic tools that are utilized in these environments: argument, dialogue and language. The teachers also completed an epistemic orientation for generative environments survey. Teachers completed these survey instruments every six months across the three years of the project.

This presentation focuses on the first year of participation in the project as this represents the critical transition time for teachers in moving to implement the SWH approach within their classrooms. Using Latent Transition Analysis the 95 participating teachers were classified into three initial profiles. During the first six months there were transitions from both low to medium, and medium to high implementation. However, the reasons for the transitions were different. Low to medium transition was around improvements in orientation and dialogue, while for medium to high the transition was around understanding argument. The transitions during the second six months shifted to be centered much more on orientation, than epistemic tools. Once teachers transition to a new profile, they remain at that level or potentially move to the highest profile.

Keywords: Epistemic orientation, epistemic tools, transitions.

CAREER INDECISION AMONG HIGH SCHOOL STUDENTS IN CASABLANCA: LEVEL AND FORM OF INDECISION

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Abstract
Students are urged to make decisions regarding their future course of study and career after completing mandatory education. Making decisions is a challenge for many students. Therefore, we conducted a study by a questionnaire (CDS) and semi-directive interviews in order to assess the level and forms of indecision among the students of the high school. 67 students answered our questionnaire (26 male and 41 female). The results show the presence of indecision among the students by its different forms: anxiety about the career, lack of information about the careers, lack of self-confidence.

Keywords: Career indecisiveness, career indecisiveness scale, high school, students.

COMMUNITY BUILDING ACTIVITIES IN HIGHER EDUCATION DURING EARLY TIMES OF COVID-19 – A CASE STUDY FROM HUNGARY

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Abstract
After the challenges and experiences of the first semester of home education during Covid-19 pandemic, the Szombathely Institute of Eötvös Loránd University Faculty of Education and Psychology has developed a new initiative, which serves both to prepare BA students of community coordination for their professional career as well as the joint operation and strengthening of the student-teacher community in digital education via extra-curricular activities.
This is how the *Community Assembly Workshop* programme series has been created at the Institute of Pedagogy and Psychology including eight-eight programmes in the 2020/21 and 2021/22 academic years with the involvement of students on the basis of learning by doing principle. All phases of the work were carried out by the students, with background information, professional support and guidance provided by the instructor.
The paper is based on the results of a survey and SPSS analysis conducted in May 2021. All students of the two grades participating in the project implementation answered the questions. The aim of the research was to assess the development of students 'professional competence, motivation, and ideas about professional perspectives in the future. The results are relevant for the year 2020/2021 academic year which can be described as early times of Covid-19 with restrictions in all segments of life.
The results show that, in addition to the predominance of individual work as a starting point, students lack significant trust in both themselves and their peers, commitment to the profession is also weak. The organizational and implementation tasks of the *Community Assembly Workshop* programmes have developed students 'competencies in several areas. According to the results, the work carried out during the project is suitable for increasing skills in terms of teamwork, trust in peers, commitment to peers,

responsibility, stress tolerance and creativity as well as precision. Critical thinking is reinforced by the review of university rules and the role of moderators taken in conversations. Creativity can be strengthened along with logically expected graphic and playful tasks with process design as well as writing articles. All the subtasks done individually (moderator) or where the feedback from peers brought the result of satisfaction: e.g. writing articles, taking and publishing photos and videos can be considered as a self-confidence booster. The change in the commitment to the profession cannot be tied to a subtask significantly, as it is visibly strengthened by planning the processes and the work carried out during the whole semester. In terms of the development of the BA programme of community coordination, the result of the initiative is that after only half a year of work, the students' commitment to the profession has increased by 70%.
The work continues in 2021/2022 academic year.

Keywords: *Digital community coordination, learning by doing, extra-curricular activities, Covid-19.*

THE TEACHING IDENTITY OF UNIVERSITY PROFESSORS: ITS IMPORTANCE IN PEDAGOGICAL PRACTICE

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Abstract
The importance of studying the identity of university teachers lies in their role as mediators of learning and as key players in the professional training of new generations. In this sense, we report the advances of a research whose purpose is to investigate how the teaching identity of university professors is constructed and the way they perceive and mean their pedagogical practice. In the investigation of the construction of the identity of university professors, their school and professional trajectories, as well as their teaching experiences and practices, become important. On this occasion, only the findings related to the teaching trajectory and pedagogical practice of the professors are reported. The qualitative biographical-narrative approach was used to obtain six life stories of teachers from different disciplines working in public and private universities. The narratives on the adequacy of the curriculum and the pedagogical practices of the teachers, as axes of the teaching trajectory, made it possible to investigate how the teachers perceive and mean their pedagogical practice, and an approach to the understanding of the current teaching practice and their identity formation. Among the most important results in these areas are planning and academic freedom in the curriculum; implicit theories of teaching and learning; transmission of values; and the challenges of teaching: the transformation of practices and the relationship with students.

Keywords: *Teaching identity, curriculum, pedagogical practice, university professors, life stories.*

DIGITAL MEDIA AND INCLUSIVE EDUCATION IN HOME-SCHOOLING

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Abstract
The paper focuses on one of the aspects most investigated and monitored in recent years by the Desi index (Digital Economy and Society Index) on the digitization process in Europe, human capital, with an in-depth focus on primary school teachers.
The emergent state of Covid 19 has had a strong impact in the field of education, so much so that the uses of digital technology and its applications are now an essential topic in public and political debate. The implementation of digital devices for education, during the lockdown, has necessarily led to a reflection on the methodological paths that can be applied and tested in the educational context. There are many uncertainties linked to the validity of new digital didactic approaches and to the communicative and transmissive effectiveness of the contents where the digital skills of teachers and families and the lack of adequate equipment risk compromising the objective of effective and inclusive education.

How can educational quality and inclusion be guaranteed through digital communication, beyond socio-cultural inequalities? How can school digital capital guarantee new educational planning in the classroom?

These are the main questions of the paper, which will focus on illustrating the communicative strategies of visual storytelling and graphicacy as tools for democratising digital communication, for sociocultural inclusion and for reducing sociocultural inequalities, by illustrating the structural framework and the main actions/strategy of the European Erasmus Plus project CAVE (Communication and Visual Education in homeschooling).

Keywords: Digital competences, teaching, digital education, inclusion, digitalization.

THE RELEVANCE OF FEEDBACK MESSAGES IN COMMUNICATING QUALITY IN EDUCATIONAL CLASSROOM SETTINGS

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Abstract
This paper put forward an in-depth reflection grounded on two studies. The first regards to doctoral research designed to investigate teachers 'interpretations of feedback in terms of theory and practice and it explores how this might be informed by their conceptions of how students learn. The inquiry involves three Year 5 and one Year 4 teachers from three different primary schools in London. The main sources of data comprise classroom observation and teachers' interviews focusing on teachers' feedback practices and the underlying principles that guide them in the actual conducting of classroom interaction and through pupils written assignments. Analysis suggested that feedback focused on correcting basics errors, seeking further actions on the task at hand and contrasting the work with learning objective and success criteria. The main lessons learnt from the practices and views held by teachers in England were distilled into little stories and made them accessible to other teachers to help them to reflect on their own positions on the feedback issues. This was endeavoured in the context of the work in Chile within a teacher professional development programme with 60 enrolled primary school teachers. They were asked to select written assignments stemming from their pupils work to design written feedback for these tasks. This is followed by an iterative process of reflection about the messages conveyed through their comments. Data show that the teachers faced difficulties at the initial stages of development as their comments were evaluative, that is, centred on what was missing, with little room for students' self-assessment. The participants greatly improved their elaborated comments as being more descriptive, and with a focal point on the task features. Both studies provide insightful data in terms of the problematic nature of teachers' comments as pupils cannot achieve a broader understanding of quality within their pieces of work. It seems that teachers still hold a remedial approach to feedback. (Black & Wiliam, 2012, Swaffield, S. 2011; Sadler, 2007,2010).

Keywords: Quality, feedback, criteria communication, self-assessment.

TRAINING SYSTEMIC FAMILY THERAPISTS RELATED TO PSYCHOSOCIAL INTERVENTION

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Abstract
The purpose of this paper is to focus the need of a reflexive stand about systemic training in family therapy in a higher education program.

This training is associated to diverse social interrelationships that combines theoretical and clinical objectives, as well as research activities and community issues. We have been working in training programs at the National Autonomous University of Mexico, Iztacala Faculty, since 2001. The epistemological basis of this training are the systemic and cybernetic perspectives, and constructionist view about social construction of meanings in therapy and in educational processes. We emphasize observer implication,

where the student/therapist in training is observer and observant in the therapeutic and educational process. The community context is where the therapy occurs which represents complex problems of reality. We focus at individual and community influences in problem construction and at the diverse ways the systems structure is organized. We attend the emotional, cognitive, situational, social aspects of the person of the therapist. The dialogical systemic approach lead us to consider the situation of the therapist, the supervisors and the consultants. We focus on the ethics, the relational responsibility, of the systems participants involved. We propose the search for contradictions, concordances or dilemmas, associated to family, social and gender diversity, oriented to look for alternative ways of connecting with consultants and therapists. We emphasize the positioning of persons as subjects who can act upon their realities, that can explore different ways of action upon society, at the actual historical context where we live, trying to search for individual and collective strengths and possibilities.

We propose a reflexive stand when we focus our educational work, about what we do, in which theoretical and ethical perspectives we base our proposals, in order to anticipate and promote responsible professionals in connection with community needs.

This reflective processes can take in account dimensions such as: plurality, complexity, diversity, systemic relationships, meaning construction, history, contexts, social resources, gender perspective, power and the implication of the person of the therapist. Power relationships between professors, clinical supervisors, students, consultants, institutional systems, could be externalized in order to approach ethical considerations in the clinical and educational processes.

Keywords: Education, family therapists, systemic, social historical context, interrelationships.

COMPETENCE ASSESSMENT USING RUBRICS AND SOCIAL NETWORKS AND BRINGING YOUR OWN DEVICE (BYOD)

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Abstract
The European Higher Education Area (EHEA) promotes the competence-based assessment using varied, diverse and innovative assessment tools. In this sense, in previous teaching innovation projects we have developed rubrics to align the evaluation with the competences that the student needs to acquire. Moreover, we have explored how to strengthen the G15 competence of critical thinking using social networks because we observed is the competence that our students need to reinforce most. However, we have observed in our agricultural engineering students, that if they forgot to bring their device to the center, did not usually have alternative digital resources, and others did not have any account on social networks. Despite the young people in Spain recognize an intensive use of electronics, the 90% of them own 2-5 electronic devices, they little use them for learning purposes. Taking into account that digital resources and social networks are tools increasingly used by companies, we consider the need to explore bring your own device teaching method. BYOD (Bring Your Own Device) or BYOT (Bring Your Own Technology) initiatives allow students to bring their own mobile devices (laptops, netbooks, tablets, smartphones, etc.) to their centers, and connect them to a Wi-Fi network, to access institutional and educational applications and services. This experience can be a good preparation for the working context that the students will face soon. The aim of this teaching innovation project was to use BYOD initiatives to evaluate, using e-rubrics and social networks, the competences that students need to acquire. The methodology included i) the creation of a subject practice using social media to strengthen the critical thinking competence, ii) the design of a rubric using CoRubrics to assess the practice, iii) the teacher evaluation of the practice and self- and co-evaluation by the students and iv) the analysis of the results and of the teaching-learning process. The results show that high school students had the least access to mobile devices. Undergraduate and master's students in Agronomic Sciences initially brought their devices when requested and with the progress of the course, they brought it regularly. Not all students use social networks regularly and they value their use in the practice that brings them closer to the professional sector. The teachers concluded that the project provides varied, diverse and innovative assessment tools aligned with the competence-based assessment promoted by EHEA.

Keywords: Teaching innovation project, competency-based assessment, agronomic sciences, ICT, ECTS.

CHANGING THE TEACHING METHODOLOGY: HOW MUCH DOES IT COST?

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Abstract
The paper describes selected results of a multifaceted intervention study aimed primarily at nurturing and assessing critical thinking (CT) competence in a sample of primary school children in the North-East of Italy. The core of the study comprises the implementation of a new learning framework considered effective in promoting thinking and problem-solving skills, the development of an assessment tool to appraise CT performances during peer dialogue tasks, and the comparison over time of the results achieved by participants in the intervention and control classes. As part of the same research, an exploratory survey was undertaken through a voluntary questionnaire with the twofold aim of knowing the most common teaching style among primary school teachers in the region and selecting the experimental classes. The analysis of the questionnaire data showed that the use of traditional methods is still prevalent among teachers. Italian schools have a tradition of using content-based approaches and, since these are considered ineffective in promoting CT competence, one of the research questions of the study, and the focus of this paper, was how teachers deal with the implementation of a new learning framework and whether it enables them to change their teaching towards more student-centered approaches. For this purpose, the 13 teachers in the experimental group were first trained about the "Thinking Actively in a Social Context" (TASC; Wallace, 2001) learning framework. After its implementation in the experimental classes for nine months, data were collected through logbooks, lesson plans, and a final questionnaire. Furthermore, data collected from those sources were analyzed and the words of teachers from formal and informal communications were considered.
Throughout the implementation period, quantitative (e.g., number of TASC learning plans implemented) and qualitative (e.g., ways in which teachers had applied the learning framework) differences in the TASC use were observed among teachers. One group stayed with traditional approaches, keeping a more teacher-centered focus, another small group used TASC from a student-centered perspective, and a smaller group accommodated their usual learning plans within the TASC framework. Although some teachers had difficulty applying the new approach, most of them found it valuable in challenging their teaching style. The costs for changing teaching methods include extended times to fully develop the school curriculum with student-centered approaches and teachers' efforts to re-frame practices and explore strategies within new learning perspectives. Both aspects should be taken into account when rethinking school system reforms and the training of future teachers.

Keywords: Teaching methods, traditional approaches, active learning, primary education, intervention study.

WHY DO A MASTER'S?
UNDERSTANDING THE MOTIVATIONS OF MASTER'S STUDENTS IN IRELAND, NORTH AND SOUTH

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Abstract
This research considers the role of Master's study in the Continuing Professional Development (CPD) of teachers in Ireland, North and South. Countries with the highest pupil assessment outcomes emphasise the importance of teachers having Master's degrees and effective CPD for teachers has been widely acknowledged as a key characteristic of mature systems of teacher education. There has also been a developing focus on the concept of teachers as researchers which clearly places an onus upon teachers to reframe and reconceptualise their work; in this sense, it can be seen how the Master's qualification can have increasing relevance.
Despite attempts to better understand and standardise the general definition of Master's qualifications there is still much variation in terms of its value in relation to the professional status, identity and practice of teachers. In addition, whilst there is some evidence to suggest that teacher confidence can benefit from Master's study, there is limited research on the extent to which Master's work can influence professional identity and subsequent practice.

This research aims to address some of these questions by generating a profile of teachers studying for Master's degrees in Education across the island of Ireland. The research aims to clarify issues around motivation and the influence that having a Master's degree might have on the participants' professional identity and practice. Working within a qualitative, interpretative design and using a mixed methods approach employing survey and focus groups, primary survey data were collected from cohorts of students studying for Master's in Education in all universities across Ireland in the time period 2017 – 2022. This first round of data collection will be presented here.

The research may help inform programme design and also have the potential to influence policy-makers in terms of developing coherency around the professional development of teachers, beyond the initial stage.

Keywords: Master's study, continuing professional development.

USE OF LINKEDIN ENDORSEMENTS IN RECOMMENDER SYSTEMS

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Abstract
Social networks have become an important source of information, especially professional networks, where users share information about their academic and professional qualifications, skills and work experience. Nowadays, where the updating and development of professional skills is becoming more and more relevant for professionals, this information is of great interest, since it allows to know the trend of the labor market. In this regard, LinkedIn, in particular, has become one of the most widely used professional networks for this purpose, designed for professional networking and job search. From the professional profiles shared in this media, it is possible to retrieve relevant information for the labor sector, to know information about the professional profiles according to their competencies, as well as the most demanded competencies in the different job positions. This makes it possible to detect formation needs to improve or develop new skills. Additionally, LinkedIn has a particular element, the endorsements, through which it allows members of the network to acknowledge the skills of other members, which could provide information related to the level of development of a given skill. The analysis of this information, in addition to detecting training needs, can be used to adapt curricula to meet these needs, as well as in the field of human resources, to find the right candidates for the job. Currently, recommender systems have become a powerful tool for suggesting relevant articles to users. In the field of education, they have become very powerful, making it possible to link the training offer with the training needs of users, especially in the field of continuing education, in order to meet the need to develop professional skills. In a previous work, we have developed a recommendation system based on machine learning and ontology to recommend continuing education courses to LinkedIn users. As an extension of our work, we propose to incorporate the endorsement information to the user profiles to determine the improvement in the recommendations of our recommendation system. The results obtained showed an improvement in the recommendations, obtaining an accuracy of 94%.

Keywords: LinkedIn, endorsements, recommendation systems, machine learning, ontology.

THE CONTRIBUTION OF LEARNING SEQUENCES DESIGN FOR TEACHER PROFESSIONAL DEVELOPMENT IN HIGH SCHOOL VOCATIONAL EDUCATION

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Abstract
This article, generated from the thesis presented in the Master's Program in Education, Art and History of Culture at Mackenzie Presbyterian University (São Paulo – Brazil), refers to research intended, through the analysis of a teaching learning process related to performance in Technical High School, to verify the contribution of learning sequences design as a formative strategy to the professional development of teachers in this context. To support the analysis, we mainly adopted Carlos Marcelo Garcia's studies on

teacher professional development and the formal and informal process of learning to teach. In his investigations, the author draws attention to the potential of learning sequences design as a strategy focused on the construction of pedagogical content knowledge and teachers' professional identity. We were also supported, among other authors, by Lee S. Shulman's work on the knowledge basis for teaching, as well as Donald A. Schön's studies on the reflective practice inherent in teaching. The research was conducted with a team of teachers from the São Miguel Paulista branch at Senac São Paulo, a professional education institution with a wide presence throughout Brazil. The team of educators was made up within the implementation framework of the IT Technical High School (EMED), a course characterized by its interdisciplinary curriculum. Through the analysis of statements collected from surveys and the examination of reports produced during these teachers' continuing education process, their various experiences of formal and informal learning at different moments of their training course were recognized, as well as their perceptions regarding the impact of those experiences on teaching learning and teaching practice itself. It is worth mentioning that the period analyzed begins in their first contact with the school (still as candidates in the selection process) and goes up to the conclusion of their first working year at the institution. In this context, and from the information and statements collected, the experiences characterized by the design of learning sequences were described and analyzed with regard to their incidence in their professional development, resulting in the recognition, based on the point of view of educators participating in the research, of the relevance of each activity performed, the main learning process generated, the main challenges and difficulties faced and the possibilities of process improvement.

Keywords: Teacher professional development, high school vocational education, formal and informal learning, learning sequences design.

THE DUAL ROLE OF SCHOOL MENTORS: HOW TO ESTABLISH TEACHING AND SUPERVISION GOALS?

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Abstract
In several countries, the schools' responsibilities in preparing student teachers for their future work have increased over the last decade (Sandvik et al., 2019). In cooperation with the universities, school mentors are expected to set an example of how to teach pupils and use appropriate teaching practices in lessons. School mentors are expected to be capable of choosing teaching practices that achieve several educational goals and to connect student teachers' theoretical concepts with practical training. However, not all school mentors are sufficiently prepared to supervise students and many do not appreciate the importance of their role in training future teachers. The purpose of the present study was to investigate Estonian school mentors' teaching and supervising goals when they teach pupils and supervise student teachers as well as to identify how teachers in the role of mentors understand university expectations. The sample included 16 teachers, all of them had supervision experience with student teachers and they all taught various subjects at university teacher training schools (in grades 1 to 6). Observations and stimulated recall interviews were used to collect the data. Thematic analysis indicated that teachers have difficulty establishing goals for themselves as teachers and mentors. The results demonstrated that Estonian school mentors have the challenge of combining two responsibilities: how to maintain balance between their teaching and supervising. It also appeared that mentors did not perceive clearly what universities expected from them as supervisors and, therefore, relied rather on their personal perception and experience than a clear knowledge of their supervision goals. Mentors' main goal in model lessons for student teachers was to establish good teaching experience. To conclude, it is necessary to encourage cooperation between teachers and universities and support mentors' professional development.

Keywords: Mentor teacher, teaching goals, student teachers, improving the competence of mentors, thematic analysis.

PROJECTS AND TRENDS

ERASMUS PROJECT VIRSTEM INTERACTIVE TOOLS FOR EDUCATION

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Abstract

In a modern education, the use of modern technologies is dictated by the time requirement to provide all spheres of life with competent specialists.

This article provides an overview of the first year of the project work of an international team consisting of teachers and researchers, software developers and modelers - specialists in BIM environment from different countries of the Baltic region, which was devoted to finding opportunities to improve the efficiency of teaching technical disciplines, integrating modern technological disciplines and virtual and augmented reality solutions with using the best traditional teaching methods, developing new approaches in educational and methodological work.

To create a modern learning environment and support the independent work of students of construction specialties in an open online course "Basic Engineering Graphics", interactive teaching material with visualization and integration of BIM is used: simulators of digital objects, interactive exercises, and tests.

The free online course is designed for undergraduate students of construction specialties, both full-time and part-time studies, as well as for the professional development of specialists.

Involving the student in an active educational process to gain new knowledge is a priority to ensure the effectiveness of independent distance learning.

The statistical data presented in the article provide interesting material for analyzing the effectiveness of teaching methods, demonstrate the need to change the approach to using traditional teaching methods, and integrate virtual technologies with the best traditional methods of technical teaching.

The use of interactive objects, feedback with recommendations for further progress cannot fully replace the teacher and mentor but helps the student to plan their learning and is a very effective preparation for the next stage of learning.

Keywords: Interactive learning, visualization, virtual reality, BIM, engineering graphics.

AN ANALYSIS OF STUDENT TEACHERS' E-READINESS FOR DIGITAL EDUCATION ENVIRONMENT IN COVID -19 TIMES

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Abstract

The COVID-19 pandemic and the hygienic measures of social distance brought impasses to education and its future. Face-to-face activities are suspended and this accelerated use of Information Communications Technology (ICT) in most environments including education. Based on these changes, teacher education and training at universities should prepare prospective teachers that are able to function within the digital and virtual classrooms. This paper investigates the level to which student teachers were exposed to Technological Pedagogical Content Knowledge (TPACK) needed by them to function within the digital & virtual classrooms during and post COVID-19 times. The paper analyses, Central University of Technology (CUT) final year Bachelor of Education student teachers' e-readiness to integrate ICT and present lessons in digital classrooms. A total of 60 student teachers were purposively selected to participate in this study. Data was collected using online questionnaires. A 5-point Likert scale questionnaire was used to collect data from student teachers. Subsequently, results revealed that student teachers are aware of the importance of ICT and e-learning in schools. However, they acknowledge that they have limitations, and

they are not ready in implementing them in digital & virtual classrooms. The study concludes by offering several theoretical and practical recommendations for the e-readiness of student teachers in such environments.

INTEGRATION OF CREATIVITY PRINCIPLES AND HIGH IMPACT PRACTICES TO INNOVATE GLOBAL LEARNING IN HIGHER EDUCATION

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Abstract
In this presentation, the effectiveness of incorporating creativity principles and high impact practices into global learning will be communicated. This session will highlight and expand upon a revolutionary approach to global education that initially debuted at the 2021 END conference. Though the COVID-19 pandemic grounded the majority of study abroad programs, an alternative, virtual way to elicit the growth and gains that global education provides was conceived, which was facilitated remotely and enhanced with face-to-face classroom interaction. Quantitative and qualitative data from students (n=13) who enrolled in a directed studies virtual study abroad experience at a large university in the southwestern United States will be disseminated. The effectiveness of this virtual study abroad model will be conveyed through the lens of Glăveanu (2013) 5A's creativity theory framework that has strong roots in sociocultural psychology. Specific to Actors, the alignment of instruction, construction of a syllabus, and involvement of content providers helped build the virtual experience will be seen. In relation to Actions, innovative delivery methods meant to enhance engagement and encourage collaboration and communication will be demonstrated, including video modules, live streaming, and live face-to-face events. Artifacts created as part of this experience, including exemplars of assignments, rubrics, and projects designed to elicit critical thinking and increase students' connection with the material will be displayed. Participants will learn how to engage in inclusionary practices and recruitment efforts that helped expand this global learning opportunity to new Audiences and underserved populations. Finally, for Affordances a practical and resourceful guide as to how to develop one's own virtual study abroad experience will be outlined. Empirical support of this model will be provided, with results from standardized assessments that demonstrate effectiveness of the virtual study abroad in increasing critical 21st century skills related to cross-cultural competency and intercultural awareness.

EVALUATING STAKEHOLDER DESIGNED INTERDISCIPLINARY AND INTERSECTORAL DOCTORAL MODULES

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Abstract
Collaborative doctoral programmes assist the knowledge society in finding innovative ways to address sustainable development goals by asking creative questions and finding creative solutions. The aim of CHAMELEONS (Championing A Multi-Sectoral Education and Learning Experience to Open New Pathways for Doctoral Students, H2020-SwafS-2018-2020), is to develop interdisciplinary, inter-sectoral and international modules that broaden the skills of PhD graduates improving their employability in academic and non-academic environments. Through a co-design process 4 learning outcomes were developed which formed the foundation for 3 modules. Each module advanced the students' depth of knowledge and understanding. The 4 learning outcomes were as follows:
• Develop networking and communication skills;
• Understand user-centred design;

• Market research capacity and research skills; and
• Build an understanding of themselves and others.

Fifteen doctoral students from five European universities were recruited. This paper represents evaluation conducted on the first two modules which, due to COVID-19 restrictions, were delivered via Zoom. At the conclusion of each module the students were invited to complete a questionnaire consisting of sixteen questions, thirteen of which were on a five-point Likert Scale, and three of which were free text. The closed questions explored student perceptions of: programme objectives; programme delivery; opportunities to engage; satisfaction; and links between theory and practice. Students were asked to identify three aspects of the module which assisted their learning, three changes they would suggest to enhance their learning, and were offered the opportunity to provide additional comments.

Programme content: Students perceived that real-time assessment, reflective learning, engagement with course coordinators and the opportunity to engage with practical research tools (Photovoice, Ecosystem Mapping and Walk My ID) all enhanced their learning. They suggested more group activities, breakout groups (possibly themed), and real-life coffee breaks, to enable them to better network with their doctoral colleagues. There was a desire for more practical activities with some suggesting the development of career-pathway skills (Curriculum Vitae, Interviews).

Programme delivery: A theme that frequently appeared was the desire to have more physical face-to-face engagements in Module Three. The students understood the Covid-19 constraints but expressed a strong desire for meeting face-to-face. When given the opportunity to add freeform and unprompted comments, students almost without exception expressed their satisfaction with both modules, and their appreciation for them. Nevertheless, a number of participants reiterated their desire to undertake Module Three in person.

Programme outcomes: One student expressed an aspiration to be "more sure" of their skill set and marketability upon completion of Module Three complimenting the focus on practical learning in the programme content review.

Keywords: Doctoral education, programme evaluation, stakeholder design, interdisciplinarity, intersectorality.

EDUCATION FOR SUSTAINABLE DEVELOPMENT: A COMMON GOOD FOR BOTH NOW AND THE FUTURE

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Abstract
Altruistically speaking, humanity has now reached a point where it has recognised that it has a responsibility to achieve a development that is sustainable. This responsibility is outlined in the United Nations Sustainable Development Goals (SDGs). This notwithstanding, as an intrinsically selfish creature, humanity also has a need to fulfil its own needs. This concept is set out by Maslow. Education is undeniably a linch-pin in marrying these two concepts, aiming to meet the challenges and the needs of both today's and future generations. Whether and how these needs are met for any learner affects the learner's motivation to learn and the educator's motivation to teach. Moreover, during their time in education learners form habits of mind, beliefs, and principles that will stay with them throughout their lives. This is why it is so crucial to reflect on the type of education that best 'cultivates and guides the sustainable humanity' of the learners. This is the challenge facing today's Anthropocene society. Any approach must be based on the vision of a just and equitable future for the next generations on a stable and resilient planet. With this in mind, we describe the paradigm shift towards an education for sustainable development. Subsequently, one of the principle outcomes of this contribution is a series of eight features which could be used as a template for any realignment of education aiming to achieve sustainable development at the same time as fulfilling Maslow's needs. Finally, further research may build upon these conclusions so that researchers are spurred to examine the topic in more detail in future practical work.

Keywords: Educational guidance, human needs, Maslow, transformation, sustainable development goals (SDGs).

UNDERSTANDING STUDENTS' EXPERIENCES AFTER INCORPORATING INDIGENOUS PERSPECTIVES IN A POSTGRADUATE SCIENCE COMMUNICATION SUBJECT

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Abstract
Many Australian universities have recently incorporated Indigenous graduate attributes into their programs, and the University of Technology Sydney (UTS) is no exception. This project aimed to investigate students' perceptions and experiences of learning about Indigenous Knowledge systems and culture while developing science communication skills. Advanced Communication Skills in Science is a core subject in the Master of Science program at UTS. An existing assessment task, a three-minute thesis style oral presentation, was reworked to include the Indigenous Graduate Attribute (IGA) developed for the Faculty of Science. Students researched an aspect of Indigenous Science, an area of emerging interest for cultural and scientific understanding, and a mechanism for empowering Australia's diverse first nations peoples. They then presented their key message in three minutes using a single PowerPoint slide. This task allowed students to demonstrate an awareness and appreciation of multiple ways of developing understandings of nature while enhancing their ability to understand the role of science communication in the modern world. Students were surveyed at the beginning and end of the semester to establish their Indigenous Science conceptions and reflect on their experiences. Students demonstrated an outstanding ability to integrate appropriate Aboriginal and Torres Strait Islander knowledges, experience, and analysis into a key message. Most students reported greater familiarity with concepts such as Indigenous Science and provided richer definitions of what this means. When asked if understanding Aboriginal and Torres Strait Islander knowledges and cultural practices might impact their practice as a scientist, many felt their perspective had changed and that reflecting on their cultural values and beliefs had improved their cultural capability. Most students responded that this subject challenged (at least to a degree) some firmly held assumptions, ideas, and beliefs.

Keywords: Graduate attributes, science communication, cultural competence, Indigenous science, tertiary education.

COVID-19: LEADING IN CHALLENGING CIRCUMSTANCES – CHALLENGES FOR SCHOOL LEADERS

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Abstract
Principals are leading in challenging circumstances since the country went in to COVID-19 lockdown. The combination of confusing government decisions and advise, compounded by the lack of district decision making has left many principals to make key decisions on a daily basis and many times not sure if they will have the backing of departmental officials. Principals had to keep schools open, whilst simultaneously creating an online machine, keeping in touch with the most vulnerable learners and families. School leaders are uniquely positioned to have the respect and personal relationships to guide families to support their children at home during these unprecedented challenges. For rural school leaders it is harder, as rural schools serve families across a cast geographic area without high-speed internet. How do rural school leaders lead educators and their schools doing their best in unchartered waters where teachers moving instruction online, distributing food and technology?
Using a qualitative research approach, this study aimed to determine the challenges faced by rural school leaders in leading their schools during COVID-19. Five schools in the Nelspruit areas were selected through purposeful sampling. Data collected was organised logically into workable units to facilitate coding. Data was categorised in themes, the findings revealed COVID-19 has had an impact on the principal's leadership as principals were challenged to decisions relating to feeding learners, organising protective clothing, finances, and online learning.

Keywords: COVID-19, leadership, technology, principals, schools.

ON THE IMPORTANCE OF TELECOLLABORATION FOR THE DEVELOPMENT OF STUDENTS' INTERCULTURAL COMMUNICATIVE COMPETENCE

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Abstract
Although the idea of performing collaborative tasks by language students from geographically distant countries dates back to the end of the 20th century (Warschauer, 1996), its benefits were reconsidered once again after the Covid-19 pandemic lockdowns had halted students' mobility and abated their enthusiasm for worldwide discoveries. The latter constraints reduced the number of natural opportunities for students to develop their intercultural communicative competence. To bridge the developmental gap, the attention was shifted toward the application of technologies engaging them in semi-authentic communication (O'Dowd, 2013), consequently, one of the modes of telecollaboration was chosen. The study focuses on the analysis of the outcomes of the telecollaboration project run by the teachers of the four universities: Vilnius University (Lithuania), the University of Latvia (Latvia), Los Lagos University (Chile), and the University of Austral (Chile). All the three stages (*before*, *during,* and *after* interaction) of the project are reviewed with a particular focus given on 64 students' attitudinal reflections obtained via a designed questionnaire. The study also presents the analysis of the students' feedback on the project in general, the challenges they were exposed to, and their personal achievements, including the development of intercultural communicative competence.

Keywords: Telecollaboration project, challenges, discoveries, intercultural communicative competence.

ACCELERATED VIRTUALIZATION OF HIGHER EDUCATION IN TIMES OF PANDEMIC: THE CASE OF AN ECUADORIAN UNIVERSITY

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Abstract
The purpose of the paper is to present and discuss the impact, challenges, and opportunities that the COVID-19 pandemic and related lockdowns have caused to the te
aching and learning model of an Ecuadorian Higher Education Institution: the Universidad Andina Simón Bolivar (UASB). The discussion will be led from the perspective of various educational actors and different levels of decision-making.
At the beginning of 2020, the COVID-19 pandemic that confined a large part of the world's population to their homes and paralyzed activity in practically all areas of human action, forced a rethinking of education at all levels. In addition, the massive closure of schools and universities led to the deployment of distance learning modalities through a variety of formats and online platforms, replacing traditional educational processes.
Experts have called *emergency remote teaching* for this sudden and unforeseen shift of face-to-face classes to virtual modalities. This name comes to highlights that the solutions adopted in a very short period, in many cases, could not be based on well-founded models of e-learning and a well-planned learning process. Still, rather traditional practices were transferred from face-to-face education to online platforms, maintaining their conventional forms in terms of methodologies, teacher and student roles, typologies of activities, evaluation models, and so on.
The work presents the case study of the successful transformation process of a Higher Education institution based on a face-to-face model to a remote model to continue providing training to its students despite the disruption caused by the confinement derived from the health crisis of COVID-19.

The analysis of the data collected through a variety of methods that included interviews with faculty, the analysis of institutional documents, and a student survey highlights the complexity and adequacy of the strategies implemented by the educational community to make the transition from an emergency remote teaching to a quality online learning ecosystem.

Keywords: COVID-19 pandemic, higher education, emergency remote teaching, effective online learning.

EFL TEACHER TRAINEES´ ATTITUDES TOWARD INTEGRATING ARTIFICIAL INTELLIGENCE INTO LANGUAGE LEARNING

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Abstract
Integrating Artificial Intelligence (AI) into education has not been any news for some time. AI-powered learning tools found their way to all aspects of education, and foreign language education is no exception. The day-to-day use of AI-powered learning tools has increased exponentially, especially during the covid-19 pandemic, which induced national lockdowns with schools closed. The situation swiftly shifted education into distant, hybrid or blended learning modes and opened the door to more complex inclusion of technologies into both teaching and learning. In many cases, IA powered tools (with their ability to provide learners with individually tailored materials and support autonomous language learning) proved to be precious teaching aids appreciated by many teachers and learners. However, some recently conducted research studies showed a relatively high level of reluctance towards intelligent tools among many teachers and learners.
The purpose of this study was to evaluate the attitudes of a multi-national group of university students who study English as a foreign language towards using AI-powered tools for learning English. Two hundred eleven future teachers of English from Slovakia, the Czech Republic and Poland responded to a 20-item online questionnaire (Survio). Their anonymity was ensured.
The results showed that students' attitude toward using AI in language education is more reserved than their attitude towards integrating ICT and digital technologies in general. The significant majority of respondents stated they lacked even the basic information about AI principles. Moreover, they were not particularly interested in the topic (they are not planning to search for more details actively). In this context, it is not surprising that nearly half of respondents were not aware they were already using AI-powered tools (e.g. online browsers and translators). A clear correlation was identified between the lack of information and a negative attitude towards AI. Thus, the negative attitudes of respondents were essentially based on prejudice (rooted in fear and lack of trust towards AI). However, most respondents believed that integrating AI would positively impact language education. In addition, nearly no respondents expected AI to replace human teachers in the future. No significant differences were found between the results from different countries. The study's findings pointed out to some inconsistencies in respondents' attitudes, the reserves in teacher training and the need for further study of the issue.

Keywords: Artificial intelligence, teacher training, language education, teaching and learning English.

IMPLEMENTING PSYCHOSOCIAL SUPPORT FOR CHILDREN AFFECTED BY THE BEIRUT BLAST: PROVIDING A SAFE PLACE IN THE MIDDLE OF CRISIS

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Abstract
The Beirut blast on August 4, 2020 has left a large impact on the well-being of children. This paper is a preliminary presentation of a larger explorative case study investigating the experiences of psychosocial counsellors providing psychosocial support through non-formal education for affected children after the blast. Longitudinal fieldwork consisting of digital and face-to-face in-depth interviews, visual materials and focus group discussions have been conducted. This paper describes how psychosocial support implemented by counsellors can provide a safe place for children in light of the aftermath of the Beirut blast and the

ongoing crises in Lebanon. The supporting factors include a physically safe space, tools provided to the children to reduce their stress levels and increase their well-being, and a professional team providing a child-friendly and respectful place.

MANAGERS' STRATEGIES FOR INCLUSIVE IMPLEMENTATION IN TECHNICAL VOCATIONAL AND TRAINING COLLEGES IN SOUTH AFRICA

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Abstract
Limited access to people with disabilities in institutions of higher learning is unfortunately a common trend in South Africa. The purpose of this paper was to explore strategies to implement in Technical Vocational Education and Training (TVET) colleges in order to promote inclusive education effectively; that is, to create smooth access for students with disabilities. Research that explored strategies regarding the implementation of inclusive education in TVET colleges had not been previously conducted in South Africa. Hence, this paper's contribution focused on strategies for the implementation of inclusive education through the lens of students with disabilities. It also fits into the human pedagogy model that advocates accommodation of students as they are. This research was underpinned by a qualitative approach utilising the Interpretive Phenomenological Design. Data was gathered through document analysis and in-depth interviews involving twelve managers from four TVET Colleges in the Eastern Cape Province of South Africa. The findings indicated that although the managers understood the need for the implementation of inclusivity in colleges, very little was done to support students with disabilities. College management did not take ownership for driving, managing, and implementing their strategic plan. The findings also revealed the following: a lack of support structures, absence of the Disability Services Units, lack of partnerships with schools, no control over strategic planning, no evidence of policies on inclusion, lack of funds, and delays in providing services that support students with disabilities. It was recommended that managers implement strategies to create support structures, Disability Services Units, partnerships with similar schools, a strategic management plan, inclusion policies, and fundraising schemes to promote access to students with disabilities in colleges.

BUILDING ACADEMIC INTEGRITY THROUGH ONLINE ASSESSMENT APPS

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Abstract
The Covid-19 pandemic of the last two years is having an immense effect on teaching and learning in higher education. The rapid shift to online assignments and examinations in response to the pandemic and the consequent lockdown forced higher education institutions to become innovative with regard to online assessment. Furthermore, academic integrity during online examinations is a crucial concern since it affects the quality and trustworthiness of examination systems in higher education. In our experiences and according to course reports by lecturers at the largest distance education university in South Africa (Unisa), students handled online assessment in varied ways, which ranged from honesty to students being guilty of copy-and-paste and students assisting other students or phoning somebody for assistance. The two main research questions were: what is involved in academically dishonest behaviours in online courses, and can digital technologies such as online invigilator applications contribute towards academic integrity? The purpose of this exploratory case study was to analyse the types of challenges experienced by Baccalaureus Educationis (BEd) and Postgraduate Certificate in Education (PGCE) students during fully online examinations. We want to propose guidelines for instructors and administrators in their decision-making

process regarding online evaluations and encourage future studies that will form the foundation of evidence-based practices. The study further focused on a new app referred to as the Invigilator Application (IA). This app was compulsory for students to use during their online assessment, and our interest is to discover how the IA may contribute towards academic integrity. The findings are reported in terms of the cheating behaviour that occur in different components of course assessments and are discussed in terms of personal motivation theory and broader social and community pressures.

Keywords: Cheating behaviour, ethics, higher education, online examinations, invigilator apps, teacher education.

EXPLORATION OF PRE-SERVICE ENGLISH FIRST ADDITIONAL LANGUAGE STUDENTS' TECHNOLOGICAL READINESS TO TEACH DURING TEACHING PRACTICE

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Abstract
The outbreak of pandemics, such as Covid 19 and the need to learn "21st century skills" has resulted in universities intensifying the adoption and use of information and communication technology (ICT) in the training of pre-service teachers. Each teaching subject that pre-service teachers specialise in requires ICT skills relevant to the content of that subject. This paper focuses on English First Additional Language (ENGFAL) pre-service teachers' readiness to teach using ICT. This group of students specialise in a Bachelor of Education Degree at Further Education and Training level. A qualitative approach was used to gather data from final year ENGFAL students who will be on teaching practice (TP) in the middle of the year. Two focus group interviews comprising of five students each, were used to collect data from the ENGFAL pre-service teachers at a developing university in South Africa. This study was informed by the Technological Pedagogical Content Knowledge framework (TPACK). Data were analysed using a thematic approach. Key themes that emanated from this study were that most students were confident that they could teach ENGFAL using the traditional methods of teaching. The students revealed that ENGFAL has many aspects derived from the Language and Literature components of the subject and that sometimes confused them. However, only a few were confident that they could select appropriate ICT with the most affordances to achieve lesson objectives. Therefore, the majority of the ENGFAL pre-service teachers had limited TPACK. Another important issue that also emanated from this study was that the participants felt that they would have learnt better on how to use ICT to teach if they had done that in a physical classroom. They did not get adequate time to practice teaching using ICT in the physical classroom due to the Covid19 lockdown. Researchers of this study concluded that more practice, teacher, and peer support is needed for pre-service teachers to master ICT use in teaching ENGFAL.

Keywords: Information and communication technology, English first additional language, pre-service teachers, technological and pedagogical content knowledge.

PERCEPTION OF ONLINE MACHINE TRANSLATORS BY NON-NATIVE STUDENTS OF ENGLISH PHILOLOGY AND FUTURE TEACHERS OF ENGLISH

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Abstract
For centuries, print dictionaries were the primary assisting tool for those who needed to find the meaning of an unknown word or translate something from or to a target language. These days, various technological solutions are available, many of them online and free of charge. Online machine translators (OMTs) are used as dictionaries to look up individual words or translate texts of various lengths. OMTs have changed the situation in foreign language education, too.
The paper aims to discover how OMTs are perceived and used by non-native speaking university students of English in teacher-training and philology programmes and identify possible differences. First, the paper

summarizes the main directions in the ever-growing research on perceiving OMTs in foreign language education. Second, it presents partial results of the online survey conducted among future teachers of English and students of English philology (English language and culture). The results proved that both groups of respondents use a wide range of OMTs, with Google Translate being the most popular. In general, respondents showed positive attitudes towards OMTs and were satisfied with their outcomes; however, teacher trainees were more critical when the quality of translations was considered and they were more aware of the need for post-editing. Future teachers of English also showed more reserve for using OMTs as means of FL learning (learning new vocabulary, pronunciation, grammar, reading, writing, translating). Only a tiny part of respondents (all future teachers) saw OMTs as a threat to effective foreign language learning. The results proved a more "conservative" perception of OMTs by future teachers of English (which may explain why some practising teachers ban using OMTs in their classrooms, fearing that their students could become dependent on them). Students of English philology (English language and culture) manifested less critical attitudes towards OMT in all observed categories. They focused more on speed and comfort than the quality of translation. This result points to the need to instruct students on using OMTs properly (including post-editing) to get the best possible translating and learning outcomes.

The paper presents partial results of the research project KEGA 019TTU-04/2021 Integrating new digital tools into philological research and education sponsored by the Slovak Ministry of Education, Science, Research, and Sport.

Keywords: Online machine translation, translating apps, foreign language learning, non-native speaking students of English.

ASSESSING CHILDREN AT RISK IN UAE: PILOT USE OF THE MBC ARABIC VERSION IN PRIMARY SCHOOL SETTINGS

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Abstract
Children's emotional, behavioral and developmental problems can be properly identified and assessed based on observations from their teachers and parents. The Motor Behavior Checklist (MBC; Efstratopoulou, Janssen, Simons, 2012a) was designed to assist classroom teachers and Physical Education (PE) teachers in assessing their students' motor-related behaviors. The instrument has already been successfully translated and culturally adapted into six languages and used in a number of research studies internationally. The present study aimed to apply the newly developed Arabic version of the MBC checklist at mainstream Schools in UAE and assess the motor behavioral problems in typical school-aged children. A sample of 294 children aged 2- 18 years were assessed by their teachers in school settings using the 59 items checklist for children analyzing data on the 7 clusters (rules breaking, attention, hyperactivity, low energy, stereotyped behavior, social interaction, self-regulation). Findings indicated that boys were scoring higher on the Attention, Hyperactivity, and social problems scales. Gender differences and the possible effects of behavioral challenges are also explored and discussed in the study. Early assessment and Behavioral management strategies are recommended by the authors.

Keywords: Children, teachers, assessment, physical educators, behavioral problems.

A HYBRID INTERNATIONAL CO-TEACHING MODEL: CASE STUDY FOR BIOMEDICAL ENGINEERING DEGREE

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Abstract
Degrees in Biomedical Engineering are increasingly present among the international offer. The study plans of each of them allow to provide a certain specialization towards the different sub-areas within biomedical engineering through electives: orthopedics, microbiology, robotics, biosensors or artificial intelligence applied to clinical data. The fact of including 4 subjects of artificial intelligence is another of the particularities and/or differential elements of the curriculum. The University of Deusto offers a new degree

in Biomedical Engineering of 240 ECTS where all the subjects of the "Bio" subject are taught in English, and include "master class" among other teaching methodologies. The teaching modality is hybrid, with a module of 24 ECTS dedicated to state-of-the-art frameworks in bioengineering that is entirely taught virtually and where international experts in each subject participate as online teachers. This is what we call "international co-teaching" which allows students to have a more realistic view of the use of technologies for biomedical applications but in an international framework. These teaching modules will follow a methodology that will combine synchronous videoconference sessions by international experts with an asynchronous methodology that includes the use of gamified activities for both content presentation and evaluation. Moreover, the teaching modules will be designed and developed according to a number of learning cycles that promote the development of the independent and meaningful learning of students and promotes the development of their knowledge, skills, attitudes, competences and values. Each learning cycle has five stages: experiential context, reflective observation, conceptualisation, active experimentation and assessment. These stages facilitate students' active construction of the learning content and the meaningful integration of that knowledge that will allow subsequent recovery, application and transfer.

Keywords: Hybrid teaching, gamified learning, biomedical engineering, international co-teaching.

STUDENTS' EXPERIENCES ON DISTANCE LEARNING DURING THE PANDEMIC

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Abstract
The ongoing COVID-19 pandemic has changed how we study at all levels of education. The students have had to embrace distance learning methods not by choice but as a necessity for their studies and this comes with its own challenges. In this paper, we observe students' perceptions based on a survey conducted on 133 students in late 2021. The results show that students' perceptions of online learning during the pandemic are mixed, and while others prefer working online, some are having serious difficulties. The detailed results are presented in the paper along with our interpretation and discussion about the further implications.

Keywords: Online learning, remote learning, COVID-19, pandemic, student perception.

THE CHALLENGES OF TEACHING METHODOLOGIES, POST-COVID; HYBRID VS. HI-FLEX MODELS

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Abstract
COVID-19 has changed the world in so many ways, including how health, science, and politics interface; how global finances are influenced by a pandemic; and how education is delivered. Many challenges were faced when traditional brick-and-mortar colleges and universities shifted abruptly from face-to-face teaching delivery methods to online teaching. Some of those challenges were based on social inequities, including access to laptops and to internet service, as well as access to childcare or eldercare services. As instructors from these institutions have been returning to the classroom, a fresh round of challenges are being faced, including an unwillingness of many students to return to campus, and a student demand for online access, even for face-to-face courses. The motivation for this paper came from my experiences as department head, fielding ongoing questions from full time and adjunct faculty as well as students about the benefits of hybrid vs. hi-flex teaching models. My objective was to explore the research in order to provide a more definitive response, and to smooth the class modality/scheduling process. A literature review was conducted, as were interviews with online education experts. The benefits and drawbacks of hybrid vs. hi-flex teaching methods have been defined and articulated.

Keywords: Hybrid, face-to-face, hi-flex, teaching methodologies.

FACILITATION TECHNIQUES AND TOOLS FOR ONLINE PROJECT-BASED LEARNING WITH PRIMARY SCHOOL STUDENTS

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Abstract
Current trends indicate that more schooling will take place online, including project-based learning (PBL). This shift opens new possibilities for interactions and collaborations among students, allowing for glocalization of learning and connectivism across international classrooms. The last two years have shown that many well-established techniques/tools for facilitating PBL in physical classrooms are not simply transferable to the online space. Thus, techniques/tools for online facilitation need to be explored, adapted, and newly developed, whilst considering existing pedagogical principles. We conducted three case studies lasting approximately 3 months each, in which primary school students (Grade 5-7) from Namibia, Malaysia, and Finland collaborated in online sessions. Throughout these studies we focused extensively on the facilitation process, exploring different techniques/tools with a trial-and-error approach. We were guided by our own experiences in facilitating and teaching within physical classrooms, and continuously reflected on the adaptation to online settings, whilst consulting theoretically-proposed and empirically-supported suggestions from various fields. For each case study, we video recorded the planning of the sessions, the sessions themselves, and the reflection afterwards. In addition to analyzing these videos, we also drew upon focus group interviews that were conducted with students at the end of the studies. Based on this data, we present facilitation techniques/tools, including the structuring of sessions (e.g., the importance of icebreakers, variety in activities, and navigation of digital tools), as well as aspects relevant to the climate (e.g., student-student interactions, facilitator-student interactions, autonomy, role distributions, and language). With the presentation we offer researchers and educators practical techniques/tools, as well as important aspects to consider when facilitating primary school students in online project-based endeavors.

Keywords: Facilitation, project-based learning, online, primary school.

THE LEGAL BACKGROUND AND ACCEPTANCE OF LEARNING COMMUNITIES BASED ON INTERNATIONAL COMPARISON

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Abstract
After 2011 a new alternative educational form appeared on the palette of Hungarian public education: learning communities that provide alternative education for schoolchildren who take part in alternative or mainstream education as private pupils. The learning communities are not schools in the traditional way, but we can simplify it as home-schooling in a more organized way. The conditions of learning communities and regulations in connection with the fulfilment of compulsory education vary in different countries and there is a difference in private pupils' legal relationship in regard to how permissive or restrictive the status of being a private pupil is. The learning community as an alternative way of education has appeared in more European countries and even beyond Europe, this research discusses three European countries – Austria, Hungary and Romania – the way they regulate the fulfilment of compulsory education and their regulations in how they permit being a private pupil, as well as the attitude of educational governance towards this new form of alternative education.

Keywords: Public education, alternative education, learning communities.

IRDI - METHODOLOGY: AN EDUCATIONAL PROGRAM FOR CHILDREN MENTAL HEALTH PROMOTION IN NURSERIES

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Abstract
In an attempt to propose educational programs that can improve mental health of children since early childhood, a group of researchers created, in first place, the IRDI protocol, validated as a tool to predict psychic risk to child development in general. The IRDI protocol includes 31 indicators focusing on the baby-caregiver relationship in the first 18 months of life, based on the premise that the foundations for mental health are established in this period and are dependent upon the bodily, affective and symbolic relations of the caregiver-baby dyad. Then, as a continuation of the IRDI validation, new research was proposed: the "IRDI Methodology – a psychoanalysis-based intervention with nursery educators" sought to assess the IRDI as a tool for accompanying and promoting mental health in child education institutions, and also aiming to prevent further problems such as school exclusion due to mental disruptions. The methodology consisted of a follow up of 364 children distributed in 26 nurseries in São Paulo through IRDI indicators during 9 months at the nursery. Absent IRDIs were an indication of possible obstacles to a child's psychic constitution. When some of the mental health indicators were absent, the researcher worked along with the nursery caregiver in order to turn the indicators into present indicators. This paper presents the validation of the IRDI Methodology, which was based on the comparison of the rate of "turned present indicators" with AP3 results, a tool for assessment of mental health problems at the age of three. As a result, the children who had "turned present indicators" showed significantly more positive mental health indicators at the age of three at AP3 than those who didn't. It was verified that the on-the-job accompanying of nursery caregivers had a preventative effect on the possibility of children displaying both developmental problems and obstacles to their psychic constitution.

Keywords: Child education, prevention, mental health, nursery caregiver, child development.

A CASE OF AN ASSESSMENT MODULE IN DISTANCE EDUCATION AT THE UNIVERSITY OF PRETORIA

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Abstract
The purpose of the study was to thoroughly investigate the experiences of all role players in a Distance Education module. This study wanted to shed light on how the organisation of a specific Distance Education module, namely Assessment Approaches, could be improved. The study looked at the students' experiences of the pedagogy (like the contact sessions) and the staff involved (the organisation and management of the module), the students' and tutors' experiences of the technology used and the content and assessment of the module. The methodology followed was a descriptive and explorative qualitative case study, using semi-structured interviews and online questionnaires. Semi-structured interviews were held with the current, and previous instructional designer of Distance Education, as well as the academic supporter of the assessment module. Questionnaires in Google Form format were sent to the tutors of the module as well as the students. Responses were obtained from three tutors and 22 students. Findings concluded that students chose the Distance Education qualification as a result of Covid-19 for their personal and professional development. The Distance Education administration is working effectively and is very helpful to the students, but strategies to increase student participation are needed. The contact sessions are effective but need to be done more often. The learning management system, Blackboard, is easy to use and user-friendly. Students specifically make use of the discussion board to communicate with each other and lecturers. They also find the contact sessions organised on Blackboard Collaborate useful and use the recordings of the sessions if they cannot attend virtually. They experience the assessment module as very relevant to their teaching practice. They would like to learn more about different subject-related applications. They believe the assessment activities for the module are well planned and they benefit specifically from the elementary statistical procedures.

Keywords: Assessment content, blackboard LMS, distance education, pedagogy, technology.

SUPPORTING ACADEMIC ENGAGEMENT THROUGH IMMERSIVE TECHNOLOGIES

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Abstract

Academic engagement refers to the overall quality of students' involvement with schooling, including their activities and goals, as well as their connections with peers and educators. Much research has examined the facilitation and support of students' academic engagement within physical classroom settings. However, the field of education has been experiencing a shift from the status quo modus operandi of face-to-face instruction to online synchronous/asynchronous instruction, which has impacted students' engagement. This change has increased the demand to develop and adapt digital technologies that can support the engagement of students throughout online learning processes and their adjustment to the new educational norm. Fundamental research on the development and implementation of immersive technologies could provide a way forward, however we maintain that the development of such technologies needs to be guided by current pedagogical and psychological theories. Hence, in this paper, first we examine empirically substantiated frameworks of engagement and identify aspects that require consideration when developing new immersive technologies. Then, we present a succinct review of the technology-enhanced learning environments literature to determine how engagement has (or has not) been supported through immersive technologies, i.e., virtual reality (VR), augmented reality (AR), and 3D volumetric video. Finally, having embarked on the development of our in-house technology, an immersive 3D video prototype, we present the technology setup alongside the co-creation process that we are implementing to guide its development. Based on pedagogical and psychological research, we highlight several vital factors substantiating students' engagement, including the significance of the teacher's role and the importance of teacher-student and student-student interactions. These factors serve to guide our qualitative data collection during co-creation sessions to uncover students' and teachers' new perspectives of engagement in relation to the affordances that immersive technologies should offer. Our work presents insights to educators, technology designers and researchers about important educational frameworks and considerations directing our development of immersive technologies in support of academic engagement.

Keywords: Academic engagement, immersive technologies, students, teachers, technology development.

EVALUATION OF CONTINUOUS STUDENT FEEDBACK ON A LARGE COMPUTER SCIENCE COURSE

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Abstract

In this article, we present a computer science course with 460 participants, where special interest was directed towards student feedback and two-way communication. The 7-week course was organized as an online course with automatically assessed exercises. Each week, the students answered a short survey about their learning experience, course difficulty level, and time spent on course activities. They were also asked to answer three open questions about what they had learned, what remains unclear and how would they improve the content. Quantitative and qualitative feedback data were analyzed for all seven weeks. In addition, we analyzed the student performance by observing the final grades obtained from the course. Based on the results, it seems that there is a positive correlation between engagement and final grades. Moreover, dynamically modifying the course on the fly based on continuous feedback seems to be a beneficial mechanism. Surprisingly, the teaching staff did not find it too laborious either. Finally, we provide experiences and suggestions for other educators for utilizing continuous feedback effectively.

Keywords: Feedback, difficulty level, students' perceptions, programming.

IDENTIFYING THE PH.D. STUDENTS' NEEDS FOR CAREER ENHANCEMENT SKILLS

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Abstract
In the past few years, it has been seen that an increasing number of Ph.D. graduates are following a career outside academia. CHAMELEONS project has undertaken the role of identifying and fulfilling the needs of Ph.D. students for following a career in the industry in digital health. This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 873105. The overall aim of CHAMELEONS is to firstly identify a range of modules and secondly co-design and deliver three interdisciplinary, inter-sectoral, and international modules which will broaden the skills of 15 Ph.D. students/Post-Doctoral Fellows to improve their employability in both academic and non-academic environments. CHAMELEONS' consortium offered the opportunity to the Ph.D. students participating in the project to attend some modules in fellow universities and outside their Ph.D. program. This work presents the choices of the students. Students were called to identify one to three modules based on their needs and interests. To that end, and towards identifying the quantitative and qualitative characteristics of the selected courses, a questionnaire was developed. The questionnaire was implemented as part of an online google classroom resource where information about the available courses for selection was made available. The questionnaire answers were completely anonymous. The questionnaire attempts to attain information regarding these courses at two levels: (i) background and skills that the students recognized as underdeveloped and the tools they used to identify them, (ii) preferences of students in terms of interest, reasons, and motivation of selection and the skills (provided by the European classification of Skills, Competences, and Occupations - ESCO) they aim to acquire through these courses. 13 students replied to this questionnaire, all coming from diverse backgrounds (health-related or health technology-related) and the majority used a self-awareness/self-assessment tool to identify the skills that they need to improve and make their decision. Moreover, students selected courses that do not actually improve a hard skill needed for their research, but soft skills in the business and career management direction, focusing mostly on creativity, innovation, and communication. Finally, students are willing to attain what can be considered necessary for building a successful career in every sector. To conclude, our study suggests that Ph.D. students have a need to develop skills beyond their basic scientific education. These skills are related to the perspective of developing a successful career plan and being competitive in the occupational arena.

Keywords: PhD courses, extra-curricular activities, career enhancement.

DIGITAL CAPITAL AND SAFETY IN SOCIALIZATION PROCESS. AN ITALIAN CASE STUDY

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Abstract
The process of digital acceleration, which in the last few years of the pandemic crisis has affected formal socialization contexts such as schools and families, has led to a critical reflection on the new responsibilities and skills of the digital citizen, in order to preserve his autonomy in the management of virtual dynamics while respecting certain ethical principles at the basis of navigation. These principles underpin the implementation of a digital culture in which the use of devices is guided by a sense of responsibility and respect for otherness. The new digital skills of the citizen go beyond specific access techniques and focus mainly on conscious digital behaviour at the basis of safeguarding various forms of individual and social well-being. Through the illustration of the main results of a national survey promoted by Sapienza University of Rome in 2020, the paper intends to provide a reflection on the degree of diffusion of digital awareness among Italian adolescents and on the impact of school and family digital capital in the development and implementation of such skills.

Keywords: Digital safety, social capital, digital capital, socialization, children.

CREPS AND THE STREBER-APP
AN INTERACTIVE METHOD FOR COMPETENCE-ORIENTED ASSESSMENT AND ITS DIGITAL IMPLEMENTATION

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Abstract

Competence orientation and individualization are paradigms that are becoming increasingly important in modern education. However, especially in courses with many participants the implementation of competence-oriented teaching and assessing quickly exceeds the limits of the lecturer's time resources.

Peer evaluation is generally suitable for giving students individual and comprehensive feedback, at least if the quality of the feedback is high enough. Unfortunately, sometimes it's hard to motivate students to give high-quality feedback.

The CREPS (Create, Review, Enhance, Practice and Score) method was created by the authors in early 2020. It offers an organizational framework that can be used regardless of the size of the student group without significantly increasing the effort for the lecturers. The focus is placed on the skills of self-evaluation and peer assessment, which are both important for competence orientation. The basic idea includes an iterating process in which students generate and enhance test questions based on the given learning content that are assessed and evaluated by their colleagues for quality, correctness, and complexity level. In addition, the best questions are selected for further practicing. Students are rewarded with points for each step in this process; highly appreciated work (good questions and valued feedback) will result in higher scores.

This method and the Streber-App, a mobile application supporting the method, were originally developed for a media technology related university course and since then have been used in six courses in 2020, 2021 and 2022. To evaluate the method CREPS and the supporting app as well as to find out the students' views on and experiences with both method and application, more than 500 students were invited to participate in a quantitative survey.

This paper presents the method CREPS, its underlying didactic considerations, the implementation with the mobile app and the most interesting results from the survey. The participants reflected these concepts and their acceptance in the learning setting. The students' feedback on the use of the method, the support by the lecturers and the concrete implementation using our app, allows us to draw conclusions about the functioning of the previous application and possible improvement for further use.

The self-assessment of the students on their individual learning success gives an indication of the benefits of the method in the university environment.

Keywords: CREPS, didactic method, competence-oriented assessments, peer evaluation, mobile learning.

TEACHING WITH TINY ARTICLES AS AN APPROACH TO STIMULATE TRUSTFUL AND COOPERATIVE LEARNING

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Abstract

The current Corona crises demonstrates the challenge of a fruitful and trustful learning dynamics among people with largely varying backgrounds. The dynamics may easily lead to separating people into groups with attributed properties which finally impairs the learning process. In this study we aimed at designing a new teaching concept for first grade bachelor students in pedagogics, psychology and sports science visiting a lecture on „Learning and Working Strategies ". This included to integrate the students from largely varying background in one teaching program. In order to achieve this goal, we created a novel format of a simplified scientific publication (e.g., a journal paper), called Tiny Article. We asked the students to write a weekly Tiny Article based on their thoughts about the lectures. By writing and sharing

their weekly Tiny Article, the students learned to formulate their reflections and insights as well as to share and complement their understandings in a virtual *common brain*. This collection of knowledge, ideas and reflections were also shared with the teachers of the lectures and opened the discussion of possibilities for networked learning and working in mixed teams.

Keywords: Common brain, tiny articles, cooperative learning, learning dynamics, shared reflections.

INTERDISCIPLINARY PERSPECTIVES ON AN INTEGRATED APPROACH TO EMBEDDING WELLBEING IN HIGHER EDUCATION

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Abstract
Supporting student mental health and wellbeing continues to be a foremost concern in Higher Education (HE), as rates of students presenting with mental health conditions, distress and poor wellbeing increase and as demand for counselling and support services exceeds supply. The age range of students in third level education often coincides with the challenging transitional period of emerging adulthood, where instabilities are further compounded by academic, financial, and social pressures. As HE institutes are distinct settings where academic work, hobbies, social life, as well as health and other services are often integrated, HE presents a unique opportunity to address this wider societal concern through a systems-based lens. Despite calls for holistic, whole of institution approaches, a transformation of student wellbeing has yet to be realised.
During a national initiative for valuing teaching and learning in HE in Ireland, the authors hosted an engaged online event to mobilise learning and action in the student wellbeing community. The event included case study presentations from existing examples of wellbeing in the curriculum, a panel discussion on the national landscape, and an open discussion on the future of wellbeing in HE. Attendees included academic faculty, HE management, researchers, staff from health and counselling services and health promotion, student representatives, careers and support services, and others. Data were collected via the recorded oral contributions, Zoom chat, and an anonymous survey. A deductive thematic analysis was completed with the guiding concept of an institution as a system that supports wellbeing.
Findings proposed shared values as the compass for organisational culture, leaders and decision makers as key enablers of change, academic structures as both a vehicle to promote positive wellbeing and mitigate negative impacts, academic staff as the embodiment of the institution and its values, and the student voice as a guide for informed decision making.
Recognising an institution as part of a wider system of HE which is influenced by political and economic climates, there is a requirement for HE to set out its stall with respect to its purpose and responsibility to wellbeing. This affirmation could enable a shared understanding of and commitment to wellbeing across the sector, through which collaborative and system-based efforts to support wellbeing can be actioned.

Keywords: Wellbeing, higher education, engaged research, systems thinking.

COLLABORATIVE ONLINE LEARNING – A CULTURE APPROACH BETWEEN DENMARK AND GREENLAND

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Abstract
Recently, attempts have been made at Copenhagen University College (KP) to combine traditional learning activities whit a globally teaching concept, where the students aiming to support digital interactions between students across countries. A COIL (Collaborative Online International Learning) involves online interactions between KP students and students from continuing education institutions in a different country, with the focus to collaborate on a subject-specific teaching assignment (Vil-lar-Onrubia & Rajpal 2015).

Compared to traditional face-to-face courses, this course gave students the opportunity to work with the development of digital skills, as well as collaboration with students from other cultures, within the same field of study.

Keywords: E-learning, higher education, culture and intercultural competence, learning experience.

SUPPORTING STUDENT SUCCESS IN HIGHER EDUCATION: WHAT DO STUDENTS NEED?

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Abstract
The number of university students encountering issues with their well-being is increasing every year, with many struggling to seek appropriate support or lacking the necessary skills to identify themselves as struggling. One of the biggest factors affecting this is academic pressure due to being ill-prepared for the independent learning skills required at university, such as self-management and self-regulation, for which many still need support. To understand what these support needs are, four focus groups were carried out with university students across multiple programmes and stages. These were recorded and transcribed for thematic analysis. Four key themes are presented: (1) supports at university are often impersonal and unapproachable in nature, (2) importance of holistic well-being and personal development literacy to enable students to thrive at university, (3) need for better awareness and sign-posting of available supports, and (4) peer influences can have a substantial positive and/or negative effect on students. The implications of these are discussed in relation to improving supports, the importance of involving varied student voices throughout this process is highlighted, and further research steps are discussed.

Keywords: Well-being, student success, higher education.

SUSTAINABLE COMPUTER ARCHITECTURES: USE OF GRID, VIRTUALIZED, AND CLOUD COMPUTING IN ADDRESSING COVID-19 PANDEMIC

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Abstract
Combating electronic waste, energy consumption, as well as carbon emissions requires an enterprise to focus on creating sustainable computer architectures. A sustainable computer architecture identifies ways for an organization to stay competitive while becoming less dependent on computing resources and energy consumption. Sustainable computer architecture is a critical part of Corporate Social Responsibility. This paper highlights the components of a sustainable computer architecture: Grid, Cloud, and Virtualized Computing, and addresses their current applications in tackling COVID-19 pandemic. The COVID-19 pandemic sent virtually all office employees as well as school and University students home worldwide. Working and studying from home has been the only option for them, with in person settings implemented during Fall 21 semester. Under these unprecedented circumstances, sustainable computer architecture providers have become the cornerstone of virtual collaboration and learning platforms on a scale never experienced before. While the Internet has been part of our lives for quite some time now, without scalable Grid, Cloud, and Virtualized Computing platforms addressing the COVID-19 pandemic would have been disastrous. Under the pandemic crisis, sustainable computer architectures have become indispensable for Universities, schools, enterprises, governments, and all virtual students and business professionals.

Keywords: Sustainable computer architectures, grid, cloud, and virtualized computing, COVID-19 pandemic.

TRAUMATISED REFUGEE CHILDREN AND YOUTH AT SCHOOL: RESOURCES AND CONDITIONS OF SUCCESS

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Abstract
Refugee children and youth have been exposed to stressors that cause trauma. Research in the migration context assumes that complex trauma is the result of consistent or repeated traumatic exposure over a period. Many children and youth are exposed to different stressors over a long period and they are still exposed in the host country. The trauma symptoms have a broad spectrum, from impairment in school functioning and increased absence from school to decreased intellectual functioning and academic performance or lower rates of graduation.

In the present study, refugee children and youth, a widely neglected group within school-related research, were considered from the perspective of school and teachers. A model based on Flanagan's critical incident technique revealed the main challenges of schools with traumatised students. To identify such critical incidents, focus group discussions were conducted. The total sample included 55 teachers, 32 of whom were working in primary schools and 23 in lower secondary education in Germany.

The critical incident analysis showed challenges and conditions on different levels of the school, influencing traumatised students' education, integration and self-concept. In the incidents, the teachers referred to circumstances they knew about their students' traumatisation related to experiences in the country of origin, during flight and in the host country. Furthermore, they reported how trauma became visible at school. Beyond the findings on trauma sequelae in general, topics specific to the school context were revealed (e.g., the role of language and the legal framework), which should be considered with regard to their implications. The excessive demands of an unknown school environment were depicted as refusal to attend class, running away, crying for a long time or sitting under the table during the whole school day. Under these circumstances, teaching, learning and acceptance from the peer group could hardly succeed. Such behaviours decrease students' opportunities to socialise and integrate.

These results implicate that successful resources and conditions should be aimed from a systemic perspective. Mixed models of teaching in and outside the classroom enable both social contacts and options for withdrawing. Multi-professional teams would bring together the expertise and perspectives of different professions, raising awareness of trauma sequelae and symptoms in the classroom context. Moreover, the role of extracurricular support should be considered.

Keywords: Models of teaching, refugee children/youth, school, trauma, trauma sequelae.

MICRO-CREDENTIALS – IMPROVEMENT OR FRAGMENTATION IN HIGHER EDUCATION?

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Abstract
This paper analyses various approaches to micro-credentials, one of the most recent trends in higher education. Micro-credentials represent an "alternative" to traditional study programmes for acquiring independent formal qualification in higher education, whereas higher education institutions use it to achieve their mission of supporting adult education, i.e. lifelong learning in higher education. Even though a consensus regarding the definition of the term micro-credentials does not exist at either EU or national level, it can be stated that they represent small-scale and short learning programmes designed to offer specific knowledge, skills and competencies that satisfy social, personal, cultural as well as labour market needs. Apart from different interpretations of the term, the challenges of micro-credentials in higher education are identified in regard to regulatory frameworks, integration into national qualification frameworks, recognition and accumulating of micro-credentials as well as application of quality assurance mechanisms.

Similar to other programmes, micro-credentials are not equally assessed. They can be understood in regard to their purpose and structure, as a mean of flexibility in higher education through the development of individual learning paths, as a mean of supporting higher education in an attempt to become more accessible to non-traditional students as well as an initiative to strengthen adult education in higher education. On the other hand, as the abovementioned education form is oriented towards specific set of knowledge, which is, despite emphasizing other needs, in neoliberal politics predominately oriented towards labour market needs, fragmentation in higher education can be identified. This state is in contrast with holistic nature of study programmes which have to be designed to enable students to acquire well rounded and complementary, theoretical and practical set of knowledge and skills during their respective studies. Despite numerous challenges of micro-credentials, learning programmes designed for the acquisition of micro-credentials deserve systematic consideration in higher education by respecting not only their specific context and structure and higher education system, but also the characteristics of the complete education system.

Keywords: Micro-credentials, higher education, lifelong learning, flexibility in education, fragmentation in education.

STUDENT-CENTERED PROJECTS: RURAL HIGH SCHOOL STUDENTS LEADING PROJECTS IN TECHNOLOGY, IDENTITY, AND SOCIAL JUSTICE

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Abstract
CompuPower is a student-centered program integrating computer technology, identity exploration activities, and community outreach projects. The program was implemented in six rural high schools in Arizona, USA between 2019 and 2021. Students worked in groups in project-based learning environments to create technology-based products (for example, websites, social media campaigns, and public service announcement videos) and to explore their individual identities and skills as they set education and career goals. To understand the CompuPower program from the students' perspective, our research team conducted a qualitative, retrospective interview study using photo elicitation (Harper, 2002). This paper reports on the experiences of 13 rural high school student participants from diverse backgrounds. It explores students' CompuPower experiences, including the technical and non-technical skills they gained throughout the program as they worked on community outreach efforts.

Keywords: Student-centered projects, rural computing education, technology-based projects, social skills, high school STEM education.

CHOOSE YOUR PROBLEMS! A FLEXIBLE LEARNING METHODOLOGY FOR ENGINEERING STUDENTS BASED ON PBL+

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Abstract
Problem Based Learning Plus (PBL+) is a teaching-learning methodology developed by the Teaching Innovation Group INGENIAQ from the University of León in Spain. It is designed for engineering students, including environmental and agricultural engineers, and also for biotechnologists specializing in production processes. PBL+ is based on the traditional PBL methodology, but with a wider aim. The proposed methodology combines three other teaching-learning methodologies, namely the flipped classroom; the use of rubrics for the evaluation of the activity; collaborative learning, and in some cases, the service-learning.

This latter is understood as a service for microenterprises and self-employed workers. A relevant aspect is that students are free to choose the problem they will be working on, thus increasing motivation. The problem must be a real situation confronted by the company. Thus, students get in touch with a company having a close relationship with the subject topics and choose the case to be solved in a face-to-face meeting in conjunction with a company representative. In this way, students have an active role in defining the course's practical assignments. This flexible way of constructing their curriculum has proven to be motivating and it is an excellent strategy to approach real problems in their specialty. Moreover, the contact established between the University and enterprises is a valuable source of information for professors and students regarding current problems in the sector. Notwithstanding, not all engineering sectors are willing to share their issues with students. In this sense, the biotechnological industry is very reluctant to do so, whilst the agricultural sector is prone to it. In this work, we summarize the technical problems affecting the agricultural sector, tackled by the students after 4 years of PBL+ implementation. Sixty percent of the issues are related to phytosanitary topics, mainly emerging pests or diseases. This is a severe threat to the agricultural sector, and many small companies lack the technical knowledge necessary or experience in fighting plant diseases not previously suffered, asking for help to the University. The other 30% corresponds to alterations in crop growth due to abiotic factors. The remaining 10% consists of adapting productive processes to legislative changes.

Keywords: Problem Based Learning, flipped classroom, flexible practices, rubrics, motivation.

A QUALITY ASSURANCE FRAMEWORK FOR OERs BASED ON QUALITY SEALS AND THE PHOTODENTRO SEALS REPOSITORY

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Abstract
Open Educational Resources (OERs) offer unique opportunities to enhance the quality of education and ensure equitable access to learning resources. A major concern, however, is the quality of OERs. This article presents a *generic conceptual framework* for the *Quality Assurance (QA)* of OERs based on *Quality Seals* and introduces the *Photodentro Quality Seals (QS) Repository and e-service* (photodentro.edu.gr/seals), which was initiated and developed to support the quality assurance processes of the Greek national digital OER repositories for primary and secondary education. The proposed QA framework is based on three main entities: *Quality Seals* (describing either a set of quality criteria, a well-defined quality assurance procedure, or a reliable source of origin); *Quality Seal holders* (e.g., OER certifiers); and *Sealings* (representing e.g. certificates for OERs). The *Photodentro QS repository* hosts and manages Quality Seals and Sealings for OERs, which reside on various OER repositories, and provides a registry of OER certifiers. Our experiences from its nationwide use are also discussed.

Keywords: Quality assurance, OERs, quality seals, Photodentro seals repository, e-learning.

THE GAME OF LEARNING!
APPROACHING ECOSYSTEMS THROUGH BOARD GAME DESIGN

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Abstract
Game-based learning is proven to be a motivational and effective approach, especially in STEM education. However, the process of developing a game is rarely used as an educational tool. Ecology is part of the science curriculum in Italian high schools, but for students results not easy to understand the ecosystem structures and functions from a systemic perspective. Furthermore, addressing ecological issues in a changing world will request them not a reductionist approach but a systems perspective.

In this work our main objective is to consider further possibilities offered by board games, exploiting not only the game experience but also the use of the game design process as an immersive motivational learning tool for science, with a learning by doing approach. Ten students have been engaged (16-18) in two activities: events to test and analyse cooperative board games and a laboratory for the development of a new board game on ecosystems ("YouTopia – La Valle ecosistemica"). Two focus groups were conducted, before and at the end of the laboratory, to test students' engagement and to collect feedback about the efficacy of the method to boost interest and specific knowledge in ecology.

The research reveals that game development can foster system thinking skills among students, and act as a powerful learning tool for complex subjects such as ecology. Results are encouraging and the proposed approach has the potential to be applied and replicated in high school and middle school, to foster students' engagement in tackling and understanding topics such as evolution, genetics other topics characterized by complexity and systemic approach. Preliminary results show as the YouTopia game could be a valid tool for citizenship education. By playing the game, students investigate and practice democracy, the mechanisms of land planning and natural resources protection, and the principle of co-responsibility in making choices for the future.

Keywords: Game-based learning, system thinking, science didactic, ecology, student engagement.

PROMOTING TEACHERS' INTERCULTURAL COMPETENCES FOR TEACHING IN THE DIVERSE CLASSROOM

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Abstract
Culturally inclusive education continues to be a challenge in many countries: while teachers attempt to create responsive learning environments and teaching strategies, students from migrant backgrounds still face disadvantages in education. Only 35% of teachers in OECD countries feel prepared for teaching in a multicultural setting. Teachers may lack the necessary sensitivity, knowledge and/or skills, feeling insecure about how to respond to cultural diversity in the classroom. Even if there are theoretical courses in pre-service teacher training programmes, practical training opportunities in actual diverse classrooms are lacking. Also, schools are lacking experienced mentor teachers competent in culturally responsive teaching, as in many countries the demographic situation has undergone major changes in the last decades and continues to evolve. These issues need to be better addressed. The overall aim of our study is improved intercultural preparedness of teachers, through rich and authentic learning experiences. Based on in-depth analysis of current best practices, we will create an evidence-based teacher training program. This will feature video clips of the most common challenging pedagogical situations that may arise in a culturally diverse classroom. We expect the teachers who pass this program to have better intercultural competences so that they can practice culturally responsive and inclusive teaching. In order to assess the impact of the program, we have developed an instrument to measure the teachers' self-reported intercultural competences (knowledge, attitudes and skills) prior to and after the completion of the program. The structure of the questionnaire and differences in the domains of teachers' intercultural competence according to their teaching experience is introduced in the paper.

Keywords: Intercultural competences, training program, questionnaire, diverse classroom.

LEARNING BY DRAWING. A CONVERSATION ON HAND DRAWING WHEN EDUCATION IS GOING DIGITAL

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Abstract
The paper displays a conversation between the two authors. They reunite after ten years since the international summer school *Around the Wall*, which they co-organised and run in Lucca (Italy) in 2012, to reflect on hand-drawing education, mainly through their experience in teaching in different design environments. The conversation tells about how that summer programme represented for the authors the first steps to test some learning strategies that later on fed their teaching approaches, one at the BA in Design at Universidade da Madeira (PT) and the other at the BSc in Product Design at Politecnico di Milano (IT). In particular, Around the Wall summer school focused on hand drawing as a tool of personal discovery, reflection and visual communication, serving each phase of a design process. Also, the summer programme provided the participants with a multicultural and multidisciplinary environment to encourage a sense of collaboration and stimulate creative thinking.
Over the ten years of teaching drawing within different design curricula, the authors encountered various teaching challenges and requirements to respond. Hand drawing education at the Design BA at Universidade da Madeira follows a horizontal approach. The learner is provided with many hours to experiment with different exercises and techniques to identify and develop a personal style for visual communication. At the Design BSc of Politecnico di Milano, the approach is vertical. Here the teaching aims at optimising the few hours dedicated to drawing so that learners can effectively develop their skills and methods for drawing by hand within a product design process.
In the context of a design education moving faster toward digital learning environments - especially forced during the lock-downs in 2020 and 2021 - the authors reflect on their personal teaching experiences to identify educational guidelines for using hand drawing as a creative tool to learn to communicate, in any field. Finally, the authors conclude their conversation by imagining some future teaching/learning scenarios as a cross-pollination result between their personal experiences and considerations.

Keywords: Hand drawing, design education, visual communication, learning-by-drawing.

FEEDBACK GIVEN DURING MATHEMATICS TEST WHILE IN THE THINKING ZONE AND NOT AFTERWARDS?

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Abstract
As tertiary mathematics educators when we are grading papers, we expect to correct any mistakes in solutions and write comments and suggestions on how students could improve their mathematical understanding. This feedback is read by the student, perhaps a week or two later, often may be accompanied by comments such as "What was I thinking?" or "Why did I write that" or "Where did I think that train of thought was going?". Could the feedback be made more effective if the timing of the feedback is changed? What if we could capture students in the moment when they are in the "mathematical thinking" zone. If so, students would be more aware of their motives behind the attempted solution rather than trying to recall a week or so later.
Here, students may gain more understanding of a specific concept while trying to produce a solution rather than leaving a blank space even when they have a sheet of notes available. Educators may gain an insight into students' misconceptions which can lead to improvement of teaching methods for that topic. Rogers and Schnepp (2012) have tried a bartering system in online tests where a written hint is given on request.

Curtin College, in Western Australia, has used the hint system in mathematics units to help students improve not just their grade but, perhaps, more importantly to elevate their confidence in their mathematical knowledge. Curtin College provides a pathway to undergraduate degree courses to Curtin University. Students receive verbal clues, whether face-to-face or online, which usually is a short conversation with students talking mainly. The ideas about feedback contained in Visible Teaching by Hattie will illustrate the reasoning behind this novel practice of the providing feedback during a test for an exchange of marks.

Keywords: Feedback, thinking zone, teaching moment, hattie.

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TEACHING AND LEARNING

"I FEEL LIKE ANOTHER I HAS GROWN": BIOGRAPHICAL LEGACY OF THE COMMUNITY-ENGAGED LEARNING IN HIGHER EDUCATION

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Abstract
Anchored in a qualitative approach, yet informed by the constructivist theoretical perspective, this paper addresses a research issue related to the transformative potential and biographical legacy and impact of community-engaged learning model (service-learning) on twelve students who participated in the *Gender, Sexuality, Identities - From Oppression to Equality* course. This course is the first such in Croatian universities that, integrating the community-engaged learning model, covered the thematic areas of human rights, gender equality, gender-based violence and gender theory. For students who participated in this research, all of it represents the first such educational experience - so far they have not been exposed to the mentioned contents, they have not participated in a course of such specific didactic and methodological features, they have never collaborated with civil society organisations, they have never written reflective diaries, nor were they previously engaged in tasks similar to those that awaited them in this course. This paper therefore intends to contribute to the current academic debate on the positive outcomes of community-engaged learning for students in the context of its transformative potential viewed from the perspective of contributing to changes in student biographies. In addition, the paper seeks to answer the (research) question of whether the narratives of students who participated in such a course for the first time are narratives of disappointment or empowerment, continuity or change, and whether they have developed a tendency to modify (their) habitus? The main identified dimensions of the students' experienced change are classified through new knowledge or competencies, educational and professional paths, intentions of further (civic) engagement and personal development. Drawing on Turner's concept of "liminality" (1969), Bourdieu's habitus (1977, 1984) and Mezirow's Theory of transformative learning (1981), students' participation in the course with full integration of community-engaged learning model is interpreted in this paper as a liminal phenomenon of the otherwise traditional (higher education) teaching and learning field, which led to the modification of students' habitus, while indicating their empowerment and propensity for further socially responsible and active contribution within their communities.

Keywords: Community-engaged learning, service-learning, transformative teaching & learning, liminal experience, habitus modification.

THE LOST ART OF LISTENING

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Abstract
One of the functions of education is the transmission of culture from generation to generation. (Taba, 1962). Yet it is questionable whether music educators are fulfilling this mission... Listeners at concerts of classical music (whether of Western or other traditions) are dwindling and the crowd that frequents the concert halls is mostly older. It seems that educational policy does not invest enough to preserve the gifts of previous generations. In many schools, teachers prefer to please their students by focusing on music that the students listen to (with great enjoyment and expertise without any need for guidance from their teachers) rather than challenging them to become acquainted with musical worlds that are not closed to them and thus complex, classical music is pushed to the margins. Yes, the ones who composed this music were mostly men, mostly white and are mostly dead. However, these unfortunate facts do not negate the fact that the music they created is a gift.
In this paper/presentation we will argue that what prevents teachers from introducing their pupils to this music is not political correctness but rather the absence of teaching methods that make listening to unfamiliar music challenging, engaging and fun. This introduce pedagogies for teaching classical music in

primary schools and preschool. The rationale behind the methods will be discussed while looking at the applications in teaching complex music among elementary and preschool children.

One of the innovative methods for teaching is the "Musical Mirror Method" which was developed by Veronika Cohen (Cohen, 1997). This method is a tool for teaching music listening using simple movements. Based on the principle that movement gestures are the source of musical gestures, the movements project into space, make visible the underlying source of the musical events. The children observe, and join in the movements of the mirror which to evoke an intuitive and spontaneous understanding of the music. As children develop their own musical mirrors, they learn to reflect deeply about their own musical experience, their hearing of the particular piece. Alternatively, graphic representations are presented to the children and later developed by them. Children play, sing compose in these lessons – all develop familiarity with great music and some feel a deep connection which can enrich their lives. They learn how to construct music out of sound.

Keywords: Musical mirrors, involve musical listening, constructivism, musical cognition, emotion.

PROFESSIONAL IDENTITY AND PROFESSION VALUES TRANSPOSED INTO NURSING EDUCATION

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Abstract
Professional identity is the concept that describes how we perceive ourselves in our occupational context and how we communicate it to others. Professional identity is not static, but fluid. It is strongly influenced by how we see ourselves, how we perceive others and how we are viewed by society.

Professional values are inherent characteristics of every profession and are part of the professional identity. Personal values are a powerful tool that influences our lives. They are the standards that each of us defines in order to live according to them and often influence our attitude and behavior. The profession of nurse/midwives is defined by the values that each practitioner experiences every day in relation to his profession and each patient with whom he interacts.

The professionalism of nursing profession requires that the nurses, midwifes to be able to provide quality health care services adapted to the society healthy needs, no matter age, social position, gender, political and sexual orientation or other differentiation criteria. In this way they will be able to increase the population's health level.

The Order of Nurses and Midwives of Romania implemented POLMED project which objective was to develop a set of fundamental professional values for nurses and midwives, for the benefit of the medical-patient staff relationship. The project aimed at developing an analysis of European public policies on the values of nursing and midwifery, conducting a survey of the current situation in Romania on the values of nursing and midwifery by involvement of 200 nationally selected nurses and midwives, as well as the training of 45 nurses and midwives in the design and evaluation of public policies.

As a result, the ability of medical personnel to meet the citizen's need to have quality health system is directly linked first and foremost to the reform of the educational system of professional training, which internalizes a values system centered on professionalism, empathy towards the patient and cooperation with patients and other categories of professionals in the medical system.

The paper work is divide in two parts, the first part presents a survey in order to develop a set of fundamental professional values for nurses and midwives, and the second part presents the way these values were transposed in the nursing education. The paper presents a study on the ways of transposing the professional identity and profession values into the nursing education.

Keywords: Education, values, identity, nursing, profession.

TEACHER-GENDER: EXPERIENCES OF MALE TEACHERS IN THE FOUNDATION PHASE IN SOUTH AFRICAN SCHOOLS

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Abstract
In South African primary schools, the Foundation Phase (Grade R, the year before formal schooling until Grade 3) is dominated by female teachers because few men enrol for a teaching qualification in this phase. There are various reasons why there is a reluctance by males to teach in this phase. These include parental nervousness around men who decide to seek employment in a traditionally female profession, scepticism in males' abilities to teach young children as well as their female counterparts, the perception that men cannot handle the responsibility of taking care of young children and the perception that men who choose to teach young children are unnatural, homosexuals and deviants. The study was motivated by two factors: firstly, by the researcher's interest in male teachers who teach young learners (because of the scarcity of male teachers in early education); and secondly, by the large number of students who enrolled for the B. Ed Foundation Phase degree at a South African university. The aim of the study was to explore the experiences of male teachers in the Foundation Phase. Data were collected through focus group and face-to-face interviews and were analysed thematically. The participants were nine male teachers who teach in the Foundation Phase. The researcher wanted to obtain narrative portraits and in-depth understanding of the participants' experiences as males in a reality that is female-dominated. The results show that in many schools, male teachers experience gender prejudice and gender stereotyping from both male and female colleagues, and often from parents. For example, some of the male participants asserted that teachers make fun of them by saying that men cannot be 'nannies'. However, some schools were happy to employ male teachers, regardless of the societal misconceptions about male teachers teaching young children. It is recommended that, amongst others male teachers in the Foundation Phase be encouraged and educated about strategies to cope with criticism in order to be resilient.

Keywords: Foundation phase, male teachers, gender, female-dominated, young children.

EXAMINING PARENTAL INVOLVEMENT IN CHILDREN'S PRIMARY EDUCATION IN RURAL MALAWI: THROUGH ECOLOGICAL SYSTEMS THEORY

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Abstract
The importance of quality education is encapsulated in SDG # 4 – *Quality education for all* which includes lifelong learning in inclusive settings and is considered to be one of the key factors to escape poverty. In Sub-Saharan Africa low educational attainment has continually hampered the fight against poverty, nonetheless education is recognised there as a means for expanding human capabilities and choices. One of several factors which has been universally recognised as positively affecting educational achievement is parental involvement. The purpose of studying parental involvement in rural Malawi will give us an important insight into the extent of it and will explicate to all concerned the importance of parental involvement when it comes to educational attainment in the strive for poverty reduction.
This study analyses parental involvement in their children's primary education in four rural primary schools in Malawi, focusing on the home and the school settings. Through focus group discussion and semi-structured interviews information was obtained from 19 parents, 24 teachers, along with four headteacher. We applied the micro- and mesosystem elements from Bronfenbrenner's ecological systems theory to make sense of data. The home and school settings represent the autonomous microsystem whereas parental involvement is part of the mesosystem. Findings indicate that the microsystem appears to be active however the mesosystemic interaction is limited and misinterpreted. Parents do participate in their children's education and assert for instance that they do come to school somewhat regularly to follow up on their child's progress and behaviour. However that contradicts the teachers' view on how involved

parents are which claim that they hardly ever meet parents at school. Both parents and teachers are aware of the importance of parental involvement nonetheless they need to build and strengthen their mutual relationship and interactions to better support learners. The school also needs to communicate positive aspects of children's learning to parents. Opening up positive reinforcement could enhance parental involvement.

Keywords: Ecological systems theory, home-school settings, rural primary schools, Malawi, parental involvement.

HERE AND NOW: THE LASTING EFFECTS OF MINDFULNESS ON STUDY-ABROAD PARTICIPANTS

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Abstract
The fields of international education and study abroad are inherently conducive to new experiences and attentiveness to the moment. However, they have not been fully explored as areas of interest for the integration of contemplative practices. We present a case study of a group of 10 respondents, eighteen months after returning to the US from a study-abroad program in France. The scaffolded curriculum of the program centered around mindfulness and the use of the five senses to engage with and learn about the host culture. During the program, students practiced techniques, reflected collectively and metacognitively in writing assignments. More than a year after the study-abroad program, ten of the thirteen students volunteered answers expounding on their connection to mindfulness. Content analysis of their answers indicates that students perceive a positive impact of mindfulness on their personal, professional, and academic lives. Notably, results indicate that students may have experienced an increased awareness of and attentiveness to their surroundings, improved interoception and metacognition, a greater ability to connect with those around them, and an enhanced capacity for recall and memory.

Keywords: Contemplative pedagogy, mindfulness, study abroad, intercultural communicative competency.

I'M NOT A ROBOT - REPORT ON THE IMPLEMENTATION OF AI IN EARLY CHILDHOOD EDUCATION

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Abstract
Artificial intelligence (AI) technology is creating a new reality in daily life with e.g., smart home functions. This in turn has a major impact on both the socialisation processes of children and communication behaviour in family. The increasing technology-driven saturation of our everyday routines with AI is a crucial challenge for educational institutions. However, looking at AI in pedagogical work in kindergartens from a scientific perspective, the topic still has some research gaps. Only a few articles, describe efficient education concepts aiming at fostering AI literacy (cf. Chen et al., 2020; Kandlhofer et al., 2017).
In Early Childhood Education (ECE) practice, however, there are many reservations about technology, digital media, and AI in particular (Mertala, 2017). Nevertheless, it is imperative that pedagogically trained professionals understand in depth the implications that arise from the interaction between humans and AI. Within the framework of the project, which is focused on pedagogical practice, educators are encouraged to deal with the topic of AI on the one hand and to test concrete implementation possibilities with didactic materials, so-called toolboxes, on the other. In this way, the use of AI can become a key competence both in pedagogical professional training and in the educational biography of children.
Consequently, the aim of *I'm not a robot*-project is to design transferable and practical modules within the further training of educational professionals to enable an active, creative, and conscious use of AI-based technologies throughout Europe. Furthermore, the goal is to develop and test innovative didactic methods regarding AI teaching and learning materials. The EduSpace Lernwerkstatt -a working unit of the

Free University of Bolzano- will conduct the mixed-method study in close cooperation with the project partners, who will all carry out development and testing independently and with country-specific characteristics. The ultimate aim is to develop training programmes for educators that will enable them to integrate current technological developments into their everyday work in a meaningful way.

Keywords: Artificial intelligence, kindergarten, method boxes, training programmes for educators, EU project.

CHALLENGES IN TEACHING PROGRAMMING

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Abstract
Teaching is a profession that helps learners to gain new knowledge and insight. Therefore, a teacher needs to choose what to teach the students and how to approach them in an engaging and understandable way. In teaching programming, choosing the content and engaging students can be a challenge because the term programming is used in a variety of ways and contexts, which in turn demands different competencies. This paper uses the Didactical Triangle to discuss some challenges that arise when teaching programming on content, teacher, and student level. Some challenges arise from the structure of programming (syntax, interfaces, approaches, experience, and qualifications), while others are developed from the individual context of the learning situation (role of the teacher, students' motivation, expectations). While programming in computer science is relatively well described in the subject literature, programming in other professions is not well defined. Teaching computer programming in different courses can cause different challenges. Some situations of learning programming might be difficult for computer science students, while other situations might cause challenges for «non-data» students. This paper will present teachers' experiences combined with the theoretical view of challenges that arise when teaching programming in different study programs.

Keywords: Programming skills, digital competencies, 21st-century skills, didactics in IT education, introduction to programming.

PRONUNCIATION EVALUATION CRITERIA FOR EFL LEARNERS

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Abstract
Pronunciation is one of the competencies foreign language learners of English are implicitly or explicitly judged for in classroom context as well as real-life communication. At the same time, both teachers and learners express concerns concerning this competence, as relatively little attention is being paid to pronunciation issues. While accuracy was desired in the past, comprehensibility is preferred as the goal of pronunciation instruction in recent years. Mistakes and errors the speakers make vary across the language background of speakers and can be manifested at segmental and suprasegmental levels; however, familiarity with the topic discussed may help overcome many obstacles the foreign language speakers may make. Pronunciation may be judged by human raters as well as automatically by specialized software. The presented study aims to current practices presented in research papers published in the past ten years.
The results suggest different criteria applied to pronunciation evaluation.
The paper presents partial research outcomes of the projects KEGA 019TTU-4/2021 Introducing new digital tools into teaching and research within transdisciplinary philological study programmes and 7/TU/2021 Pronunciation mistakes of pre-service teachers of English.

Keywords: EFL, pronunciation, evaluation, comprehensibility, accuracy.

EVALUATION OF PRE-PANDEMIC AND PANDEMIC EDUCATION FROM THE PERSPECTIVE OF A UNIVERSITY INSTITUTE STUDENTS

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Abstract

The circumstances of the COVID-19 pandemic have brought a turbulent change to all levels of education around the world. Even in these cases, however, it is necessary to maintain accountability, i.e. the responsibility of educational institutions for both consequences and quantity and quality of their services. For this purpose, various evaluation processes are implemented across universities to identify and ensure the quality of teaching and learning. In this context, the paper deals with the first results of a comparison of higher education in both pre-pandemic and pandemic period, causing the closure of all types of schools and a complete, forced transfer to a distant, untested forms of education. In both monitored periods, the same research tool was used, namely an online evaluation questionnaire, in which the respondents had the opportunity to express their opinions on the lectures and seminars studied, on the conditions of teaching and learning, on the approach of the teacher, and on the overall assessment of the course. The target group were students of bachelor study programmes of a university institute in the Czech Republic. This study provides evidence that, although the pandemic struck without warning and very fast, the university institute concerned was able to cope with the necessary reforms in the organization of education, and from the students' point of view, while maintaining the quality of teaching provided. Even, the complete distance teaching and learning at the time of the pandemic was on average rated better than the pre-pandemic.

Keywords: Evaluation, higher education, distance learning, quality of education, students' satisfaction.

THE IMPACT OF COVID-19 ON COMMUNICATION PRACTICES IN THE ENGINEERING WORKPLACE: A STUDENT-DRIVEN SURVEY AND AN EXPLORATION OF POTENTIAL CURRICULAR RAMIFICATIONS

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Abstract

In 2012, the Faculty of Industrial Engineering Technology of Leuven University, Campus Diepenbeek, initiated a student-driven action research project to optimize the communications curriculum and tether it to trends and evolutions in the engineering workplace. The methodological pivot of the action research cycle is a questionnaire that students send out to professional engineers on a yearly basis. To date, the questionnaire has been completed by over 2000 engineers. The survey polls the importance and salient features of contemporaneous communication practices for engineers, on the basis of which the curriculum is continuously refined and optimized to match workplace expectations. The existence of this historical dataset allowed for an accurate measurement of the impact of COVID-19 on communication practices in the field of engineering. The perhaps unsurprising, but nevertheless striking rise in online meeting and collaboration practices in the engineering workplace prompts urgent curricular questions with potentially far-reaching ramifications, as the communications curriculum rests, as yet, on a bedrock of traditional, face-to-face interaction. With urgent 21th century concerns surrounding mobility and climate change, screen-to-screen interactions might well evolve into the "new normal" for business communication. This presentation discusses the findings of the questionnaire on the impact of COVID-19 on engineering communication practices and follows through with a preliminary exploration of the ramifications of these findings on the future communications curriculum for engineers.

Keywords: Engineering education, COVID-19, communication, action research, curriculum.

HOW TO BECOME POLITICAL? BASIC CONCEPTS FOR EXPLORING EARLY CHILDHOOD UNDERSTANDING OF POLITICS

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Abstract
In the interdisciplinary project *PoJoMeC*, we investigate children's understanding of politics at preschool and primary school age. The interdisciplinary research approach is based on the perspectives of political didactics, literature and media didactics, and journalism. Initially, we will use qualitative approaches to find out how children's political awareness is shown. Our research methods focus on the one hand on the children's explicit knowledge, but on the other hand already on concepts of rule-governed action. The different degrees of abstraction of these concepts are based on a modification of the ecological model of human development according to Uri Bronfenbrenner (1979).
The paper reconstructs the argumentative process of developing an acceptable interdisciplinary concept of politics for our joint research. Considering political didactics, literature and media studies, and philosophy, a research framework is presented that does not start with terms and concepts but considers more fundamental forms of social perception.

Keywords: *Political thinking, political literacy, early education, early education research, global citizenship education.*

DELIVERING INNOVATIVE, ONLINE TEFL COURSES TO FOSTER PROFESSIONAL DEVELOPMENT AND POSITIVELY IMPACT ENGLISH LEARNERS

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Abstract
This paper reports on findings from a U.S. federally-funded research project involving American universities that created online courses to develop Jordanian K-12 English teachers' instructional strategies and communication skills who are employed in disadvantaged or vulnerable rural and urban schools. The four innovative, online courses address Jordanian English teachers' desire to motivate learners (Al-efeshat & Baniabdelrahman, 2020), develop students' critical reading skills (Bataineh & Al-Shbatat, 2018), reduce students' reading anxiety (Al-Shboul et at., 2013), and foster metacognitive reading strategies (Alsarayreh, 2020) among other challenges. Studies have found that increasing mobile technologies to students and teachers and integrating basic technology in public and refugee schools would profoundly impact the scope of learning and instruction (UNESCO, 2018; UNHRC, 2018). Further, research on teacher quality shows that weaknesses in teachers' pedagogical content knowledge (PCK) and classroom practice undermine effective student learning and achievement (Phetla & Newman, 2020; Pontefract and Hardman 2005). Continuing professional development and PCK positively impact schools and embodies the ability to evaluate students thinking, plan appropriate learning opportunities, and modify, combine, and use instructional materials to develop conceptual understanding (Darling-Hammond et al., 1999). Teachers' professional development through teachers' collaboration has been reported to be effective for the improvement of schools' performance and students' learning outcomes in all curriculum subjects. Research repeatedly demonstrates that continuing professional development makes a difference to teachers' pedagogic knowledge and skill which is reflected in enhanced student learning outcomes (AL-Wreikat & Bin Abdullah, 2010; Mahmoud, 2015). This project seeks to narrow these gaps and positively impact learning outcomes and student competencies through the innovative online and in-person PDP with Jordanian teachers of English. Using gathered qualitative and quantitative data, we identify the program's impact on TEFL teachers' integrated service learning projects and culturally relevant pedagogies to

positively affected students' learning, advanced teachers' knowledge of research-based instructional strategies, and addressed other challenges identified by the teachers. We will also share the process for selecting teachers to participate in the program and collaborations we developed with international stakeholders.

Keywords: TEFL, distance education, learners, innovation, service learning.

MENTORING STUDENT TEACHERS FOR SELF-DIRECTED PROFESSIONAL LEARNING THROUGH THE USE OF E-PORTFOLIOS DURING TEACHING PRACTICE

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Abstract
Teaching Practice is a critical phase of teacher education that provides opportunities for student teachers to reflect on the development of their teaching philosophies and put them into action. Self-directed learning pertains to a process where these students take responsibility for their own learning by setting outcomes, choosing material or human resources, selecting appropriate learning strategies, and evaluating their learning. E-portfolios as learning tools can be utilized to facilitate the development of skills for self-directed learning. Good quality mentoring in schools contributes to the development of critical professional skills of student teachers and ensures the best quality learning experiences for pupils. This paper is arranged as an ideas paper that seeks to explore the intersections between mentoring, self-directed professional learning of student teachers and the use of e-portfolios during teaching practice. The most common trends on these topics will be described and intersections identified, thereby exploring how self-directed learning could be supported by the use of e-portfolios and good quality mentoring. Findings showed that e-portfolios are practical tools for self-directed, reflective and collaborative professional learning. Further findings show that formal mentoring programs are essential to meet student teachers professional learning needs. These findings will encourage mentor teachers to optimally use e-portfolios to enhance student teachers self-directed professional learning.

Keywords: Mentoring, self-directed professional learning, e-portfolios.

HOW RORY'S STORY CUBES CAN IMPROVE THE ABILITY OF STORYTELLING IN WRITING AND SPEAKING

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Abstract
Using board games in the classroom is an opportunity for experiential learning and teaching. The presentation is an example of how board games can be used in mother tongue teaching. Our previous questionnaire proves that 9–10-year-old children show a positive attitude towards board games, and its use in lessons helps to increase interactions between students. In addition, cooperation within the group was strengthened. We have reflected on this with a new project. Our goal is to examine how the popular board game, Rory's Story Cubes, can develop written and oral communication of 9–10-year-old students. In the first period, essays were written by the members of the experimental group and the control group, in which five previously specified words were used. The quantitative and qualitative indexes of the data were analysed by Mean Length Utterance (MLU) and the Hungarian adaptation of Developmental Sentence Scoring (KFM), and creativity was considered. In the second phase, the members of the experimental group took part in an activity process that lasted 15 weeks and was held twice a week. The games with the Story Cubes were carried out under the supervision of the methodical leader of the experiment and recorded with the video camera. The oral texts were analysed in the same way. In the last period of the process, the participants again wrote an essay. The results show that the consistent use of the given board game is

beneficial for the semasiological and syntactic cohesion of the students' oral and written texts. The project's achievements may contribute to the widespread use of Rory's Story Cubes, thereby expanding the methodology of native language teaching.

Keywords: Board games, Rory's Story Cubes, primary school, creativity, cooperation.

DEVELOP CRITICAL THINKING FROM FREEHAND DRAWING TO DIGITAL PROCESSES

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Abstract
Learning never stops, and neither does teaching. Stimulating critical thinking at the university plays a critical role in shaping a generation of professionals capable of meeting the ever-changing challenges of the modern world. The experience is related to the course of Building Drawing in the first year of Building Engineering at the Politecnico di Torino. The methodological approach adopted explores the potential of the drawing itself as a language of communication for the construction sector. The course becomes a learning path with the students: theoretical notions are provided as the foundation, then tools and methods for representing the survey and the project between tradition and innovation are analysed and evaluated with a critical attitude. Real-world (freehand sketching), digital (CAD vs BIM), augmented and virtual practices are presented to provide a synoptic picture of possibilities that the student may choose to use in subsequent courses and in working life. The recent pandemic has promoted further opportunities to innovate in teaching by adopting tools that stimulate creativity. The teacher becomes an avatar who can interact with students in cyberspace to evaluate and discuss project ideas. Students are continually asked to self-reflect and assess lesson content by identifying key concepts. The final evaluation also involves a discussion of a mind map in which keywords are put in order, reworked, linked to form a personal interpretation of the teaching. Through the introduction of these actions, it has been noticed an increasing involvement of students, both individually and in groups, leading to the achievement of quality results sometimes higher than required.

Keywords: Critical thinking, mind map, digital drawing, BIM, virtual and augmented reality.

SURVIVAL MODELS FOR PREDICTING STUDENT DROPOUT AT UNIVERSITY ACROSS TIME

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Abstract
The aim of this study is to develop a tool to recognize major responsible factors of student dropout through time, both in terms of student characteristics and type of degree courses, and to accurately predict the student time to dropout, if any. From a predictive point of view, we aim at developing an early warning system to early predict the status of a student career, identifying the risky timings in terms of dropout, as a supporting tool for early interventions policies. To this end, we follow a Survival Analysis approach, applying time-dependent COX frailty models, in which the target variable is the time to dropout of students within the first three years after the enrolment. Student careers are tracked over time, collecting time-dependent information. Results show that first year information is already powerfully predictive of the time to dropout and that dropout trends differ across degree courses and student profiles.

Keywords: Student Dropout, Higher Education, Survival Analysis, Frailty COX models, Time-dependent covariates.

ORGANIZATIONAL ISSUES

A PRACTICE PERSPECTIVE ON DOCTORAL EDUCATION – EMPLOYER, POLICY, AND INDUSTRY VIEWS

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Abstract
As we enter the Transformative Age of digital and green transitions, the European Commission and other global policy-makers herald universities as key players in innovation and transformation. PhD students ostensibly represent the pinnacle of higher education and suitable candidates for policymakers' visions. Academic research has shown that traditional PhD programmes may fail to equip their graduates with the necessary skills and knowledge required. Practitioners' voices have, however, been less well heard. We review thirteen policy and industry reports relating to doctoral education including EU policy documents, wider policy contributions across the EU, and industry-led reports. We also conduct thirteen semi-structured interviews with PhD employers or experts in PhD recruitment/placement. Findings highlight the lack of transferable skills in doctoral graduates, but also shed new light on attributes and experience as key hiring factors. We examine interdisciplinarity and intersectorality as potential solutions to employer and policymaker demands.

Keywords: Doctoral education, practice perspective, programme design, skill acquisition, PhD programmes.

EXPANDING THE ROLE OF UNIVERSITIES TO PROMOTE SOCIAL AND ECONOMIC DEVELOPMENT OF THE TERRITORY: A NEW MANAGEMENT PARADIGM AT RIO DE JANEIRO STATE UNIVERSITY

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Abstract
The present work deals with the management experience at Rio de Janeiro State University– UERJ, where a new management and governance model was adopted in order to strengthen university autonomy.
This new model has given rise to the expansion of universities' responsibility and has reorganized management sectors in a process that involves the renewal of internal legislation with the view to regulate and guide the university's action in the process of knowledge transfer to society through services.
The result of this new regulatory framework is the improvement and increase in the spectrum of partnerships between universities and governments, the strengthening of pre-existing partnerships, and, finally, the attribution of new responsibilities to the so-called supervisory units or "supervisory bodies of the central administration of the university".
Great part of the efforts aimed at rearticulating UERJ's internal system points to the need to overcome the historical internal fragmentation, redirecting management to an articulated system which is able to reflect the political will of the authorities involved, in the sense of an autonomous and radical evolution of the institution's internal governance.
It can be stated that the transformations seen at UERJ are part of a broader process inscribed in the scope of the current management strategies to bring universities closer to the demands of society. Its main characteristics are, as follow: the integration of disciplines and thematic areas that enhance knowledge in the face of regional development; the prioritization of partnerships with the public sector, the valuing of innovation and projects with the potential for technology transfer, the expansion of the role of universities to promote social and economic development of the territory; the strengthening of the role of universities

for the planet sustainability; the financing associated with academic results (publications and students' involvement), the sophistication of monitoring, management systems and their indicators; the encouragement of regional action and the implementation of correlated management and governance models. This work, therefore, presents a brief balance of this experience based on systematized data between 2020 and 2021.

Keywords: Higher education, education management, university and society.

RELATIONSHIP BETWEEN SCHOOL CLIMATE AND SOUTH AFRICAN GRADE 9 LEARNER ACHIEVEMENT IN MATHEMATICS AND SCIENCE

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Abstract
School climate has become a staple of organisational-educational research and is considered here in relation to learner academic achievement. In South Africa, poor learner achievement in mathematics and science has occupied the centre stage with the release of the Trends in International Mathematics and Science Studies (TIMSS) 2019 results. At Grade 9 level, 39 countries participated, and South Africa was very last and second from the last in science and mathematics achievement, respectively. We used a quantitative design with a positivist philosophical stance. Maslow's hierarchy of needs was used as theoretical framework, as learners attending a school with a negative climate cannot devote their full attention to learning. We analysed cross-sectional TIMSS 2019 South African data by considering two models: one with the dependent variable being mathematics achievement and the other with it being science achievement. For both models, gender and socio-economic status were included as control variables, the sense of belonging scale was included as a predictor at learner-level, and nine predictors relating to school climate were considered at school-level. The multi-level analysis using HLM software showed that learners with a high sense of belonging, schools with sufficient instructional materials, and technologically competent staff are significant predictors of both mathematics and science achievement. We recommend that South African schools with insufficient instructional materials be prioritised for receiving the necessary material and that all South African teachers be trained in the use of technologies, as these are significant predictors of learner achievement. This will, in turn, enhance learners' sense of belonging, which is also a significant predictor. Another recommendation is that stakeholders invest in school climate surveys and other interventions supporting a healthy school environment, as many researchers, including this study, have shown that a healthy school climate is a significant predictor of learner achievement. Additional research is encouraged to establish the nature of the impact that a healthy school climate has on learner achievement through longitudinal studies where causation can be proven.

Keywords: School climate, learner achievement, TIMSS 2019, hierarchical linear models.

PERCEIVED REALITIES OF RURAL PRIMARY SCHOOL TEACHERS IN MALAWI: THROUGH BRONFENBRENNER'S ECOLOGICAL SYSTEMS THEORY

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Abstract
The importance of teachers in quality education is undisputed and effective teaching depends largely on the knowledge, skills and motivation of the teachers. However, creating and promoting primary school environment conducive to quality education is often hindered by structural factors, such as poverty in rural areas. Teachers are reluctant to be deployed to remote areas mainly due to inadequate living and working conditions and limited opportunities for professional development. Housing provision and perceived low status of the teaching profession also factor in some teachers' reluctance to accept a teaching position in a less developed area. For some teachers, becoming a teacher is often seen as a last resort but for others, teaching may represent the most attractive profession.

In this study, we examined the experiences of teachers in four rural primary schools in Malawi, focusing on the quality of education. The objectives of the study are to shed some light on teachers' living and working condition and their perception of the teaching profession. We followed a qualitative research approach and data were collected through semi-structured interviews. Data was obtained from 24 teachers, six from each school, four headteachers representing the schools and four primary education advisors (PEA). Bronfenbrenner's ecological systems theory was applied to interpret data. The teachers, headteachers and PEAs are represented in the microsystem whereas their interactions comprise the mesosystem. Teachers' living and working conditions are represented in the exosystem, and lastly the macrosystem consists of customs and laws of society.

Main findings indicate that the microsystem appears to be somewhat active but interactions between units within that system are weak resulting in limited mesosystemic interaction. Teachers, headteachers and PEAs in these four schools can strengthen their interaction in order to improve the quality of education. Exosystemic and macrosystemic factors also need to be strengthened by improving both working and living conditions of rural teachers.

The purpose of examining teachers' living and working conditions in rural Malawi will provide us with important insight into what may partially or potentially cause the low educational attainment which is the case in rural Malawi as well as in other rural areas in Sub-Saharan Africa.

Keywords: Ecological systems theory, Malawi, rural primary schools, teachers' living and working conditions.

CONECTA: A VIRTUAL SHOWCASE FOR SOLVING PROBLEMS REQUIRING KNOWLEDGE AND TECHNOLOGY

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Abstract
The project aims to contribute to the strengthening of university-society relations, agreeing that higher education is an important means of promoting citizenship, combating social inequality, increasing the competitive capacity of States, increasing local economies, either through the placement of skilled workforce on the market, or through a likely emergence of innovative markets and the generation of a range of sociocultural factors which are essential to promote life in society.

The model of higher education, open and articulated with external actors, occupies a prominent place in many countries. The so-called "triple helix": universities – governments – society, constitutes an undeniably successful model. This model has helped to leverage national economies, which simultaneously has generated virtuous processes of economic development and appreciation of higher education institutions in these countries.

The necessary process to transform scientific creation and technological innovation into something able to improve the life quality of populations and cities requires countless interactions among the world of science and technology, governments and the market. In this context, scientific and technological activity is perceived as a complex process in which the strategic integration between actors in the three domains and the establishment of networks become the key elements.

This is about understanding university governance from a more contemporary perspective, considering the present day complexity and the availability of existing technological tools, enabling the establishment of a dialogue and knowledge sharing in a plural and democratic way.

In times of so many challenges, it is up to the university to exercise creativity and critical thinking to find sustainable and ethically valid paths that guarantee the consonance of the public university with the country's development, reaffirming the institution's role in society, as its participation in confronting inequality and the different forms of discrimination based on gender, race, religion, as well as, and especially, THE ROLE OF THE UNIVERSITY AS A VECTOR OF ECONOMIC AND SOCIAL DEVELOPMENT, highlighting its potential for collaborating in the production of innovative solutions to overcome problems requiring technology and knowledge.

It is understood that a connection between theory and practice and, even more, a connection between different areas of knowledge will lead to the interdisciplinary approach demanded by social issues, making CONECTA a showcase of easily accessible solutions and innovations.

Thus, the project proposes the creation of an application which can 1) SHARE KNOWLEDGE: Produce a database composed of projects already carried out by the university, in a user-friendly language accessible to the non-academic public and focused on experiences, innovative methodologies and solutions; 2) IMPROVE AND EXPAND INTEGRATION UERJ – SOCIETY: Strengthen UERJ's integration with society through scientific dissemination and technology transfer; and 3) GENERATE POSITIVE IMPACT: Create, implement and consolidate an application to promote projects developed by UERJ, and which are able to provide benefits to society (Public Management, Industrial Sector, Civil Society, etc.).

Keywords: Higher education, education management, university and society.

THE POSTPANDEMIC REVITALIZATION OF A MINORITY SERVING INSTITUTION THROUGH STRUCTURAL AND OPERATIONAL ORGANIZATIONAL CHANGES

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Abstract
St. Augustine College, a small, bilingual higher education institution, survived the pandemic by implementing structural and operational changes. The primary objective was two-fold: to create organizational changes that addressed the consequences of an unprecedented pandemic and to create the tools and mechanisms needed to sustain those organizational changes. Despite the circumstance, the institution's commitment to its nontraditional student population, primarily female (78%) and Hispanic students (85%), motivated the necessary changes.

The theoretical framework that supports this research study is the work of Kurt Lewin (1942)'s 3-Stage Model of Change. A mixed methods study determined the framework for data collection and analysis. The newly created Office of Academic Effectiveness (OAE) was the unit of analysis. The OAE is responsible for the quality assurance of the institution. Through qualitative data including interviews and observations, the Latino Educational Model, the new foundational teaching and learning philosophy of the institution, was developed. The quantitative data that served as the model's creation was generated from four satisfaction surveys as well as students' evaluations of course and instructors.

This study provides a close examination of the office's accomplishments and failures, institutional obstructions and passageways, and the balancing of existing traditions with new best practices. As a result of an arduous reframing process intended to revitalize the traditional culture, the college community united to create new units, revamp enrollment and admission procedures, update technology for different instructional delivery modalities, hire system disruptors, design and implement new policies, enforce assessment measures, craft onboarding regulations, establish faculty evaluation guidelines, build new academic programs, restructure and reevaluate the curricula, set up academic internships, conceive new certificates, and rebrand the institution, among other initiatives. The institutionalization of these changes seems to be the catalyst that will lead the institution to reclaim its position in the higher learning community.

Keywords: Organizational change, quality assurance, restraining forces, driving forces, reframing.

FINNISH EARLY CHILDHOOD EDUCATION AND CARE LEADERS' PERCEPTIONS OF THEIR ROLE IN SUPPORTING STAFF'S WELL-BEING

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Abstract
It is widely recognized that in early childhood education and care (ECEC) environments, work-related well-being is one of the key elements of job satisfaction and coping at work. The well-being of ECEC professionals strengthens the quality of early childhood education and care and supports children's well-being, development, and learning. ECEC leaders have an important role in boosting their staff's well-being, especially when working in groups with children with special educational needs. The purpose

of this study was to investigate Finnish ECEC leaders' perceptions of their role in supporting their staff's well-being. The study involved five ECEC leaders, and data was collected using semi-structured interviews. The findings showed that ECEC leaders brought up different kinds of dimensions concerning their role in supporting staff's well-being: conversation partner, administrative actor, negotiator, pedagogical mentor, supporter of social cohesion, and supporter of expertise. By working according to these roles, ECEC leaders affected to their staff's work-related well-being by decreasing job demands and increasing job resources. This research provides valuable information concerning the ways to support the well-being of ECEC professionals and leaders' role in this crucial element of high-quality early childhood education and care.

Keywords: Early childhood education and care, work-related well-being, leadership in early childhood education and care, job demands-resources model.

PEDAGOGY AND GOVERNANCE: A PERFECT MATCH

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Abstract
It is a truth universally acknowledged that scholars argue that standards and performance measurements are instruments of control that have a profound influence on the day-to-day lives of individual academics, students, professional services staff, as well as organizations, causing the education environment damage. However, the authors argue in this paper that a strategy that triangulates the perspective of the teacher, the learner and the administration can and does result in an improved experience for the students. It also enables raised standards of good practice; opens up space for innovation in learning and teaching; drives progressive policies such as inclusion, access and equalities, and recognizes civic and international opportunities. The authors of this paper hold two different roles in the School of Humanities at the University of Glasgow, that of Deputy Head of the School of Humanities and Head of School Professional Services. The experience of jointly developing and delivering a School L&T strategy across six subject areas has had an effect on our student feedback and that of our staff. Developing a professional Services team that is engaged in the strategy is a key to successful delivery. However, it is not simply team building that delivers success, it is taking a student experience based approach. Ensuring our L&T strategy is built to enhance and deliver an excellence in the entire experience of a student while at university has brought about engagement from teaching staff, professional services team and students. Together, we explore the methods used to develop our strategy and the tools we use to monitor, reflect, adapt and enhance as necessary. We debate methods of measuring success, using not only the standard sector tools but also in terms of sustainability, health and wellbeing of the staff and students. We are committed to excellent learning, teaching and assessment; we seek to re-ignite passion for, curiosity about and commitment to advanced enquiry; rooted in the knowledge, expertise and experiences of all staff and students. Our partnership supports our core focus on developing students who are connected, civic-minded citizens and graduates who are well prepared for their chosen professions and future success.
Our team approach ensures an excellent student learning experience though a commitment to enhancement. We review, reflect on and develop our teaching practice, processes and facilities to engage our students in innovative, relevant and challenging curricula. Central to this is partnership working with our diverse learning community to understand their needs and to provide them with flexibility in what, how, when and where they learn. Combined with ethical and social awareness to engender positive behaviours free from discrimination, harassment and unfair treatment. Our approach develops, supports and encourages our staff, who in partnership with our students, create a learning experience, and a student support and engagement culture that reflects the ethos of the professional services and academic staff.

Keywords: Strategy, governance, educational policy and leadership, environment, student experience.

CORRELATIONS BETWEEN GOVERNMENTAL FINANCIAL CONTRIBUTIONS TO EDUCATION AND THE AUTONOMY OF ALTERNATIVE SCHOOLS IN HUNGARY

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Abstract
Besides state-funded schools, private schools play a role in public education both abroad and in Hungary, however the financial aid they receive from the governmental budget is different from country to country. There are countries where they receive the same amount of support that state-funded institutions get. Whereas there are other private institutions that cannot gain any financial resources from the subsidy. Financial contribution by the government to educational costs, however, always goes together with a restriction of the autonomy of schools by said government. These restrictions may include forcing the exemption of tuition fees or mandating that private schools cannot control the admission of pupils. Moreover, it might convey the restriction of the pedagogical autonomy of alternative private schools according to the educational system's degree of centralization. The liberal and decentralized Hungarian education system has become centralized again due to the current government's aspiration of creating an integrated and unified educational policy. In this study, we seek to answer the question of how the financial contribution of the state to the operation of alternative private schools affects their pedagogical autonomy.

Keywords: Public education, alternative education, educational financing, autonomy.

OBSTACLES TO THE ADVANCEMENT OF WOMEN'S ACADEMIC CAREERS AT HIGHER EDUCATION INSTITUTIONS IN SOUTH AFRICA

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Abstract
Gender disparity in higher education institutions and the under-representation of women in prominent academic leadership positions has been a serious concern worldwide. The study endeavoured to ascertain the obstacles which impede the development and progression of women's academic careers in higher education institutions in South Africa. A qualitative research method was used with strict adherence to participatory action design, targeting Walter Sisulu University's permanent academic staff as respondents. The participants completed a qualitative interview in which they shared their individual perspectives on obstacles to the advancement women's academic careers in South African higher education institutions. As a result, an extensive literature review was conducted, which aided in providing contextual insight into the topic under investigation. The key themes that underpin the data analysis of this study were four constructs, namely factors that hinders women's academic careers, challenges faced by women academics, advancing women's academic careers, and advancing employability of aspiring academic career women. The findings of the study revealed that unfair recruitment processes, gender inequalities, patriarchy, workplace harassment, intrinsic societal attitudes, low self-esteem, and a lack of mentorship programs were critical factors impeding women's academic careers. On the other hand, fair recruitment processes, revision of recruitment policies, eradication of verbal and emotional harassment, and maintenance of employment equity were identified as significant factors in empowering women to advance in academic careers in higher education institutions. The study recommended that a concerted effort should be made by women as individuals, universities as institutions, and the government as policy maker, to eliminate the challenges and to advance women's academic careers in higher education institutions in South Africa.

Keywords: Academic career, career progression, empowerment of women, women in leadership, higher education.

POSTERS

TEACHERS AND STUDENTS

TEACHERS' OPINIONS REGARDING THE LEARNING SKILLS OF BRAZILIAN DYSLEXIC SCHOOLCHILDREN

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Abstract
Dyslexia is described as a difficulty in learning to read, which affects 5-12% of students. The aim of this study was to characterize the opinion of teachers of students with dyslexia in a specific questionnaire on learning skills. 74 teachers of Brazilian schoolchildren with an interdisciplinary diagnosis of dyslexia participated, of both genders, aged from 9 years to 10 years and 11 months from the 3rd to the 5th year of Elementary School I. The teachers answered the Learning Skills Questionnaire, composed of six items: 1) attention skills; 2) visual processing skills; 3) auditory processing skills; 4) logical-mathematical reasoning skills; 5) motor skills; 6) behavioral skills. The questionnaire was filled out by teachers, with responses scored on a scale from 0 to 4 points (Likert Scale). Data for this study were collected from March 2019 to March 2020, before the start of the COVID-19 pandemic in Brazil. The results were analyzed statistically indicating that teachers answered "rarely" and "sometimes" for all categories, except for category 6 (behavioral), which most answers were "never". There was also an indication of "I don't know" for all categories, suggesting that teachers' lack of knowledge regarding behaviors aspects of dyslexic's schoolchildren. The results allowed us to conclude that teachers still need of information about how schoolchildren with dyslexia learn to read, since the results "rarely" and "sometimes" were presented in all categories of academic learning.

Keywords: Dyslexia, learning, education, educational measurement.

PROFESSIONAL DEVELOPMENT FOR TEAMS OF EDUCATORS TO ADDRESS THE NEEDS OF MULTILINGUAL LEARNERS

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Abstract
Through the support of a federal grant, we developed a professional development project to address the needs of multilingual learners (ML) with and without disabilities. We created four hybrid graduate courses for in-service educators teaching in elementary schools with high enrollment of multilingual learners. The curricula were developed based on the most recent evidence-based practice guides and tool kits published by the National Center for English Language Acquisition, National Center for Education Evaluation and Regional Assistance, U.S. Department of Education, WIDA, and the report of Burr and colleagues (2015). Using a longitudinal quasi-experimental approach, our external evaluator assessed the effectiveness of the project completed by 64 educators through pre/post surveys, focus groups, family engagement events, and course performance. The surveys cover many different topics including understanding regulations related to ELs and students with disabilities; knowing and applying the principles of language learning and teaching; identifying and applying evidence-based strategies to address the learning of all ELs; instructional knowledge and practices; content knowledge; and family involvement. The participants were recruited in teams of educators from the same school to foster collaboration and consistency in the delivery of services. This was important because to appropriately address the needs of ML with and without disabilities a team of educators with diverse expertise (e.g., administrators, teachers) is recommended (Krasnoff, 2016; Piazza et al., 2015). Results showed significant difference between the pre- and post-surveys. The poster will display the growth knowledge of participants as well as challenges of implementing the project.

Keywords: Multilingual learners, professional development, disability, elementary schools, collaboration.

REMOTE LEARNING AS ASSESSED BY STUDENTS OF COLLEGIUM MEDICUM OF THE JAN KOCHANOWSKI UNIVERSITY IN KIELCE (SURVEY QUESTIONNAIRE RESEARCH)

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Abstract

During the COVID-19 pandemic in Poland, there was a temporary transition to distance learning at universities. For students of the medical faculty, this change lasted for a shorter than other faculties and was effective until the start of mass vaccinations. For 6 months lectures, seminars, and exercises were held remotely. We conducted an internet-based survey among medical students regarding their assessment of their distance learning experience. We wanted to compare the assessment of students from the first to the third year of studies (group A), who mostly have theoretical classes, and the fourth to sixth (group B), who should mostly have exercises "at the patient's bedside".

Students of the medical faculty (n=82) participated in the survey (62% from group A and 38% from group B). All respondents had free access to a computer and the Internet. We assessed the individual areas of interest in the survey with a five-point Likert scale. There were no differences in the assessment of their own IT competencies among students of both groups. Students of both groups noticed that their level of IT competencies increased in the course of distance learning. The groups differed in terms of the assessment of the level of education offered by the university (4.6 vs 3.2, p <0.05), and the assessment of their own involvement (4.5 vs 3.4, p <0.05). The highest-rated forms of remote learning by students were group work on projects in designated channels of communication with assistants (86% and 78% willingly participate in it). The form assessed to be the worst was teaching based on providing content in electronic form (35% and 42%, respectively, willingly participate in it).

The students of the group are less satisfied with the remote classes, which may correspond to the lack of contact with the individual patients. Less satisfaction with the classes conducted leads among students to less involvement on their part.

Keywords: COVID-19, remote learning, medical faculty.

TEACHERS' UNDERSTANDING OF CRITICAL THINKING DEFINITION

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Abstract

Introduction. The need to develop critical thinking has been growing in the 21st century. It has become a key competence included in the school national programs also in Slovakia. The Slovak teachers´ critical thinking conceptualization is analyzed by qualitative study in this research as teachers are those ones responsible for its development in the educational system.

Aim & Method: The study aim was to analyze the Slovak primary and high school teachers´ critical thinking conceptualization (N=99, 73% of females, M_{age}=44 years, SD 10.56) and to explore their critical thinking interpretations. Text content analysis is an important part of qualitative research. There are two basic methods – descriptive-interpretative and hermeneutic one, but the best solution is to combine them. The starting point was a basic file reconnaissance by qualitative content analysis to orient in a file, and then to start interpreting the file in the context of hermeneutic approach. The aim was to analyze data from *Critical Thinking Questionnaire* of our provenience on critical thinking conceptualization in 2020.

Results & Discussion: The study results from the qualitative research analysis extracted 2374 words used to describe critical thinking understanding by the research participants. The qualitative frequency content analysis created data matrix decomposition. In the last phase, the synonymous and similar words clusters based on a word stem were formed to create critical thinking categories. The critical thinking "criteria dictionary" was based on frequency hierarchy. The results were compared with standardized critical thinking definitions. The results also proved 55% of respondents used wider or narrow critical thinking definition and 7% of them explained critical thinking completely incorrectly. The study was created as a part of newly established **Slovak Philosophy for Children Center** and of the KEGA 028UMB-4/2021 project.

Keywords: Critical thinking, qualitative study, teacher.

DEVELOPING AN ANTI-OPPRESSIVE PROFESSIONAL VOICE AS A PRE-SERVICE TEACHER

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Abstract
Service-learning is traditionally used as a pedagogical tool in pre-service teacher education programs to connect theory to practice and to provide future teachers with experiences that support school needs and offer early opportunities to engage with children and youth. While the assumption is that pre-service teachers will benefit from service-learning by ultimately becoming more effective educators, the reality is that pre-service teachers often encounter entrenched power structures and deficit models of teaching and learning while participating in traditional service-learning activities. The research presented here examined one college's critical service learning initiative designed to support pre-service teachers as they interrogated existing power structures impacting both teaching and children's learning and lived experiences. The College's rationale for this pedagogical shift was to support pre-service teachers' understanding of equity and social justice and to help them develop an anti-oppressive professional advocacy voice that can be useful when attempting to reduce the systemic barriers they may encounter when working in U.S. schools. The researcher followed 94 pre-service teachers over the course of 10 weeks as they engaged in one of two self-selected critical service-learning projects: (1) Educational policy involvement during a government legislative session (n=51) or (2) Production of podcasts on educational equity issues for the local community (n=43). Survey data and analysis of student reflections were examined. 91% of pre-service teachers indicated that involvement enhanced their ability to implement anti-oppressive practices, and 96% reported that the experience helped them determine who they want to become in a movement for educational and social justice.

Keywords: Teacher education, service learning, educational policy, equity, social justice.

ETHICAL OUTCOMES OF ECOLOGICAL VALUES IMPLEMENTATION INTO MORAL EDUCATION ANALYZED BY ANIMAL RESPECT QUESTIONNAIRE (ANIRE-QUE)

Ján Kaliský
Matej Bel University (Slovakia)

Abstract
The study presents life ethics respect outcomes and egalitarian zoocentrism theory implemented into the author´s, diagnostic tool of *Animal Respect Questionnaire* (AniRe-Que). AniRe-Que is a valid and reliable tool for teacher´s action research to assess intervention programs effectiveness aimed at environmental intelligence support and nature protection sensitivity. Subsequently, by means of 504 university students (future teachers of various study fields) as a research sample we focused on estimation of animal respect level (R-score for animals considered as natural beings and the essence of moral reasoning). R-score was analyzed in the context of dominant study field at university, prevailing value education from primary and high school education and worldview. Significant differences were proved for worldview in favor of non-religious respondents, for prevailing value education in favor of secular ethical education and for teacher´s training study field in favor of students studying Ethical Education as their future teaching profession. The study discusses the importance of nature protection sensitivity programs implementation into the educational process.
Study was financially supported by KEGA project 028UMB-4/2021.

Keywords: Nature protection, moral education, man´s attitude to animals, ecological values.

EMOTIONAL INTELLIGENCE AT THE BEGINNING OF INITIAL TEACHER EDUCATION: RELATIONS TO MOTIVATION FOR TEACHING CAREER

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Abstract
Emotional intelligence (EI) and motivation for choosing teaching career are highlighted for their importance in teacher education. Individuals with high EI have excellent social management skills which are required for the teaching profession. Similarly, those with high intrinsic and altruistic motivation are more likely to stay in the teaching career. Even though both constructs are significant for teachers, there has not been any study yet to examine how these two constructs are associated. This study aims to explore the emotional intelligence profiles of students who are just entering initial teacher education and the connection of those profiles of emotional intelligence to their motivation for choosing teaching as a career. The data that are used in this study were collected across Finland (N=953) with students from Åbo Akademi University, University of Helsinki, University of Jyväskylä, University of Lapland, University of Eastern Finland, University of Oulu, University of Tampere, and University of Turku. The scales in this study are Self-Rated Emotional Intelligence Scale (SREIS) and Factors Influencing Teaching Choice (FIT-Choice). To identify the profiles of EI we first performed Cluster analysis. Next, to explore the relationships between the profiles of EI and the motivation for teaching career we performed multiple ANOVAs and MANOVAs. From the cluster analysis five profiles were identified, that were significantly different from one another. The preliminary findings of the analysis show that there are some patterns to what kind of motivations for choosing teaching as a career students had according to their EI profile.

Keywords: Emotional intelligence, motivation, teaching career, teacher education, Finland.

SUCCESSFULLY NAVIGATING DIGITAL STORMS IN CROATIAN EDUCATION SYSTEM

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Abstract
2020th was challenging for all teachers in Croatia. Although previously strengthened by the reform of the new Curricula in 2016 and the "School for Life" project in 2018, many have resisted the changes, including the digitalization of teaching. In March 2020th there were no alternatives. In the storm that threatened to stop education at all levels we had to strongly resist defeat and find the strength to fully digitalize teaching.
It was no longer enough to have a systematic reform process or legalized curricula, but to make a personal digital transformation. It was imperative to carry out intrinsic reform of one's methodological skills, awaken creativity in teaching approaches and improve competences.
Cooperation and exchange of experiences, as well as investment in improving digital maturity, digital pedagogy, and digital skills, were crucial for strengthening teachers' personal potential. Series of webinars were designed to present new paradigms of teaching in the online environment in cooperation with the community of primary and secondary school mathematics teachers. Four areas in which digital competences of teachers are recognized are: Organization of online classes, Digital literacy, Communication in virtual classroom and External evaluation. E-student and E-teacher with obligatory Student-centered online teaching are key in organizing E-classroom. Subsets of such teaching for students are Project Assignment, Gamification, Flipped Classroom and Self-learning; and for teachers: Evaluation as learning, Formative and Summative evaluation and Individualized approach. Such schematic was upheld in organizing all 16 of webinars, building a foundation for perfecting teachers' necessary skills. Positive effects are visible in the school year 2021/22 not only in online classes but in during face-to-face classes increasing digital maturity in both teachers and students and strengthening collaboration between teachers.

Keywords: Digital, experiences, competences, teacher, online.

TEACHING AND LEARNING CENTERS: A STEM PERSPECTIVE ON THE IMPACT FOR AN INSTITUTION OF HIGHER EDUCATION

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Abstract

The true pillar of quality higher education is well-trained, effective, and knowledgeable faculty who are invested in the success of their students. The discipline-specific knowledge required for entering an academic career as a STEM faculty member is mostly gained through academic graduate and post-doctoral training. However, formal preparation in the areas of teaching and mentoring are often lacking, and typically occur through observation of more senior colleagues. In reality, when it comes to teaching and mentoring, many STEM faculty members "build the plane while flying it," and mainly learn by trial and error. As all interactions between faculty and students can seriously impact student retention and success, there is a great need for faculty development opportunities in these areas. The focus of this communication is on the impact of mentor and pedagogical training at Xavier University of Louisiana from the STEM faculty perspective.

Keywords: Faculty development, mentor and pedagogical training.

PROJECTS AND TRENDS

IMPLEMENTATION OF AN OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE) IN A KINESIOLOGY BACHELOR DEGREE

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Abstract
For the past four years, the Laval University's kinesiology bachelor degree has been using an OSCE to assess their students' clinical competencies. This presentation will describe the format the OSCE and will discuss the quality improvement process implemented following psychometric analysis of the test and its nine stations. The psychometrics qualities were tested using the Cronbach's alpha, the stations' difficulty level and discrimination index. An ANOVA has also been realised to ensure that the students' results of a same station in a different circuit were equivalent regarding the examiners.
In the 2018 edition, the psychometrics qualities were under the standards, especially the Cronbach's alpha and the stations' discrimination index. In order to improve the reliability of the test, modifications were made to seven of nine scoring grids. A committee revised each competencies' component assessed and removed the ambiguous ones. The psychometrics qualities of the revised results improved accordingly.
To prepare the 2019 edition, the OSCE committee reviewed the nine stations and adjusted the scoring grids. It also designed three new clinical situations. The psychometrics qualities of the 2019 edition have shown an improvement of the Cronbach's alpha and the stations' discrimination index. It has also demonstrated no significant differences between the circuits' performance. The appreciation surveys administered following each edition revealed the quality of the support offered to the students, examiners and simulated patients and the authenticity of the clinical situations. We thus consider this OSCE to be a reliable method to assess students' competencies of our kinesiology program.

Keywords: Objective structured clinical examination (OSCE), assessment, competencies, kinesiology, test score reliability.

PANDEMIC IMPACT ON THE COGNITIVE-LINGUISTIC SKILLS OF 1ST AND 2ND GRADE BRAZILIAN SCHOOLCHILDREN

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Abstract
The Covid-19 pandemic made discrepancies between the different educational realities more evident for schoolchildren in the beginning of literacy. Aim: to characterize the performance of cognitive- linguistic skills of students in early literacy phases during the pandemic. Forty-eight Brazilian schoolchildren participated in this preliminary study, distributed in GI, composed by eighteen schoolchildren for 1st grade and GII, composed by thirty schoolchildren for 2nd grade, submitted to the application of the Cognitive- Linguistic Skills Assessment Protocol for students in the initial stage of literacy. Results: students from GI and GII showed average performance for writing the name, sequential alphabet recognition, and visual memory of shape. The GI presented a refusal response for the subtests of word dictation, nonword dictation and picture dictation, word repetition and visual sequential memory of shapes and poor performance for alphabet recognition in random order and average performance for alphabet recognition in sequence. GII showed lower performance for the subtests of word dictation, nonword dictation, picture dictation and superior performance for alphabet recognition in random order, alphabet in sequence and visual sequential memory of shapes. Discussion: the appropriation of the letter- sound relationship mechanism raises questions, since it evidenced the difficulty of all students in cognitive-linguistic skills necessary for the full development of reading and writing in an alphabetic writing system such as Brazilian Portuguese. Conclusion: students in the 1st and 2nd grade showed lower performance in cognitive-linguistic skills important for learning reading and writing.

Keywords: Literacy, pandemic, learning, child development, education.

METHODS TO IMPROVE THE QUALITY OF DESIGN CAD TEACHING FOR TECHNICAL SPECIALIST

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Abstract
Digital literacy is a necessary skill for a modern specialist and an important factor influencing the development of the economy in all industries. Automation of technological processes requires an appropriate level of training of specialists, among the necessary skills of which should be knowledge of a CAD program.
In order to improve the level of education and competitiveness of specialists (including those who have temporarily lost their jobs), Tallinn University of Applied Sciences (TTK UAS, Estonia), in cooperation with the Estonian Unemployment Insurance Fund, has been organizing and conducting training on the use of CAD programs since 2012, including CAD design with AutoCAD, both 2D and 3D, as the most universal CAD program. To ensure more effective training, teachers of advanced training courses, who are the authors of the article, constantly monitor the labour market to determine the requirements for technical specialists. In accordance with changes not only in the requirements for the level of training of specialists but also taking into account constantly developing technologies, the training program is also changing. Recently, in connection with the pandemic, it has become necessary to conduct not only face-to-face training but also online, hybrid, which required not only updating the educational material but also a new approach - the use of interactive tools in training.
Since 2021, TTK UAS conducts in-service training for adults including CAD design with AutoCAD within the framework of the Ministry of Education and Research's state training order for in-service training "Promotion of adult education and broadening of learning opportunities", for learners is free of charge.
This article analyzes the statistics and demonstrates the use of this analysis to assess the necessary changes in the curriculum to improve the effectiveness of the study of the CAD program.

Keywords: Lifelong learning, CAD design, distance learning, interactive education.

RELATIONSHIP BETWEEN ORAL READING FLUENCY MEASURES AND VISUAL ATTENTION SPAN IN BRAZILIAN'S SCHOOLCHILDREN IN PANDEMIC CONTEXT

Lavínia Micaela Moreira, Ana Karolina Silva Deolindo, Giseli Donadon Germano, & Simone Aparecida Capellini
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Abstract
The aim of this study was to relate the measures of oral reading fluency and visual attention span in Brazilian students from the 4th grade of elementary school. Eleven students were submitted to three measures of oral reading fluency and the global visual attention span (VAS) for five characters. The reading correct word per minute measure was used with three texts that differed in complexity. The study was carried out after the adoption of remote teaching in the Pandemic. Spearman analysis was performed between fluency and VAS variables, with no significance. The results revealed a greater number of correct words per minute in the third reading time compared to the first two times, revealing that the real reading performance of 4th grade students is the average of 39 to 40 words per minute and average of fixation of 50% of the characters. These findings indicate academic losses due to low reading fluency rate, fewer characters per fixation and lack of relationship between the variables. These results pointed out to the decrease in reading practices during the Pandemic. As conclusion, there is a need for further studies about this theme.

Keywords: Reading fluency, visual perception, learning, education, educational measurement.

OUTCOMES OF SLAM WRITING WORKSHOPS FOR HAITIAN STUDENTS AT THE END OF ELEMENTARY SCHOOL

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Abstract
In Haiti, the success rate in elementary school remains very low and the majority of teachers do not have sufficient knowledge of effective pedagogical approaches to writing which leads to demotivation and a low sense of effectiveness as scriptwriters among students. We chose slam as a genre of contemporary and urban poetry (Vorger, 2011) and the workshop device to work on slam poetic writing (Troia, Lin, Cohen and Monroe, 2011), ideal to improve students' writing skills, motivation and sense of effectiveness. The research took place in two primary schools in Port-au-Prince against the backdrop of a socio-political crisis. Twelve facilitators (10 women and 2 men), trained in advance, facilitated the workshops in 13 sessions of 90 minutes each. A total of 61 students aged 12-13 participated in the after-school writing workshops (26 boys and 38 girls). Students completed a questionnaire on their motivation and sense of writing skills before and after the program. A corpus of 41 texts of claimed poetry written by students is the subject of a thematic and linguistic analysis. The results indicate that students benefit from their writing and oral expression skills, self-confidence and empowerment, and that their texts demonstrate a high degree of linguistic creativity and thematic richness. The positive results are consistent with those obtained in other socio-cultural contexts (Patmanathan, 2014) regarding the impact of the writing workshops. They contribute to new knowledge about slam poetry as an appropriate literary genre for young people, even at the end of primary school.

Keywords: Creative writing workshops, slam poetry, elementary school, Haiti, writing skills.

VISUALIZATION OF CREATIVE THINKING THROUGH STEAM TEACHING

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Abstract
The Hong Kong Education Bureau (CDC, 2015) started promoting STEM education in 2015. However, the Korea government made it clear in 2011 that it would shift from STEM education to STEAM education, and expected to foster creative and artistic talents like Leonardo da Vinci or Steve Jobs (Jon & Chung, 2015).
Creativity and innovation have become basic and essential skills for the 21st century across the globe (Burke, 2015; Nakano & Wechsler, 2018), and STEAM education aims to cultivate talents who are creative and think like artists through interdisciplinary activities. The project team came from 3 STEAM related departments of the Education University of Hong Kong. 30 student-teachers from Science, ICT, Visual Arts, and Mathematics disciplines were invited in Dec, 2020 to form 4 collaborative teaching teams with teachers from 2 primary schools and 2 secondary schools and adopted a 5-stage design thinking process to visualize creative STEAM teaching.
The project team is interested in exploring ways to integrate STEAM-related knowledge and skills to produce creative works. Nilsson (2011) stated that there are three regions of creativity: the material, the modal, and the mental. He constructed a taxonomy of creative design to evaluate creative works from the novelty of content and form at five levels: imitation, variation, combination, transformation and original creation. After the implementation of STEAM teaching, 4 teaching teams were interviewed. They invariably pointed out that the learning process and creative performance of primary and secondary school students have surpassed the combination level and reached the transformation level. If you want to see an original level of creation, giving them more time for creative development and creation is essential. This sharing session will provide you with QR codes to visualize the creative thinking process in STEAM teaching, students' creative process, and creative products. The project hopes to enable researchers and educational authorities who are interested in promoting STEM education to recognize, identify and reflect on what STEAM education is and the educational significance of the A.

Keywords: STEAM education, design thinking, taxonomy of creative design.

THE POWERFUL AND CONTROVERSIAL STRATEGY OF USING STUDENTS' FIRST LANGUAGE KNOWLEDGE IN FOREIGN LANGUAGE TEACHING

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Abstract

This study explores the extent to which using the students' first language in teaching foreign languages is beneficial, and recommends some successful strategies of putting L1 knowledge to good use. Given that it is widely recommended to avoid the use of L1 in favour of monolingual approaches, that provide complete language immersion, it is especially challenging to define the situations when students' first language can be used as a valuable and beneficial tool to support foreign language learning. Although L1 use is widely discouraged, some researchers suggest that, if used correctly and coherently, it does not hinder, but promotes language learning. In order to establish the extent to which L1 could support foreign language learning, this study sheds light on strategies used during teaching Romanian as a foreign language, aiming to make enlightening connections between L1 and L2, thus exploring the similarities between Romanian and Italian, the mother tongue of the students. The teacher used basic information about etymology, language history and phonetic transformations to explain the connections between words in Romanian and Italian, based on the common Latin inheritance. Moreover, the teacher used brief explanations and informal comments in Italian to build a meaningful relation with the students and create an inclusive, friendly and relaxed environment for language teaching. This comparative linguistics approach was assessed in relation with the results obtained by another class of Italian students, where the teacher made no such linguistic comparisons and avoided use of L1.

Keywords: L2 teaching, L1 use, comparative linguistics, etymology.

'KIDS THESE DAYS!' A META-ANALYSIS OF CHANGES OF ATTENTION PROBLEMS IN REPRESENTATIVE SAMPLES OF CHILDREN

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Abstract

It is a common belief that the attention of new generations of children is in decline (Protzko & Schooler, 2019). However, such devastating claims about new generations are challenged when inspecting the evidence (Protzko, 2020). The current meta-analysis aimed to explore comprehensively whether attention problems have increased, decreased, or remained unchanged among children over the past decades. Findings allow us to determine whether there has been any problematic development of attention among children.

Studies that used the Child Behavior Checklist (CBCL) with representative samples of 1.5-14 year-old children were systematically searched in multiple databases (i.e., Web of Science, Scopus, Google Scholar, PubMed). Informants varied between studies (i.e., teachers, self, parents), but parent-reported data was dominant.

Preliminary results from the meta-regression analysis of raw scores from 22 studies showed no change in reported attention problems over the past decades (b_{year} = -0.009, p = .72; 95%CI = -0.06 to 0.04. However, when mean age of children was analyzed in interaction with the year of data collection, we found that attention problems have increased with age over the past decades ($b_{year \times age}$ = 0.007, p = .01; 95%CI = 0.002 to 0.011). When analyzing the percentage of maximum possible scores from the same 22 studies, there was an increase in reported attention problems over the past decades for all children (b_{year} = 0.4493, p = .03; 95%CI = 0.03 to 0.87,), regardless of age ($b_{year \times age}$ = -0.0022, p = .35; 95%CI = -0.07 to 0.02). These findings show that attention problems among children are increasing, and school-aged children might be especially at risk. A possible explanation of these results might be that

children usually spend more time on screen from year to year (e.g., surfing on the internet, playing online games, using social media, media multitasking) which might have had a negative effect on their attention regulation skills in the last decades (Moisala et al., 2016; Rideout et al., 2010).

Keywords: Meta-analysis, attention problems, children, mental health, representative samples.

MIXED REALITY TOOLS FOR EDUCATION IN THE METAVERSE

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Abstract
Education needs to adapt to the constant changes of society and integrate modern technologies to enhance the process of teaching and learning. The recent Covid 19 pandemic has generated a shift towards digital education, as most educational institutions were forced to temporarily suspend all physical activities. The transfer and absorption of knowledge suffered greatly from this, especially in the underdeveloped countries where the infrastructure is limited. Nevertheless, the current crisis has paved the way for digital campuses, online classrooms and digital teaching platforms. In this article we briefly present several free tools that educators can adapt and use to create a virtual classroom based on mixed reality (XR) technologies, along with the main XR hardware (such as Oculus Quest, Hololens 2). We also share insights on how a virtual classroom can increase student participation and engagement, and how we envision the future of digital classrooms and their potential in the Metaverse.

Keywords: Education, mixed reality, tools, Metaverse.

INTEGRATED MODEL OF MATHEMATICS PROBLEM SOLVING ADAPTED TO A STUDENT WITH AUTISM SPECTRUM DISORDER

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Abstract
Mathematics problem solving is one of the main axes of mathematical activity and is the cornerstone of mathematics education, so it should be the main source and support of learning throughout Primary Education.
Caballero et al. (2009, 2016, 2020) y Blanco et al. (2015) presents an Integrated Model of Mathematics Problem Solving (IMMPS) that integrates cognitive and affective aspects. The efficacy of this model has been empirically contrasted in teachers in initial training (Caballero et al., 2011, 2021; Blanco et al., 2013), wondering if it would be equally valid in students with certain learning difficulties.
That is why in this proposal we present an intervention carried out around Mathematics Problem Solving with a student in the first year of Primary Education with Autism Spectrum Disorder. In this proposal, the Integrated Model of Mathematics Problem Solving (IMMPS) has been adapted to this type of disorder. IMMPS is composed of five phases in which emotional management techniques and heuristics for Mathematics Problem Solving are integrated.
It is a single case study, where the subject of study has been selected through a non-probabilistic discretionary or judgmental sampling.
The conclusion is that the student is able to carry out a more elaborate and complete process of Mathematics Problem Solving, using different heuristics. However, they do not put into practice the techniques of emotional control in the face of nerves or blockages arising in the resolution of Mathematics Problem Solving.

Keywords: Autism spectrum disorder, primary education, mathematics, problem solving, learning disabilities.

UPDATING THE TALE OF GOING GREEN FOR TWO INSTITUTIONS OF HIGHER EDUCATION

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Abstract

Because institutions of higher education can function as change agents in the arena of sustainability this presentation looks at the transformative practices for two institutions of higher education in their quest to function as sustainable communities. Hunter College is committed to sustainable actions and transformative practices on its path towards a green institution. Clark Atlanta University continues its march towards ensuring that sustainability is at the forefront of its efforts to attain carbon neutrality.
This poster presentation seeks to generate informal discussion about institutions of higher education that engage in responsible consumption of food and energy, and use transformative practices to become sustainable communities.

Keywords: Sustainability, sustainable communities, responsible consumption, transformative practices.

DIDACTICS FOR STATISTICAL DEVELOPMENT IN PRIMARY EDUCATION

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Abstract

Didactics is a concept which leaves space for the learner's thinking not to be interrupted, and that unnoticed takes a good direction (Tierno Galván, 1986). With this in mind, this panel presents two instances in which didactics have contributed to the statistical development of fifth and sixth year primary school pupils. On the one hand, the methodological and didactic orientations of an implemented statistical proposal are detailed; in this block, didactic principles to be taken into account for statistical improvement in primary education are indicated. On the other hand, data on the results obtained after the didactic proposal are presented; data on the graphic reading developed and the mathematical language used in the communications will be presented. This panel provides significant data derived from a more complete investigation in which 312 primary school pupils participated, and where a quasi-experimental study with a control group was carried out.

Keywords: Didactic statistics, statistical literacy, primary education, mathematical teaching.

TEACHING AND LEARNING

APPLICATION IN THE EDUCATIONAL CONTEXT OF INFORMATIVE AND INSTRUCTIONAL INTERVENTION PROGRAMS FOR THE READING COMPREHENSION OF SCHOOLCHILDREN FROM THE 3RD TO THE 5TH OF ELEMENTARY SCHOOL

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Abstract
Schoolchildren who have reading comprehension difficulties are out of step with their class group. This lag tends to increase over time, as curricular contents increase in quantity and complexity with the passage of school grades. Therefore, it is necessary that these difficulties are remedied so that these schoolchildren can develop academically. This study aimed to compare the performance of schoolchildren from the 3rd to the 5th of Elementary School in the application of two intervention programs in reading comprehension, one informative and the other instructional. A total of 211 schoolchildren from municipal public schools participated, of both genders, aged between eight and ten years and 11 months of age, divided into three groups, GI, GII and GIII. The schoolchildren were submitted to an assessment of reading comprehension and the results were statistically analyzed. The schoolchildren were placed in three types of program, one of control and two of intervention. The schoolchildren in the Control program did not receive specific activities aimed at the use of reading comprehension strategies. Those from the Informative program received mediation from the teacher in the application of strategies and those from the Instructional program were mediated by the teacher and the researcher. These schoolchildren received work-related activities with literal and inferential information on micro and macrostructure. The statistical results indicated that the schoolchildren of the Informative and Instructional programs, submitted to the application of the interventions, obtained superior performance in relation to the schoolchildren of the Control program, not submitted to the Intervention. The results indicated that the schoolchildren presented a lower performance, mainly for the macrostructure inferential questions, as well as indicating that after the application of the programs, the schoolchildren submitted to the intervention activities presented superior performance in reading comprehension regardless of the way in which the programs were applied. Based on the results analyzed, it was possible to conclude that the use of specific strategies aimed at reading comprehension provided significant results for the schoolchildren, since in both programs it was observed that there was an improvement in reading comprehension, although not all groups could benefit. of all proposed activities. There is, therefore, the need for revisions for applications in future studies.

Keywords: Learning, teaching, reading, reading comprehension, education.

READINESS OF FUTURE PRIMARY-SCHOOL TEACHERS TO SOLVE NON-STANDARD MATHEMATICAL PROBLEMS

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Abstract
The paper will present partial results of a pilot research entitled "Readiness of future primary-school teachers to solve non-standard mathematical problems". For the purposes of the research, a didactic test was designed – a set of 10 non-standard mathematical problems. The problems were chosen in difficulty corresponding to the curriculum of the 5th grade of primary school. The difficulty of the individual problems was statistically verified. A questionnaire survey method was chosen for the research. 74 students of the field of Teaching at the 1st Level of Primary School from the Faculty of Education of Palacký University in Olomouc participated in the pilot research. The researchers plan to carry out the research in a national and wider international context. In the pilot research, we were particularly interested in the success of the respondents in solving individual problems and the test as a whole, and the subjectively perceived difficulty of the individual problems in the context of the achieved success rate.

It can be concluded that not all the prospective teachers were able to solve all the assigned problems. Some mistakes were caused by inattention, others by the stress factor of the time limit. The analysis of the subjectively perceived difficulty of the problem in relation to the success rate was interesting. We believe that the results of the research should be reflected in the concept of undergraduate teacher training.

Keywords: Mathematics, solving, problem, teacher.

AND THEN I ASK THE COMMUNITY - NURSING PROFESSIONAL IDENTITY DEVELOPMENT IN VIRTUAL COMMUNITIES OF PRACTICE

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Abstract
Virtual Communities of Practice in the context of nursing - understood as interest-based associations of people who exchange nursing knowledge and nursing experiences using online platforms - also develop their significance in case of professional identity development.
"What does it mean to be a nursing professional?" is a central question in the nursing education context, in which the foundation for the development of a professional identity is laid. While findings already exist regarding the development of nursing professional identity in the context of different learning places (nursing school and nursing practice), it's still open, how the participation in virtual Communities of Practice can influence the development of professional identity already in the context of nursing education.
This research project explores the following questions: *Which nursing related themes show up in the context of virtual Communities of Practice? How the process of nursing professional identity development is influenced by the participation of nursing scholars in virtual Communities of Practice? Which meaning the learners attribute to the participation in virtual Communities of Practice with regard to the formation of nursing professional identity?*
The goal of the study is to develop the virtual Community of Practice as a learning space that supports the process of identity formation already in nursing education. Furthermore, the findings will be used to shed light on the medial reality of nursing scholars and to derive curricular consequences.
Within the framework of a netnographic research design, data collection will be conducted via field observations of community activities and will additionally be supplemented by focused individual interviews with community members. In the context of data analysis, the documentary method will be used in addition to the production of dense descriptions.

Keywords: Virtual communities of practice, nursing education, professional identity development.

POSSIBILITIES OF DEVELOPMENT OF PUPILS' MATHEMATICAL LITERACY

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Abstract
In this article, we deal with the development of mathematical literacy of pupils and students. The article responds to the current requirement to focus mathematics education on the practical use of knowledge in everyday life, i.e., on mathematical literacy.
The article is motivated by the results of a questionnaire survey conducted on a group of 159 students at the university teaching program in the Faculty of Education, Palacký University, Czech Republic, in 2021. It turns out that most future mathematics teachers are interested in developing mathematical literacy of their future pupils and students and are willing to continue their education in this field, for example, by participating in seminars on the development of mathematical literacy in children of all ages.
The aim of the article is to show ideas for a seminar for future mathematics teachers. We use mathematical examples to illustrate different approaches to the development of mathematical literacy and the joint development of mathematical and digital literacy.

Keywords: Mathematical literacy, mathematics examples, questionnaire survey, prospective teachers.

A CALL FOR DIVERSITY TRAINING FOR CHILDREN IN JAPAN

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Abstract
Growing diversity in Japan's population has not been matched by changes in attitudes regarding "difference." The old notion of racial and cultural homogeneity still holds sway in Japan, especially within the official education system. This has led to a disconnect between classroom realities and government policies which do little to address the changing needs of an increasingly diverse student body. For historical reasons, and as a result of more recent demographic trends, there are now large numbers of Koreans, Brazilians, South Asians and other foreign nationals in Japan. Many of these foreign residents have children attending Japanese public schools that were never intended to educate anyone but Japanese students. Moreover, marginalized groups such as members of the LGBTQ and special needs communities are gaining an increasing presence both in public awareness and within the public school system. Despite these changes, changes that are only accelerating, the official school system has done little to foster changes in attitude toward people who are different from the idealized norm. In addition, studies show that these sorts of attitudes can become fixed at a very early age, effectively at the preschool level. This has led us to produce a children's book intended to serve as a form of diversity training for young children. In this way we hope to encourage more open and accepting attitudes among those who will grow up in an ever more diverse Japan.

Keywords: Japan, diversity training, inclusion.

DEVELOPING MATHEMATICAL PRE-LITERACY AND ROBOTIC TOYS FROM THE PERSPECTIVE OF SCHOOL PRACTICE

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Abstract
We encounter mathematics and mathematical concepts in our everyday lives. The foundation for later mathematical skills lies in the good development of pre-mathematical ideas in a child's preschool years. In this paper we will discuss partial results of the study entitled "Mathematics and Reading Preschool Literacy (MRPL1)", in which 119 teachers from 72 kindergartens from different parts of the Czech Republic participated. The focus will be mainly on the use of modern robotic tools based on the trend of incorporating digital technologies into preschool education. Targeted work with these tools can significantly contribute to the development of children's spatial orientation, their numerical skills, logical reasoning and algorithmizing. In the application part we will focus specifically on the possibilities of educational use of the robotic toy Bee Bot.
The research has revealed that the need to develop children's mathematical literacy in kindergartens is still neglected by teachers. While teachers do acknowledge its importance, they themselves do not know how to develop children's mathematical pre-literacy. In their own practice, they prefer the children to play spontaneously and fill in pre-printed worksheets. It is encouraging that the teachers have shown interest in the new ideas. Activities related to Bee Bot interested them. Overall, however, they lack sufficient methodological support. Based on the findings, educational activities with Bee Bot have been included as part of the undergraduate education of kindergarten teachers at the Faculty of Education of Palacký University in Olomouc.

Keywords: Mathematics, pre-literacy, teaching, robot, toys.

ATTITUDES TOWARD PAIR PROGRAMMING FOR STUDENTS WITH DISABILITIES IN UNDERGRADUATE TECHNOLOGY COURSES

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Abstract
To succeed in the 21st century, students need to acquire skills that are critical to the workforce, such as of collaboration, social skills, and technology literacy (World Economic Forum, 2016). Individuals with disabilities must develop the same skills as their peers without disabilities. Unfortunately, college students with disabilities often find computing courses frustrating and are more vulnerable to lower academic self-concept, academic challenges, and disability stigma (Kim & Kutscher, 2021). To address the problem, we examined the use of pair programming, a collaborative approach to programming, as a pedagogic method to improve students' attitudes toward programming in undergraduate computer courses, especially for students with disabilities. We collected data between fall 2017 to summer 2020 with 455 students responding to all three waves of data collection (pre, mid, and post surveys in one semester. We created a comparison group that matched students with disabilities (33 students) on computing related variables (i.e., computer use, interest in computers), gender, and pair programming participation with students without disabilities. Findings showed that students with disabilities did not differ from those without disabilities in their programming attitudes at both middle and end after controlling for baseline computing attitudes. Thus, pair programming is an effective pedagogy for both students with and without disabilities.

Keywords: Students with disabilities, pair programming, collaboration, computer courses.

SCHOOL MATHEMATICS AND DIGITAL LITERACY

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Abstract
In this article, we focus on the intended development of digital literacy of pupils in all schools, which is presented in the Strategy of the Education Policy in the Czech Republic until 2030+, issued by the Ministry of Education, Youth and Sports in the year 2020. The use of information technologies needs to be integrated into the methods and content of various subjects. From this point of view, we consider the training of future mathematics teachers. How to use digital technology in teaching mathematics?
We deal with a questionnaire survey conducted among students of mathematics teaching at the Faculty of Education, Palacký University in Olomouc in 2021. The objectives of the research were to determine the current readiness of future mathematics teachers to use digital technologies, their awareness of the benefits of digital technology in mathematics in teaching, their view on appropriate use of digital technologies in teaching and their attitude to mastering the basics of programming and the subsequent use of this skill in teaching mathematics. We analyze and process the data obtained from the questionnaire using standard statistical methods.
These findings are very beneficial for 21st century teacher educators. The ability to properly use digital technologies in teaching mathematics has an undeniable pedagogical benefit for the education of a new generation of students. The results of the survey show that students, who are mostly 19 to 21 years old, are acutely aware of the importance of digital technologies today.

Keywords: Mathematics teachers, digital literacy, pedagogical contribution, questionnaire.

CREATIVE WRITING IN CONTEXT OF UNIVERSITIES

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Abstract
We present an old process developed more than a hundred years ago at American universities. It means professional, journalistic and academic forms of writing. It also includes poetry and narrative forms.

Creative writing has always been at the heart of university education. Today, there are more than 500 bachelor's degree programs and 250 master's degree programs in this subject in the United States. In other fields of study, it is mandatory to enrol in this subject.

After World War II, it came to Europe, first to England and later to Germany. Here, "... since the 'Sturm und Drang' (1770-1789) of the early Goethe period, the autodidactic poetics of the cult of genius prevailed. The teachability of creative writing has been disputed ever since and its dissemination has therefore always had a hard time in Germany" [von Werder 2000:99]. It is rarely found in the curricula of German universities. At the Dresden University of Applied Sciences, we have been practicing it for five years with great response from social work students. They learn different methods: professional writing for partners and administration, poetic writing for children's or adult groups, scientific language for their final thesis and later publications.

Although we offer it as an elective, more than 80% of students choose it. Final papers are also written on these creative topics or using the methods learned. "Writing forces economy and precision. What swirls chaotically around in our heads at the same time has to be ordered into succession when writing" [Bütow in Tieger 2000:9].

The winners of this training are not only our former students! Children in after-school programs and youth clubs improve their writing skills through play. Patients in hospitals work on their biographies. People who only write on the computer discover slow and meaningful writing, activating their emotional system.

Therefore, this paper will show how clients benefit from creative writing skills of their social workers and what gain other disciplines can expect as well.

Keywords: Methods and target groups of creative writing, experiences.

SLOVAK UNIVERSITY STUDENTS´ HEALTH IN THE CONTEXT OF TRAIT EMOTIONAL INTELLIGENCE

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Abstract
The study theoretically and empirically analyzes trait emotional intelligence (EI) potential in the context of health (health domains and attitude by WHO and BMI index) by self-report tools: trait EI (global level, factors: well-being, self-control, emotionality, sociability) by TEIQue-ASF (Petrides, 2009) and health domains (physical health, psychological health, social relations, environment) and general health attitude by WHOQOL-BREF (WHO, 1996) and BMI index of future teachers as potential educational leaders in Slovakia (N=107, M_{age}=22.3, /SD=2.9/; 83% of females). Statistically significant positive moderate to strong relations between trait EI (and its factors) and health domains and global health attitude were proved (up to 40% of global health is predicted by trait EI). While BMI was neither in relation with trait EI nor health. There were significant differences between overweight and healthy weight in health domains and attitude in favor to healthy weight ones. The study emphasizes the importance of socio-emotional learning of educational emotionally intelligent leaders. The study is a part of a research project "Psychological Approach to Creation, Implementation, and Verification of Educational Leader´s Competence Model Development (APVV-17-0557)".

Keywords: Trait emotional intelligence, health, BMI, socio-emotional learning, educational leaders.

PSYCHOLOGICAL AND SOCIAL RISKS OF DIGITALIZATION IN ADOLESCENTS

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Abstract
The paper is primarily focused on the psychological and social risks of digitalization in adolescent girls and boys. Recently, we have witnessed an increasing digitalization in adolescents, especially during Covid-19 restrictions. Several factors play a positive and negative role in using digital media in the

development process. In this paper, we focus on clarifying key problems from the psychological point of view. The research was based on a qualitative (interview) research design. The sample consisted of 45 adolescents aged between 16- and 23-year-old. It is well known that contemporary adolescents are surrounded by digital media that fulfil entertaining and educational, informational, and social functions. It is essential to have good models during identity-forming, and adolescents are often looking for their models online. Our findings showed fundamental problems of adolescents these days: the FOMO effect (Fear of missing out), feeling of loneliness and cyberbullying. On the other hand, we found a high level of digital literacy, a substitute for face-to-face social interaction by the mobile application during Covid-19 restrictions, and the use of digital devices for relaxation, entertainment, and education.

Keywords: Adolescents, digitalization, lifestyle, identity.

NOMOPHOBIA AND PRIMARY SCHOOL CHILDREN´S EMOTIONAL AND PERSONAL FACTORS

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Abstract
Nomophobia as a new form of phobia is becoming a very serious topic threatening the ones responsible for education and upbringing of a new generation. The aim of our research was to find out whether nomophobia (assessed by Nomophobia questionnaire, NMP-Q, Yildirim & Correia, 2015) differs in the context of gender (N=110, M_{age}=14,51; SD=.501, 53.6% of girls) and is related to emotional aspects, i.e. trait emotional intelligence (EI, Trait Emotional Intelligence Questionnaire-Adolescent´s Short Form, TEIQue-ASF, Petrides, 2009), self-esteem (Rosenberg's Self-esteem Scale, RSS, Rosenberg, 1965) and trait anxiety (Spielberger´s Trait Anxiety Inventory, STAI, Spielberger, Gorsuch, & Lushene, 1983). The analysis has proved statistically significant gender differences in nomophobia in favor to boys (p=.000), significant negative relations with trait EI and trait anxiety, and significant positive relation with self-esteem. The study discusses the importance of social-emotional education as a form of nomophobia addiction prevention. The study presents the partial results of KEGA 028UMB-4/2021 and KEGA 039UMB-4/2021 projects.

Keywords: Nomophobia, trait emotional intelligence, self-esteem, trait anxiety, socio-emotional learning.

DIFFERENCES IN PREFERRED VALUE STRUCTURE BETWEEN ADOLESCENT BOYS AND GIRLS

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Abstract
The article's main purpose is to present the value structure of adolescents. The period of adolescence is significantly important in an adolescent´s life in terms of the formation of the value structure. The structure of values firmly directs adolescents to choose their lifestyle and shows the direction of personality motivation. The preference for specific values is influenced not only by the adolescent´s personality, but also by his interests, needs, attitudes, and various events in his life. The research sample consisted of Slovak adolescents (N=335, girls N=205, boys N=130). The average age was 16.3 years. Our interest was focused on gender differences in the structure of values, measured using the Portrait Value Questionnaire (PVQ, Schwartz, 2003). The results showed a difference in preferred value structures (statistically significant) between girls and boys. Girls scored higher in the values of self-direction, universalism, openness to change, and self-transcendence.

Keywords: Adolescents, values, the structure of values, gender.

ORGANIZATIONAL ISSUES

TRAINING OF EDUCATION PROFESSIONALS WITHIN THE FRAMEWORK OF THE SUSTAINABLE DEVELOPMENT GOALS (SDG)

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Abstract
Faced with the current diverse and complex realities, this contribution includes the international and national bases that establish the conception of inclusive education today to train education professionals. From the International Convention of Persons with Disabilities (UNESCO, 2006); the World Education Forum (2015) in which the Incheon Declaration (Korea) was approved; the Sustainable Development Goals (SDGs) and the 2030 Agenda, together with the Declaration and the Convention on the Rights of the Child (1989), documents that establish inclusion, equity and access to quality education with impact on learning outcomes, from a lifelong learning approach.
The European Agency for Inclusive Education and Special Needs (2015) promotes the improvement of students' educational opportunities, taking as principles the equity, effectiveness, efficiency and increasing the success of all interested parties (students, families, education professionals and community representatives).
In our context, Organic Law 8/1985, regulating the right to education, develops the Constitution, initiates the guarantee and recognition of the right to a basic education that guarantees comprehensive training and allows the full personality development, looking for a quality education for all students. Organic Law 2/2006, on education (LOE) and its recent modification (Organic Law 3/2020, LOMLOE), collects educational equity.
For this reason, we start from the contents of the subject we teach on inclusive education, together with the methodologies used (cooperative learning, Universal Learning Design, diversity of motivations, teaching methodologies and Sustainable Development Goals -SDG-), with the aim of training to our students as future professionals in the face of changing, diverse and complex realities.

Keywords: Inclusive education, initial training, education professionals, diverse and complex realities, Sustainable Development Goals (SDG).

THE EXCESSIVE WORKLOAD CAUSED BY THE COVID-19 PANDEMIC – THE CONSEQUENCES FOR SCHOOL PRINCIPALS IN POLAND

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Abstract
Over two years ago, humankind faced a global pandemic that significantly changed people's lives. The health crisis has affected education and its whole community (Lewis, 2021; OECD, 2021). Pupils, parents, teachers, school leaders, and all school staff have been put in a problematic situation. School managers were in an extreme position due to their responsibility for organizing schoolwork and the decisions they had to make during the pandemic. Management in such extraordinary conditions has increased the stress level and likelihood of health problems among school principals (Harris & Jones, 2020). It is also worth emphasizing that they may influence the school's staff and students' perceptions and behaviors connected with health issues (Van Duong et al., 2021).
The poster aims to indicate the consequences of work overload for school principals in Poland. The main research questions are:
1. To what extent have Polish school principals felt overloaded and stressed by work during the COVID-19 pandemic?
2. What kind of health disorders during the COVID-19 pandemic were indicated by Polish school leaders?
The results come from the online survey among school principals in Poland as a part of the international project *COVID-19 Health Literacy School Principals Survey.* The survey was conducted in 8 out of 16

provinces in Poland between June 2021 and December 2021. Local governments agents responsible for education were informed about the study. The questionnaire was translated into Polish and sent by email to schools principals with an invitation to take part in the survey and complete the online survey. The invitation was sent to schools situated in different regions in Poland (which differ in the degree of urbanization, industrialization, economic resources, and population density) and various school types (primary school, integrated primary school, a school for children with special needs, high school, comprehensive high school, vocational school, music school). In that study following sociodemographic factors were taken into consideration: age (year), gender (female vs. male), school type (mention above), and the number of pupils attending school. Also, work-related factors such as weekly workload (didactic work and management work) and the number of principals' work hours during the COVID-19 pandemic were analyzed. Participants were informed about the purpose and importance of the study. Completing the questionnaire took about 20-30 minutes. For data analysis, 928 questionnaires were taken into account as completed filled. The data obtained in the research were analyzed statistically. The study was reviewed and approved by the Research Ethics Committee of the University of Silesia in Katowice, Poland (KEUS.118/04.2021).

The poster will present the main findings of perceived Polish schools principals' work overload during the COVID-19 pandemic and its impact on their health conditions. The results will be explained by taking into account the sex and age of the respondents.

The conducted study revealed that surveyed school principals often and very often had to work longer than contractually agreed and were available for their colleagues, pupils, and parents in their free time (appropriately 68,3% and 71,3%). Most of them also had to give up leisure activities in favor of work (67,9%), work extra hours in their spare time (60%), waive breaks during working hours (57,3%), and forgo getting sufficient sleep in favor of work (50,5%). Regarding feeling nervous and stressed at work at school, 48,5% of participants confirmed it – 18,9% admitted they felt that way very often and 29,6% - fairly often. 38,8% of principals felt nervous and stressed at work sometimes. In the presented study, excessive workload indicators were higher for women than for men. Most examined principals assess their health as good (47,8%) and relatively good (30,1%). The primary health disorders that school managers indicated were: muscle pain (neck, shoulder, or back) and headache.

The study has some limitations. Firstly, obtained results relate to the research sample and cannot be generated due to purposive sampling. Secondly, the study was conducted in the middle of the pandemic, so principals could not reveal and notice all the health consequences of overworking. That suggests the need for continuing research among school managers and the long-term impact of working during COVID-19 on their health. It also gives indications for future actions aimed to strengthen mental resilience and prevent health problems among school principals.

Keywords: School principals, COVID-19 pandemic, workload, psychological stress, health problems.

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INITIAL TRAINING OF TEACHERS OF SOCIOCULTURAL SERVICES AND THE COMMUNITY: STREET ART AND SUSTAINABLE DEVELOPMENT GOALS (ODS)

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Abstract
Urban Art emerges in the public context as a cultural manifestation of social problems. It can be used as an example of communication and claim. Through it, the recipients are able to see beyond the artistic representation and even the message that the author wants to convey and relate it to day-to-day situations, with images and current problems. The technological and information oversaturation can be favorable,

since, being aware of the current social, political, economic and climatic reality, it facilitates the development of the activity and the creation of interesting and innovative discussion groups.

This educational proposal establishes the relationship of the use of Urban Art as learning measure based on a cultural journey through different murals, artists and countries with the aim of working also from the point of view of the Sustainable Development Goals (SDG), the importance of knowing our social, political, cultural and environmental reality. It seeks that the future teacher reflects on the meaning and value of current Art, expanding the usual space of great museums, beauty and perfection to enter the streets of cities full of singularity, criticism and irony and, where the people who experience it become the main character of the work, integrating and forming part of it.

It is used as a resource in the training of teachers of Secondary Education of Vocational Training, of Sociocultural Services and the Community, through the knowledge of outstanding murals throughout the world and in our own city, with the realization of an itinerary formative.

Keywords: Initial teacher training, educational intervention, urban art, sustainable development goals (ODS), educational itinerary.

TRAINING IN OPEN SCIENCE FOR PHD STUDENTS: THE STUDENTS' PERSPECTIVE

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Abstract
Studies in recent years from around the world have shown that between 15 to 50% of PhD graduates go on to work in Higher Education (depending on the cohort studied and how "work" is defined). These figures have led to the "PhD crisis discourse" (Cuthbert & Molla, 2015). A key feature of the PhD crisis discourse is that universities are producing too many PhD graduates compared to the number of academic jobs available, and that graduates lack skills that render them employable in jobs outside academia. Thus PhD education has been moving towards a pro-skills development agenda, with a particular focus on transferrable skills. This poster presents work undertaken as part of an EU funded project – "Opening Doors". The goal of this project is to shape more innovative, socially aware and integrative research graduates, ready to meet the challenges of the future through a training module in Open Science - the design of which was informed through stakeholder interviews and a co-design workshop. This was a for-credit, online, interdisciplinary, intersectoral and international learning experience that consisted of challenge-based learning with external organisations, lectures and activities about open science and open innovation, and included facilitated work on career planning. Course participants were invited to take part in entry and exit interviews and submitted a written reflection at the end of the course. Their perspectives on this training are presented here where issues around career prospects, communication in collaboration and a new understanding of impact were to the fore.

Keywords: Open science, PhD education, research impact.

EMPLOYING WHITENESS AS PROPERTY: LEADERSHIP IN HIGHER EDUCATION AND THE SIGNALING DIVERSITY WHEN YOU ARE WHITE

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Abstract
Academic leaders in the United States are tasked with establishing university strategic plans that facilitate a holistic educational experience in order to meet the needs of our diverse student populations. A holistic education includes the academic, social, emotional, and spiritual (meaning of life, finding purpose) necessities of our students. To this end, let us consider the leaders accountable for upholding this ethical imperative. This autoethnography examines the concept of Whiteness as Property (WaP) (Harris, 1993) to

identify how the distribution of power amongst educational leaders maintains whites in a space of racialized privilege while using people of color to signal their commitment to establishing a diverse university culture.

Using the WaP lens, allows for the analyses of the practices, behaviors, and other social performances administrators engage in to construct their leadership identities in relation to the current sociopolitical milieu concerning inclusion and diversity. Autoethnography illuminates these leadership practices in unique ways—the narratives are from the perspective of the non-traditional leader. We serve to collectively lead our universities in the right direction to meet our strategic goals and provide equable education for all students. As a working-class Latina occupying educational leadership roles, autoethnography permits the theorization of my liminal perspective to underscore the interconnected role of universities as apparatuses assisting in capital accumulation, legitimation, and production. The narratives provide an analytical and profoundly humanistic understanding of the experiences that shape our conscious behaviors, actions, and thoughts in our workplace.

Keywords: Whiteness as property, critical race theory, autoethnography, Latinx issues, leadership in higher education.

VIRTUAL PRESENTATIONS

TEACHERS AND STUDENTS

PROGRAM NOTES: EDUCATING MUSICIANS AND AUDIENCES IN PROFESSIONAL MUSIC TRAINING - THE TUT EXPERIENCE

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Abstract
This paper is written in response to the request to consider musical experiences at Western Classical Music concerts, and more specifically, the role of the program note that informs listeners and performers about the historical context of the composition and includes the composers' biographical details and compositional thinking. Program notes are similar to reading the "spoilers" before seeing movies. What follows is based on observations and reflections from the Tainan University of Technology (TUT), Taiwan, and its educators' experiences of teaching graduate music students. The idea put forward is that the content of the program note reflects the performers' interpretations of the composer's ideas, and access to this note provides an opportunity for music educators to reconfigure and strengthen their pedagogical approaches. By recognizing the intended role of the program note and its relation to the interpretation, understanding, and collaboration in music course curricula, music educators continue to grow in their range of practices. Knowing a composer's intention can be used to develop the performance of the composition and understand the genre and cultural/social/historical/political connections of the composer and composition, thus providing useful experiences for music students.

Keywords: Curriculum, composers, music concert, program note.

AN INNOVATIVE APPROACH IN THE EVALUATION OF SERVICE QUALITY IN A PEDAGOGICAL TRAINING PROGRAM

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Abstract
Quality is a term that is commonly considered to indicate a high level of customer satisfaction relative to factors that characterize a specific service. The most effective way to measure quality is to determine whether or not customers are satisfied. In the educational area, the constant search for improvements in the quality of educational services has led the scientific community to implement specialized measurement approaches in order to meet the quality expectations of trainees. The current research combines the evaluation model CIPP with the EppaikQual scale to measure the quality of the educational services of a Greek pedagogical training program. In this way, a management-oriented evaluation model is combined with a satisfaction measurement scale for the purpose of evaluating the program's quality from the trainees' perspectives. The research questions seek to determine the degree of trainee satisfaction based on the four levels of the evaluation and to define the level of the program's quality. A total of 489 trainee prospective teachers for the 2019–2020 academic period participated in the survey. The method of sampling without probabilities was adopted. After the completion of the program, participants were electronically provided with the measurement scale. The reliability and validity of the research tool were tested using confirmatory factor analysis. Data were analyzed by calculating the mean scores and the percentage frequencies of their agreement–disagreement in each index of the four levels of the evaluation. The survey results show that trainees are in general satisfied with the provided educational services. Their degree of satisfaction is higher for the learning outcomes and lower for the program inputs. In conclusion, it can be inferred that the participants in the training program appear to be satisfied, but they propose specific areas in which structural interventions are required in order to upgrade the level of quality of the educational services. The information gathered can contribute to sound administrative decisions with a view to improving and sustaining the training program.

Keywords: Program evaluation, CIPP, EppaikQual, service quality, pedagogical training, trainee satisfaction.

DEVELOPMENT OF A LESSON OBSERVATION SCHEDULE TO DOCUMENT PEDAGOGICAL CONTENT KNOWLEDGE FOR NATURE OF SCIENCE

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Abstract
The study describes the development of a lesson observation schedule, to document Science teacher pedagogical content knowledge for nature of science (PCKNOS) and a subsequent pilot study to test the instrument. The objective of the study was to develop an observation schedule that could document enacted PCKNOS. NOS refers to the epistemology and sociology of science, science as a way of knowing and understanding the natural world, and the role of values and beliefs of the scientific community in the development of scientific knowledge (Lederman, 1998; Lederman and Lederman, 2004). Shulman (1986) has defined pedagogical content knowledge as the intersection of the knowledge a teacher has of the subject material (content) and the translation of that knowledge into an accessible format for the learners (pedagogy). The ability of teachers to transform their understanding of NOS into a context suitable to facilitate student learning of NOS is known as PCK for NOS (Faikhamta, 2013). This PCK refers to a teacher's knowledge of which NOS aspects can be addressed in the teaching of science topics, an appropriate selection of instructional material or media and the correct use of metaphors, analogies or other pedagogical tools (Haunscin, Lee, & Akerson, 2011). According to literature, paper methodologies such as content representation and the pedagogical and professional experience repertoires (Betram and Loughran, 2011) are commonly used to measure science teachers' planned or espoused PCK. This study aimed to measure enacted PCK through lesson observation. The researcher developed a lesson observation schedule based on Aydeniz and Kirbulut's (2014) instrument to measure pre-service science teachers' topic specific PCK and included NOS aspects as presented in curriculum documents for science education. The schedule was piloted on two teachers through analyzing recorded lessons as the study was carried out during COVID-19 lockdown in 2020. Two raters were used to document teacher PCKNOS using the schedule and it was found to be suitable to measure PCKNOS.

Keywords: Pedagogical content knowledge, nature of science.

THE ROLE OF MOTIVATION AND JOB SATISFACTION IN THE USE OF MODERN TEACHING MODELS

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Abstract
The aim of this paper is to examine the role of some socio-economic characteristics, familiarity with the concept of advanced teaching models, job satisfaction and motivation to work with children in the use of modern teaching models.
A total of 83 teachers of Technical Education participated in the research. An online questionnaire was created to collect data, which consisted of 4 scales (SES; Job Satisfaction, Motivation to work with children, and Familiarity with advanced teaching models).
Most teachers are very satisfied with their work and are highly motivated to work with children. The results show that 84.21% of teachers are familiar with some advanced teaching models. Job satisfaction has a statistically significant influence on the use of modern teaching models (project teaching, problem teaching, flipped classroom, interactive teaching, team teaching). Familiarity with advanced teaching models positively contributes to the use of modern teaching models.
We conclude that job satisfaction is a very important segment in all organizations. A satisfied employee will be more productive. Each school should examine employee satisfaction and provide training on modern teaching models, which is going to contribute to the quality of the educational process.

Keywords: Job satisfaction, motivation, modern teaching models.

THE FUTURE AND SUSTAINABILITY OF MEANINGFUL EDUCATION LIES IN THE ABILITY OF SEASONED TEACHERS TO CULTIVATE NOVICE TEACHERS THROUGH STRENGTH-BASED-MENTORING

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Abstract
Newly qualified teachers are barraged with uncertainties and could seem inadequately prepared for the teaching profession. Even though graduates are believed to have sufficient subject content knowledge the average day could offer more interruptions than anticipated. Although this study will not aim dispute the quality or value of the curriculum offered; there seems to be an absence in the holistic development of educators. It is therefore imperative that experienced educators serve as mentors to expand the gain of their skills learnt through exposure and involvement in teaching, adding value to the education sector. As part of prospective doctoral study, the researcher will investigate whether a mentorship program for seasoned educators could offer guidance, stability and confidence to novice teachers by contributing maturity and responsibility.
South Africa has educational challenges 25 years post-apartheid; whether it be pit latrine, bilingual schools in monolingual areas (and vice versa) or often vandalized schools. These factors impact education ranging from macro- (education sector), meso- (socio-economic decline) as well as micro-level (teacher and learner) with majority support from the Department of Education to socio-economic challenges and little attention to educators. Hence, this study will purposefully focus on micro-level where educators could hold one another accountable to build educational capacity. The discovery of challenges novice teachers experience and whether possible gaps exist which could be filled by a suitable mentoring program will have initial priority, with the secondary intention to assist seasoned teachers on a road to self-discovery, embracing a servant leadership role in a quest to address these challenges, striving towards solutions in mentoring for the benefit of sustainable learning.
The study elects to include Secondary schools from different backgrounds in the Free State Educational District, involving teachers selected based on their eagerness to improve their life and teaching skills. A pragmatic research approach will be intended with the inherent use of mixed method research to analyze data. Quantitative data could point towards the possible gaps and challenges with the use of a questionnaire. From this data strengths-based-mentoring collaboration sessions will follow to obtain qualitative data about the suitability of a mentorship programme. Pragmatism as a research method complements the combination of positivism leading to the appreciation of its suitability in practice focusing on solutions.

Keywords: Mentoring, novice, strength-based, leadership, accountability.

DEVELOPMENT OF A COURSE FOR E-LEARNING TO THE TEACHING OF THE SUBJECT ANALYSIS OF VARIANCE

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Abstract
The random design is the simplest of all the designs that are used to compare two or more treatments. The analysis of variance is the central technique in the analysis of experimental data, the general idea of this technique is to separate the total variation in the parts which contributes each source of variation in the experiment. In the case of the random design, separates the variability of treatment. To facilitate education students, it focused on interpreting the results and not developing. It is important to use new technologies as a support to the teaching of the subject, in this document we propose different forms of feedback to the subject as statistical software, specialized web pages, applets, and virtual labs.
In this work an E-Learning course was developed on the platform Dokeos as support for the traditional kinds of design of experiments. In which, the subject of analysis of variance explains in a simple way what is the random design. The Dokeos platform was used because it is a free software based online learning suite and provides all the features that an online learning application needs, from the authorship of courses up to reports.
The objective was to adapt the above mentioned subject to an E-learning model in order (a) optimize the contribution of content, skills, and competencies that students must have, (b) the integration of statistical

software in courses to emphasize applications to the real problems as contexts, concepts and methods, (c) the development of interactive materials that facilitate updating and learning by experimentation, (d) the use of a model of continuous assessment that guide and prepare the students in their formation, (e) the participation of the collaborative learning online by assigning projects and activities to be carried out in working groups.

E-learning course helps students for three things. First, to save time, since they have different tools that help to solve real problems. Second, they make use of computer science to understand the themes of the platform and at the same time are at the forefront of technology. On the other hand, it is also transmitted to the students the idea that learning is a continuous process and that it should be done. Third, show students that these tools offered the platform is not important memorizing formulas or perform arithmetic calculations, if not who can concentrate on results more quickly. The third, show that students with these tools offered by the platform is not as important memorizing formulas or perform arithmetic calculations, if not who can concentrate on results more quickly.

Keywords: E-Learning, analysis of variance, Dokeos.

LIFELONG LEARNING AND THE SAFE USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE

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Abstract
Research has shown the frequent use of complementary and alternative medicine (CAM), its potentialities and risks. Aim: To characterize adults' knowledge and practices of CAM in order to identify the need to develop lifelong learning programs. After obtaining the necessary authorizations, between 1/10-5/12/2021, 115 adults living in Portugal, mostly women with a higher education degree, working full-time, with a monthly income perceived as medium, answered a Google Forms questionnaire on health (self-)care practices (HsCP). Most considered their health as good (44.3%), being satisfied with it (53%). The majority: took some care of their health (60.5%; 28.1% a lot); had no physical (56.1%) or psychological (78.3%) health problem diagnosed by a conventional health care professional. Regarding the extent to which the participants had knowledge of non-conventional health (self-)care practices (NCHsCP), most (39.5%) knew little about it (10.5% had no knowledge). The majority: had already looked for information about NCHsCP (55.8%), was interested in having (more) knowledge about it (77.2%), and had someone close to them who used and/or was using some non-conventional practice - NCP (57%). Only 14.2% had done training in some NCP and 5.3% considered it impossible to reconcile conventional and NCHsCP. The majority (65.8%) stated that knowledge about NCP is important to them as (future) health professionals (not applicable to 26.3%). As for the last time participants performed any HsCP, 30.2% considered it a NCP (19.8% were not sure). In terms of HsCP, 66.7% reported using conventional and NCP. Among those who have ever used any NCP: 47.1% did it with a professional and 34.3% by themselves and with a professional; 45.8% use it rarely; 93.2% had never done it against the recommendation of a (conventional) health professional. Among those regularly (at least once a year) accompanied by one or more conventional health care professionals, 54% had never talked about NCP. Regarding negative experiences with NCP, 89.8% never had any. The minor children of 13.9% had done some NCP (not applicable to 60.2%). Among the health care professionals, 80.2% had no course during their training mentioning NCP; in their professional experience, 64.2% had knowledge of situations in which conventional and NCP were used simultaneously; in the context of their professional activity: 51.9% had recommended, and 40.7% had referred someone to NCP. Even though these preliminary results are not worrying, they suggest adults living in Portugal would greatly benefit from lifelong learning programs focusing on the potentialities and risks of CAM.

Keywords: Alternative therapies, complementary medicine, health care, self-care, health knowledge, attitudes, practice.

TEACHING BASIC QUALITY CONTROL TOOLS BY ANALYZING THE ELECTRICITY SECTOR

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Abstract

There are many formidable and complex worldwide problems which can be analyzed using quality control tools that spark the interest of engineering students because they are currently important problems which impact their lives. Nowadays, there is a very important discussion on the phasing out of fossil fuels and the increment in the use of renewable energy sources to produce electricity. Solar and wind sources have the disadvantage that they are intermittent and on some days there may not be enough electricity produced from them. Therefore, the supply is reduced despite that the demand is constant or even increased during extreme weather conditions. In Mexico, there is a national debate about modifying several constitutional amendments to the Mexican energy reform of 2013 which allowed private generators to take over most of the electricity market. Among the main questions to answer in Mexico are: is it true that generating electricity from renewable energy sources leads to lower prices for the population? In the case of Mexico, why does the government complain about the electricity generation schemes legally allowed for private generators? The students must learn how to use engineering tools to reach the root of these problems and that there is also the need to search for hard data. The issues are so numerous and complex that a large part of the population is confused about who is right. In class the analysis is sketched, the students are very interested, and participate very actively in the discussion. However, the problem is not analyzed completely because of the time constraints. In this paper we show the analysis of these problems using industrial engineering tools. The objective is to answer these questions. An Ishikawa Diagram, a Decision Tree, a Pareto Diagram, a Quality Deployment Function and a reduced Failure Modes and Effects Analysis have been used to answer these questions. The analysis shows that despite the prices for generation of electricity from renewable energy sources the country does not benefit from most of the electricity businesses given to the private sector in Mexico. The quality control tools taught in engineering courses allow to analyze complex problems if used properly with the data needed for the analysis.

Keywords: Teaching, engineering, tools, electricity.

A STUDY ON THE INTERDEPENDENT EXPERIENCE OF COLLEGE STUDENTS PARTICIPATING IN ROLE PLAY-CENTERED COOPERATIVE LEARNING

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Abstract

This study is a qualitative study that explores the interdependence experiences of college students who participated in role play-oriented cooperative learning using case research methods. In the post-COVID-19 learning environment, interaction in a non-face-to-face environment is more emphasized. Therefore, this study attempted to examine specific aspects of how interdependence between learners is practiced in cooperative learning and discover the meaning of interdependence experience through this. Data collection was conducted focusing on class participation observation, in-depth interview, student class review, and reports. As a result of the study, learners' interdependence practice was 'achieved through responsibility', 'clear goal sharing', and 'emotional exchange', and the experience of interdependence was derived as 'becoming a subjective learner', 'improving communication skills', and 'discovering positive meanings of cooperation'. Based on the research results, for effective interaction in non-face-to-face classes, intimacy between teams, clear structuring of classes, expansion of interactions with other teams, and appropriate feedback from instructors were suggested.

Keywords: Role play, cooperative learning, interdependence, college students.

NARRATIVE INQUIRY ON THE SUBJECTIVITY CHANGE PROCESS OF LIFELONG LEARNERS IN PSYCHOLOGY

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Abstract
The interest in psychology in lifelong learning is increasing. So, how does psychology as lifelong learning actually affect lifelong learners? This paper analyzes the process of subjectivity change of a psychology lifelong learner as a method of narrative inquiry according to Lacan's subject theory that puts the purpose of psychology in subjectivity change. The participant is a English teacher who first encountered psychology in college and have been living as a psychology lifelong learner for more than 20 years. Through psychology learning, she was able to understand and accept her husband, who had a different personality from herself, to be able to care for her child's own career path, and to reconcile with her mother who had been fighting for her life. It is possible to form the self-subjective self, not the self as the approval and imitation of the other, and to move from the divided subject to the integrated subject. This study is meaningful in that it can show the effects of psychology as lifelong learning qualitatively and help design psychological lifelong learning.

Keywords: Lifelong learning, psychology, subjectivity, narrative inquiry, Lacan.

ALTERNATIVE EDUCATIONAL ACTIVITIES TO ENHANCE YOUTH'S PARTICIPATION IN SOCIAL INNOVATION IN HIGHER EDUCATION: THE CASE STUDY OF "ACTIVE CITIZENS" PROGRAM BY BRITISH COUNCIL IN A VIETNAMESE UNIVERSITY

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Abstract
The paper will provide the overview and practices of embedding social innovation into higher education through extra-curriculum activities in Vietnamese universities. The paper argues that the educational experiences provided by "Active Citizens" program can provide the youth necessary global skills, mindset and hand-on experiences to engage youth to social innovation through their social action projects. The study also recognizes that most challenging issue in carrying out this kind of program is to sustain students' engagement and their active investment in their initiatives. The study also sees great potentials for enhanced partnerships among university-community in terms of both professional and financial support for student's projects. Finally, there are discussions on embedding social innovation into Vietnamese universities to serve for higher education's third mission.

Keywords: Social innovation, active citizens, higher education, social engagement, global citizenship education.

ENGLISH SECOND LANGUAGE LEARNERS' CHALLENGES IN COMPREHENDING PHYSICAL SCIENCES CONCEPTS

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Abstract
Physical Sciences is a complex subject with many abstract concepts. This complexity is magnified by the learners' lack of the linguistic capacity to comprehend the concepts and engage actively in the teaching and learning process. Previous studies have alluded to the fact that science is a language on its own, which therefore makes it even more difficult for learners whose home language is different from the medium of learning and teaching. Previous research indicated that learners who are English second language speakers perform poorly in Physical Sciences because the majority of learners particularly from

townships and rural areas are only exposed to English in the classroom, and once they get out of the classroom, they start communicating in their home languages. It is against this background that the current study sought to determine challenges English second language speakers face in comprehending Physical Sciences concepts. In a quantitative and qualitative methodology, five grade 12 Physical Sciences teachers and 51 learners in their Physical Sciences classrooms were randomly selected from public schools in Johannesburg. To establish English second language learners' challenges in comprehending Physical Sciences concepts, a questionnaire was administered to the selected learners. The teachers were interviewed using a structured interview schedule to explore how they assisted English second language learners to overcome language challenges when learning Physical Sciences. Quantitative data was analysed and descriptive statistics were obtained and a regression analysis was done to find the correlation between these learners' marks in the subject English First Additional Language and their Physical Sciences marks. Qualitative data from teachers' interviews were analysed using content analysis. Findings from the learner questionnaire showed that 78% of the learners indicated that language plays an important role in them understanding high school Physical Sciences concepts and as such they failed to meaningfully understand the Physical Sciences terminologies and jargon used for each specific topic. They also indicated that they perform badly in Physical Sciences assessments as they struggle to engage in meaningful classroom discussions due to their poor proficiency in English, the medium of instruction. The analysis showed a positive correlation between learners marks in English as a subject and their Physical Sciences marks. Amongst others teachers indicated that they mostly used code switching as a strategy to assist learners understand concepts. The findings have implications on South African education policy makers to consider the use of home languages in teaching and learning.

Keywords: Code switching, English second language, language challenges, physical sciences.

USE OF ASSESSMENT FORMS TO EMBED SOCIAL JUSTICE PRINCIPLES THROUGH DIGITAL PLATFORMS IN HIGHER EDUCATION IN SOUTH AFRICA

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Abstract
This paper seeks to examine the extent to which assessment embed social justice principles in affording students with different learning abilities equal and fair opportunities to develop their intellectual abilities and remove ignorance. The aim was to establish if forms of assessment recognised principles of fairness and equity to build students' capacity to think critically and to make meaningful decisions that contribute towards a just social order. The study adopted a mixed method approach. Semi-structured interviews were used to enlist eight academic staff views on the matter. Data obtained from interviews were systematically sorted and categorised into common themes. A structured questionnaire was distributed and responded to by twenty students and data obtained from the instrument were analysed statistically. The study found out that some forms of assessment developed students' abilities by promoting a balanced, and equal opportunities. The acquisition of social justice principles enhanced learners' ability to think critically and to challenge social injustices and challenges that threatens their right to human dignity, development by instituting social change. The findings also demonstrate the importance of recognising students' learning styles and abilities through using forms of assessment in a balanced and fair manner. This study concludes that students' success after pedagogic encounters depended on balancing forms of assessment and developing their analytical thinking abilities. Such methodological skills and knowledge enable them to eliminate ignorance and social inequities. The study provides further insights regarding the use of assessment to cater for diverse students' aptitudes to advance humanity. It can be concluded that. assessment creates critical thinkers who challenge practices and policies that threaten human dignity and perpetuate inequalities.

Keywords: Assessment, digital platforms, equal opportunities, students learning abilities, social justice principles.

DESCRIPTIVE JUDGMENT IN ITALIAN PRIMARY SCHOOL EVALUATION

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Abstract
The pandemic situation has made it clear the limit of evaluation through decimal vote. It draws a measuring and classificatory logic. To overcome these limits, the Ministerial Order 172/2020 has introduced new procedure of students' assessment: descriptive judgment. It replaces the decimal mark with an assessment through "learning level" that allow to monitor the evolutionary process of the student (Castoldi, 2021). Furthermore, the fundamental characteristics of descriptive judgment are: transparency and clarity. Therefore, it is necessary to involve pupils in the assessment process and provide them with continuous feedback on the progress made.
The descriptive judgment also has negative aspects: it creates a gap between the disciplinary judgment and the judgment expressed based on the competence certification model. It does not pay attention to the peculiarities of the different disciplines: a single criterion is used for the evaluation without consider the differences between the various subject areas. Finally, the Ministerial Order introduced this change only in primary school and consequently a fracture is created with the lower secondary school.
Despite the negative aspects, descriptive judgment represents a way that goes beyond simple performance but allows you to focus on the learning process from the perspective of lifelong learning.

Keywords: Evaluation, competence, descriptive judgment, learning process, primary school.

SECONDARY SCHOOL STUDENTS' STUDY AMBITIONS AND PREREQUISITES FOR THE STUDY

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Abstract
The article reports on the results of empirical research, aiming to analyse the relationship between two constructs - aspiration to study and prerequisites for the study - both of which are subjectively assessed by secondary school students themselves. Aspiration to study (possibly also achievement-aspiration) expresses the expected level of performance or positions an individual wants to achieve. Prerequisites for the study then indicate whether an individual has the talent, previous education, will or sufficient motivation to achieve a particular goal or position. In the educational reality, it can be assumed that all four combinations of both constructs can occur, with the worst being the student's distrust of their prerequisites for the study combined with zero effort to be a good student. A questionnaire survey of a group of 907 secondary technical school students in one region of the Czech Republic provides data for categorising students into one of four combination groups and at the same time determining whether the number of students in categories varies with the year of study or field of study. It is not known whether research-based categorisation has previously been performed on these learning success constructs.

Keywords: Educational aspiration, ambition for study, prerequisites for the study.

USING A LEARNER-BASED ACTIVITY APPROACH IN DEVELOPING SCIENCE TEACHERS' READINESS IN INQUIRY-BASED LEARNING

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Abstract
The South African science curriculum expects secondary school teachers to adjust their ways of teaching to include inquiry-based learning that endorses learner-based activities. The learner-based activities refer to the processes of learning by doing where learners are not passive, but are rather encouraged to actively participate in their own learning experiences. This paper is necessitated by the limited literature that exists within the South African context about inquiry-based learning, which reveals that the implementation of learner-based activities continues to be a challenge for many teachers, especially in rural schools. Hence, during the teacher training program, the Physical Science teachers were engaged in various learner-based practical activities which involved problem-solving, which is a crucial component of inquiry based learning. This paper therefore drew from the constructivist theory (Vygotsky,1975; Piaget,1980) as lens to answer the leading research question which asks: "To what extent are the science teachers demonstrating readiness of the use of inquiry-based learning in their classrooms after participating in the training program?". Thus, a mixed method design was adopted where data was collected using as well as pre and post questionnaires to establish the Physical Sciences in-service teachers' beliefs and experiences towards their readiness in implementing inquiry-based learning in their classrooms after the teacher development program in one of the education circuit in rural Kwa-Zulu Natal province, in South Africa. The findings of this study indicates that the in-service teachers in this district had an impactful experience which positively shifted their attitudes towards their readiness of the use of inquiry based learning when teaching Physical Sciences.

Keywords: Inquiry based learning, in-service teachers, constructivist theory, learner-based activity, community of practice.

INFLUENCE OF PARENTS' EDUCATION AND PROFESSION ON SELF-ASSESSMENT OF SECONDARY SCHOOL STUDENTS' PREREQUISITES FOR STUDYING

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Abstract
The study is based on the concept of prerequisites for the study, which can be identified and assessed by established assessment tools or subjectively perceived and experienced at the entrance to education and throughout it. The subjective self-assessment of assumptions can be a source of self-confidence, self-efficacy, and proper study motivation, but on the other hand, the cause of study failure and drop-out. The empirical research aimed to determine whether parents' level of education and their profession influences the subjective evaluation of students' prerequisites for secondary school studies. Hypotheses assuming the statistical significance of the relationship between parents' level of education, profession, and subjectively determined level of prerequisites for the study were verified using the data acquired from the answers of 900 respondents who participated in the research. The influences of several moderating variables, i.e., gender, students' age, a field of study, and parent's gender, are also monitored in a more detailed analysis. Research findings can provide a basis for targeted planning and student-friendly strategies to prevent academic failure.

Keywords: Education, profession of parents, student, self-assessment, prerequisites for the study.

A STUDY ON STUDENT AGENCY OF COLLEGE STUDENTS WHO PARTICIPATED IN NON-FACE-TO-FACE CLASSES

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Abstract
The purpose of this study is to look at the student as agency who leads the class, and to examine the experience of mutual communication as agency. For this purpose, 4 students who took the social education and major compulsory classes at University A in South Korea were selected as research participants. In order to increase the coherence of the research purpose, in addition to the interview data, the class impressions and midterm and final test assignments written by the students were supplemented. The research results according to this study are as follows. First, the non-face-to-face discussion class allowed students to experience both fear and unfamiliarity from the non-face-to-face environment at the same time. In particular, the non-face-to-face environment made people hesitate about how to communicate. Second, group discussion improved communication between theory and reality by analyzing textbooks based on class theory and sharing the analysis results among students. Third, field trip facilitated the connection between online and offline, allowing them to look back on their own world of life and build confidence as a future teacher. The following are the suggestions accordingly. First, it should promote interaction with students and teachers. Second, the class should provide various connections outside the class. Third, strong motivation for class is required. This study does not suggest a universal law of student agency in that it only targeted students from the College of Education of A University in Korea. However, it is meaningful in that by exploring the process of developing student agency, it gave hints on what direction to take in the future.

Keywords: Non-face-to-face classes, student agency, qualitative study, college student, South Korea.

NATURAL SCIENCES TEACHERS' PERCEIVED COGNITIVE ACADEMIC LANGUAGE PROFICIENCY (CALP) NEEDS

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Abstract
Teachers Cognitive Academic Language Proficiency (CALP) has been found to be important for meaningful teaching and learning of any subject. Over the years research has focused more on English second language learners' CALP needs and less on the teachers. Because teachers are the cornerstones who drive the process of teaching and learning in the classrooms, their proficiency in the language of teaching and learning are vital. In the South African context, English is regarded as the official language of teaching and learning from grade 4 onwards despite that both teachers and learners come from diverse linguistic backgrounds where English is a second or third language. Underpinned by the socio-cultural theory as the theoretical framework, the paper reports on a study that determined both in-service and pre-service teachers' perceived CALP needs when teaching Natural Sciences in multicultural township schools. In a qualitative research approach 12 teachers were randomly selected who comprised of six in-service teachers and six final year pre-service teachers enrolled for a Natural Sciences course at a University in South Africa. Each teacher was interviewed once using a semi-structured interview schedule which allowed them to freely express their perceived CALP needs. The data was analysed using a constant comparative method. Findings from the analysis of data showed that teachers experienced many challenges when teaching Natural Sciences using English, a language different from their home languages and those of their learners. They indicated that because science is a unique language on its own they struggle to spell, pronounce, understand and most importantly to explain to the learners using English. The teachers indicated their little to non-exposure to English other than in the classrooms compared to their home languages. Whilst some of the teachers perceived English as an important language due to its universality, they however indicated that code switching to own home language and those of the learners was inevitable when it comes to meaningfully explain some scientific concepts and processes in a way that learners would comprehend. However, others acknowledged the challenges of using code switching in the linguistic diverse classroom environments. Most teachers suggested training

workshops intended to develop them with skills to identify appropriate terms and expressions, and explain complex scientific concepts in English. These findings have implications on both pre-service and in-service teacher professional development programmes.

PROMOTING SELF-REGULATED LEARNING IN NATURAL SCIENCES TEACHING THROUGH TECHNOLOGY INTEGRATION

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Abstract
The advent of the Fourth Industrial Revolution presents enormous opportunities for teachers to embrace digital transformation. The adoption of innovative pedagogical strategies is central to coherent development of scientific literacy in science classrooms. Coherent development of scientific literacy in science classrooms requires teachers as key agents of educational change to embrace pedagogic innovation. This study examined the role of technology integration as a sustainable means to promote self-regulated learning in Natural Sciences teaching in South African township schools. The study adopted a mixed-method approach as part of exploratory descriptive survey design and involved purposively selected teachers from South African township schools as participants. Quantitative data was collected through the administration of a survey questionnaire with the participants while qualitative data was collected through semi-structured interviews and classroom observations. Key findings demonstrated that technology integration plays a pivotal role in the promotion of self-regulated learning in Natural Sciences teaching. Theoretical implications for technology-enhanced learning are discussed.

THE EFFECTS OF TEACHER EDUCATION ON TECHNICAL VOCATIONAL EDUCATION AND TRAINING COLLEGE LECTURERS

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Abstract
The aim of this paper is to analyse teacher training with regard to Content Knowledge (CK) and Pedagogical Content Knowledge (PCK) by universities in South Africa. The universities' training of teachers does not cater for Technical Vocational Education and Training (TVET) college lecturers, who are thus required to teach courses in which they are not competent. At the beginning of democracy in South Africa, reform of teacher education was initiated. This reform was followed by a closure of the teacher training colleges which therefore shifted the responsibility for training of future teachers to the universities. Minimum Requirements for Teacher Education Qualifications (MRTEQ) were adopted as the policy document for admission into the teaching profession. The reforms, however, excluded the training of (TVET) lecturers. TVET College lecturer training has not changed and most of the problems regarding lack of Content Knowledge (CK), PCK, and Subject Matter Knowledge (SMK) have not been attended to. This has negatively influenced the quality of lecturers at TVET colleges and resulted in a poor quality of TVET education. Semi-structured interviews collected the data regarding training in relation to courses currently being taught, as well as measuring CK, PCK, and SMK in those courses. The findings revealed that the lecturers were not competent in the courses they taught. Thus, the study strongly recommends more teacher training of the continuous professional development.

THE USE OF IMPROVISED RESOURCES IN SCIENCE CLASSROOMS IN SOUTH AFRICAN TOWNSHIP SCHOOLS

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Abstract
A considerable number of schools in South Africa are under-resourced and this dilemma poses formidable instructional challenges which stifle teachers' ability to foster meaningful teaching and learning in science classrooms. There is a critical need to circumvent general lack of resources in township schools by harnessing pedagogical affordances of improvised resources. In response to this key strategic imperative, the study examined the use of improvised resources in science classrooms in South African township schools. The study adopted a generic qualitative design and involved purposively selected science teachers from South African township schools as participants. Qualitative data was collected through semi-structured interviews and classroom observations. Key findings demonstrated that the use of improvised resources is central to coherent development of scientific literacy and sustainable inculcation of requisite scientific skills in science classrooms. Theoretical implications for pedagogic innovation are discussed.

Keywords: Improvised resources, affordances, scientific literacy, pedagogic innovation.

REFLECTIONS BY PRE-SERVICE ECONOMIC AND MANAGEMENT SCIENCES TEACHERS ON THEIR EXPERIENCES OF REMOTE LEARNING IN CURRICULUM PRACTICE

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Abstract
Curriculum reformists were caught off-guard over the past two years by the unforeseen and extreme pressure of the COVID-19 pandemic. This phenomenon threatened to engulf humans in despair. Institutions of higher learning initiated moves to remote learning, as a measure to prevent the spread of the virus while continuing to promote teaching and learning. Scholars were absorbed by grasping the importance and application of a revolution in curriculum reform. The use of remote learning in curriculum practice to improve teaching and learning is a recent initiative in the package of curriculum and pedagogical reforms in South Africa. The aim of this paper is to reflect on adaptive experiences of pre-service economic and management sciences teachers, their ability to adapt curriculum practice to remote learning of this specific curriculum, and pedagogical reform of the use of remote learning in schools. An architecture theory, which draws on the famous quotation of Adolf Loos's parable about "the poor rich man" and whether they really understand the lesson, was used as the main lens for the study. An interpretative phenomenological analysis approach, as a form of critical education science, was employed to generate data. The basic purpose and essence of the IPA approach in a qualitative research study is to examine the life experiences of the research participants and to allow them to narrate the research findings through their lived experiences and critical reflections, thereby deliberately embracing diversity as characterised by the unequal context of South African education. Phenomenological analysis was used to arrive at the following findings. First, higher learning institutions are obligated to create practical learning experiences for pre-service teachers. Second, the phenomenon that resulted in the necessity to embrace remote learning impacted participants academically, socially and psychologically. The paper concludes with the recommendation that the prefigured remote learning for professional teaching practice should be reconfigured.

Keywords: Curriculum practice, phenomenon, pre-service teachers, COVID-19, qualitative research.

HARNESSING PEDAGOGICAL AFFORDANCES OF IMPROVISED RESOURCES IN GEOGRAPHY TEACHING AND LEARNING IN TOWNSHIP SCHOOLS

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Abstract
Meaningful teaching and learning in South African township schools is hampered by general lack of instructional resources. As key agents of educational change, teachers face the key imperative to embrace pedagogic innovation with a view to realize envisaged educational outcomes. This study explored pedagogical affordances of improvised resources as a sustainable means to enhance the quality of instruction in Geography teaching and learning in township schools. The study adopted a mixed-method approach as part of exploratory descriptive survey design and involved purposively selected teachers from South African township schools as participants. Quantitative data was collected through the administration of a survey questionnaire with the participants while qualitative data was collected through semi-structured interviews and classroom observations. Key findings demonstrated that the use of improvised resources provides meaningful platforms to address pervasive knowledge gaps through coherent development of conceptual understanding in Geography teaching and learning. Theoretical implications for pedagogic innovation are discussed.

Keywords: Improvised resources, affordances, pedagogic innovation.

DEVELOPMENT OF AN AUTOMATIC ASSESSMENT IN PISA CREATIVE THINKING - AN EXAMPLE OF THE DIVERSITY AND ORIGINALITY IN WRITING EXPRESSION

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Abstract
The creative thinking in the Programme for International Student Assessment (PISA) is defined as the competence to engage productively in the generation, evaluation and improvement of ideas, that encompasses 'creative expression' and 'knowledge creation and creative problem solving' areas (OECD, 2019). The creative expression is involved in writing and expressing your ideas artistically, and discover more ways to help your creativity flourish thereof develops children's cognitive and communication skills (Tompkins, 1982). Given the increasing complexity of the test objectives, however, an automated scoring tool for open-ended questions in simulation test has not been developed yet. This study conducted the Google Bidirectional Encoder Representations from Transformer (BERT), the natural language processing model proposed by the deep learning artificial intelligence research team, to develop an automatic scoring for 'creative ideas' and 'evaluating and improving others' ideas' for written expression. From the empirical evidence from a written expression assessment developed for 'generate diverse ideas' (alternative story titles) and 'generate creative ideas' (a short story idea) in Taiwan, the accuracy rate of the consistency between the automated scoring and expert scoring are 83.61% and 85.07%, respectively. This automated scoring tool provides teachers, parents and scholars a recommendation criteria that reduce the risk of raters' subjective factors (e.g. educational background, teaching experience and cognitive pattern) or human error (e.g. typo-mistake). Importantly, integrating the automated scoring mechanism and digital assessments offers an effective feedback loop to help children develop and define their creative talents faster through self-learning journey.

Keywords: PISA, creative thinking, written expression, Google BERT, automated scoring.

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ASSESSMENT OF THE PROBLEMS THAT AROSE IN THE DISTANCE EDUCATION DURING THE PANDEMIC FOR THE STUDENTS AT THE GREEK PUBLIC VOCATIONAL TRAINING INSTITUTES

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Abstract
The rapid spread of coronavirus (COVID-19) in early 2020 was an unexpected situation that affected all areas of human life, especially education and training. Distance education soon replaced classic, during the COVID-19 pandemic, due to the necessary social distancing to maintain global health.

Distance education is not an unknown form of education, as it is often used as educational tool at all levels of education. However, the sudden and exclusive use of distance education during the pandemic created concerns in members of the academic community and brought about radical changes at both, educational and psychosocial levels.

The purpose of this research is to record the degree of acceptance of distance teaching and learning methods in vocational education and training in Greece, especially in students studying at Public Vocational Training Institutes (PVTIs) and to identify potential obstacles or benefits of online learning during COVID-19.

Distance education in combination with distance e-learning is a form of distance education in which participants of the educational process, i.e., teacher and students, are in a different physical space and communicate with synchronous and/or asynchronous internet platforms.

Due to the nature of e-learning and its rapid spread in the educational community during the current pandemic, there is insufficient research examining its effectiveness in vocational education. The rapid development of mobile devices and wireless networks does not automatically mean the successful utilization and sustainability of e-learning systems.

In order to study the experience and problems of distance learning platforms, quantitative research took place among the PVTI students through questionnaire. The sample of the quantitative research consisted of 768 Greek PVTI students that have responded, and a pilot statistical processing of the received data has been done. To track the experience with the distance learning platforms, the sample has been asked to mention the potential issues faced with the platforms. Most of the respondents mentioned technical and accessibility issues. A variety of issues have been mentioned, either difficulties of the users or problems of the system. In parallel, they pointed out the advantages of personal contact and feedback from their professors. It is interesting that only a small part of the sample reported no problems at all.

The research shows moderate percentages of satisfaction from the enhancement of students' skills and from the coverage of their educational needs, while highlighting the upgraded role of asynchronous education platforms e-class, Moodle and e-classroom and of synchronous platforms Webex and Zoom.

Keywords: Distance education, vocational education and training, e-learning platforms, pandemic, PVTIs in Greece.

RENEWING THE CURRICULUM TO PROMOTE EPISTEMIC COGNITION IN THE KNOWLEDGE SOCIETY: SOME PROCEDURAL PRINCIPLES

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Abstract
In our Knowledge Society, the division of cognitive labor, the specialization of knowledge and the brisk growth of new information and communication technologies provide a complex challenge for those tasked with selecting what is worth teaching and how to do it. The ease of access to information due to advanced and user-friendly technologies often gives us the illusion to know more than we actually do. This "epistemic disease" is a danger to both democracy and public health. The educational system must therefore encourage good epistemic habits consistent with responsible citizenship. From a didactic perspective, this requires updating the curriculum in the light of the educational challenge of the 21st century: making students aware of what knowledge is and what knowing means by fostering their epistemic cognition. Since epistemic cognition is concerned with the acquisition of a habitus, that is, a

durable disposition to act in a certain way under certain circumstances (second-level curriculum objective), curriculum updating should not be reduced to a mere quantitative increase in the knowledge to be taught. On the contrary, this revision should address, on a qualitative level, how the selected disciplinary content is didactically transpose. In this contribution, we intend to propose some procedural principles – conceived as pragmatic patterns of behavior – that can help teachers design instructional activities consistent with the goal of promoting students' epistemic cognition. These procedural principles will be formulated based on a conception of discipline as a correlated system of epistemic products and expert practices of knowledge construction, validation, evaluation and justification.

Keywords: Epistemic cognition, procedural principles, curriculum design, didactic transposition, disciplinary epistemic practices.

TRANSFERENCE OF TEACHERS' EMOTIONAL INTELLIGENCE TO STUDENTS DURING ADOLESCENCE

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Abstract

Introduction: This study explores the impact of teachers' emotional intelligence on the emotional intelligence of students aged between 14 to 16 yrs. studying in the 9th and 10th grade. The study is interested to understand the level of transference of teachers' emotional intelligence to the students through the teacher-student interactions that happen at schools. This is the age where the students are highly vulnerable to their surroundings and need highest support from teachers and teachers' way of behavior has huge impact is the hypothesis.
Background: Adolescence is a very vulnerable age where the children need the support of an adult to identify and maneuver through life. School is one place where this is accomplished majorly. But are the teachers equipped enough to provide this support emotionally in this new generation with technological advancements? And how is the EI of teachers affecting that of the students? This study focuses on this question.
Methodology: This is a quantitative analytical study involving administering of two questionnaires (one to teachers and one to students).
Sample considered were students and teachers from schools from Karnataka state who consented to be part of the study. Each teacher was mapped to the students who were taught by the teacher. Emotional Intelligence of both teachers and students was measured using Bar-On EIQ.
Results: There is no correlation between the teachers and students' emotional intelligence. Analyses was performed using mean analysis, Anova and exploring correlations between the components of EI between teachers and students.
Conclusion: This result of no correlation could be due to lockdown and further research (both qualitative and quantitative) needs to be conducted to see if this is the effect of the pandemic and the lockdown.

Keywords: Teacher, student, emotional intelligence, adolescence, interaction.

EXPLORING THE ROLE OF TECHNOLOGICAL PROCESS IN CIVIL ENGINEERING AND CONSTRUCTION STUDIES AT TECHNICAL VOCATIONAL EDUCATION AND TRAINING (TVET)

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Abstract

Civil Engineering and Construction studies are subjects that develop and promulgate knowledge and skills through teaching, learning and assessment. The aim of the study was to explore the perceptions of lecturers regarding the role of technological process in Civil Engineering and Construction Studies at

TVET colleges in the Free State Province in South Africa. While the objective is to determine the perception role of technological process in Civil Engineering and Construction (CEC) studies during the teaching, learning, and assessment process, When the driving research question was: what is the role of technological process in Civil Engineering and Construction Studies at TVET colleges with regard to teaching, learning, and assessment? The mix method consisting of quantitative and qualitative elements was employed. A questionnaire and a face-to-face interview were used as instruments to gather data. Twenty-six (26) CEC studies lecturers from four (4) different TVET colleges in the Free State province in South Africa. The study revealed that all lecturers prefer technological process as their main teaching and learning methods, in particular for final assessment.

Keywords: Technological process, civil engineering construction, technical vocational education and training.

THE CHALLENGE OF THE INITIAL TRAINING OF MATHEMATICS TEACHERS: KNOWLEDGE, PRACTICE, AND IDENTITY

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Abstract
In this research we pretend to answer the question: how is the initial training of mathematics teachers in the field of geometry? We argue that it is especially relevant to examine the content of mathematics teacher training in order to improve training processes. For this, we have analyzed training tasks and their management by the teacher educator about polygons, the construction of the definition and different classifications. The results show the variety of knowledge that is combined in this stage, including professional knowledge, professional practices and professional identity, providing evidence of theoretical advances in the field.

Keywords: Initial teacher training, didactics of geometry, professional knowledge, professional practices, professional identity.

THE IMPACT OF "ROLE PLAY" AS A TEACHING APPROACH IN CIVIL TECHNOLOGY: A CASE STUDY

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Abstract
Civil Technology is one of the subjects in Technical and Technology that requires lecturers and student teachers to take full responsibility for class and workshop. The aim of the study was to assess the impact of role play as a teaching approach in Civil Technology safety as the topic. While the objective was to examine the impact of role play as a teaching approach that imparts sustainable knowledge and application in subject content. Participants in the study were thirty-two (32) third-year Civil Technology students from the University of Technology in the Free State province in South Africa. The Mix method, consisting of quantitative and qualitative components, was used to collect data. The findings of the study indicated that students have better construal and mastery of the content application when they are granted free role play to determine their own knowledge and application style.

Keywords: Civil technology, safety, role play.

CULTURALLY RESPONSIVE TEACHING: A BRIDGE OVER THE DIVERSITY DIVIDE IN HISTORICALLY WHITE MULTICULTURAL SCHOOLS OF SOUTH AFRICA

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Abstract

This purpose of this paper is to report on white teacher perceptions of the characteristics associated with multicultural education and the related classroom practices in promoting Cultural Responsive Teaching (CRT) in historically white schools (HWS) in the Northern Cape province of South Africa. The pre-democratic South African education system was characterised by inequality based mainly on race. There were enormous inequalities between the education provided for blacks and whites. The advent of a democratic South Africa in 1994, made it possible for black learners to enrol at HWS. The majority of schools reacted by assuming an assimilation approach. This resulted in a number of challenges for HWS's. The authors argue that the promotion of CRT in HWS's could serve as a bridge to address the diversity divide experienced in most HWS's. The researchers elected to employ the quantitative research method, to ascertain white teachers' perceptions of the characteristics of multicultural education and their perceptions of multicultural classroom practices in promoting CRT in HWS's in South Africa. Some of the findings of the study indicate that white teachers regard the eradication of fear and suspicion as an important multicultural characteristic to promote CRT.

Keywords: Culturally responsive teaching, diversity, multicultural.

PREPARING AFRICAN LANGUAGE STUDENT TEACHERS FOR THE WORKPLACE IN SCHOOLS: A STUDY IN SOUTH AFRICA

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Abstract

There is considerable agreement that learning to teach African Languages (AL) is optimized when coursework learning is combined with quality practice learning experiences in schools. The importance of role of (AL) in teacher education programmes and in children's learning is of paramount importance. This study focuses on the use of the African Language (AL) as the language of learning and teaching (LoLT) and its impact on the language development of (AL) student teachers and AL learners. The main aim of this study was to explore the views of a group of student teachers on their practice learning experiences in a 'teaching school' (TS). Against the background of major theories in Home Language (HL) teaching and learning, this topic is contextualized within the South African education system. Through qualitative analysis of a dozen semi-structured interviews, this study identifies the issues that limit the ability of African Language Education (ALE) programmes to prepare student- teachers for teaching in South Africa. Based on the findings, a questionnaire was designed to determine the extent of the impact of student teachers' limited on African Language Proficiency (ALP). A comparison of teacher and learner written errors was made. The findings of the questionnaire responses are presented. Recommendations are made on how student teachers can improve their teaching approaches to ensure quality AL teacher input and AL learner performance. Qualitative questionnaires and (focus group) data were collected, involving all the student teachers in the programme. The responses to the questionnaire were analysed descriptively. The study was conducted at an urban campus of a South African university.

Keywords: African language, home language, teaching schools, African language proficiency, African language education.

THE EVALUATION OF TECHNOLOGY-ASSISTED SELF-REGULATED LEARNING INTEGRATED WITH CPS THROUGH LEARNING OUTCOME

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Abstract
The self-regulated learning (SRL) model to develop an autonomous approach to learning (Zimmerman, 1990), and, recently SRL has been integrated with co-regulated learning (CoRL) and socially shared regulation learning (SSRL) (Järvelä & Hadwin, 2013). A four sessions self-learning session, co-learning session, mutual learning session, and teacher-directed learning was proposed by Ho (2014) and can be applied easily in the classroom to implement SRL, Co-RL, and SSRL. Moreover, technology-assisted learning can provide various online-learning resources to scaffold students for learning language skills (Ahmad, 2016). For example, a learning platform can provide learning materials, interaction discussion boards, updating group discussion results, etc. A technology-assisted SRL (TSRL) integrated with a collaborative problem solving (TSRL+CPS) framework was proposed to forbid students from losing their discussion goal in co-learning and mutual learning sessions (OECD, 2017; Li & Liu, 2017; Kuo et al., 2020). Further, the CPS behavior transitions were explored last year (Chen et al., 2021). Students had better write down their problem-solving process on a personal worksheet before the discussion first. Then everyone in a group has to post her (his) worksheet on a group worksheet and share their thoughts before writing down the group consensus. The CPS framework (OECD, 2017) and some related instruction words are shown in Table 1. Two English classes in grade 7 and two math classes in grade 4 participated in the experiments. One of the English classes was assigned as an experiment group instructed by TSRL, and the other was set as a control group taught by traditional group teaching. The experimental results showed the experimental group had improved more than the control group. For math classes, one of them was assigned as an experiment group instructed by TSRL+CPS, and the other was set as a control group taught by traditional group teaching. The difference between the post- and pre-test of the experimental group showed a significant difference and indicated TSRL+CPS could improve the learning outcomes of students. Moreover, analyzing the two exams of two groups by ANCOVA, the results showed significant differences between two instruction methods, TSRL+CPS, and traditional group teaching. Moreover, TSRL+CPS is better than traditional group teaching.

Keywords: Self-regulated learning, collaborative problem solving, instruction words.

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Table 1. CPS framework and examples of the instruction words.

CPS skills		Collaboration skills		
		(1) Establishing and maintaining shared understanding	(2) Taking appropriate action to solve the problem	m (3) Establishing and maintaining team organization
Problem-solving skills	(A) Exploring and understanding	(A1) Discovering perspectives and abilities of team members Instruction example: My approach is …	(A2) Discovering the type of collaborative interaction to solve the problem, along with goals Instruction example: I think using … is better.	(A3) Understanding roles to solve the problem Instruction example: I write … first. Let me help you.
	(B) Representing and formulating	(B1) Building a shared representation and negotiating the meaning of the problem (common ground) Instruction example: Why is your answer written in this way?	(B2) Identifying and describing tasks to be completed Instruction example: The topic is …	(B3) Describe roles and team organization (communication protocol/rules of engagement) Instruction example: You have to help check it!
	(C) Planning and executing	(C1) Communicating with team members about the actions to be/being performed Instruction example: I think this is our group consensus. What do you think?	(C2) Enacting plans Instruction example: Hello everyone, I'm ... and I want to report content ...	(C3) Following rules of engagement, (e.g. prompting other team members to perform their tasks) Instruction example: Please participate in the discussion, ... I want to know your opinion.
	(D) Monitoring and reflecting	(D1) Monitoring and repairing the shared understanding Instruction example: My answer is wrong. I'll modify it here.	(D2) Monitoring results of actions and evaluating success in solving the problem Instruction example: During the group discussion, ... proposed ... Our final consensus is ...	(D3) Monitoring, providing feedback and adapting the team organization and roles Instruction example: Next time we suggest … be the team leader.

Note. Adapted from *PISA 2015 collaborative problem-solving framework,* by OECD, 2017, p. 12.

ENHANCING *BATHO-PELE* PRINCIPLES IN THE CONTEXT OF SCHOOL ADMINISTRATION CLERKS: THE QUEST FOR PUBLIC SERVICE EXCELLENCE

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Abstract
The operational image of the Public Service is received and noted with a compromised image. It is still plagued with negative attitudes in terms of service standards, particularly customer service and 'Batho-Pele' principles as displayed by School Administration Clerks. There are further notable challenges underpinned on a quest for a coherent transformed, transparent, efficient and accurate responsible service delivery to the necessities of all citizens. The latter ideals are pertinently elucidated by Public Service Vision thus saying: "A better life for all South African citizens by putting people first". The "White Paper in the context of the Public Service, articulates the following eight essential pillars, namely: Consultation on service rendered; specification of service standards in respect of quality to be rendered; unrestricted access to service delivery; courteous treatment of clients with integrity; Openness and transparency of Departmental operations and redress on failed quality standard rendered as well as assurance on the value for money within the constraints of financial budgets
'Batho-Pele' is a Sesotho adage meaning "people first." This is the ideal since 1997, a government initiative to transform public service delivery to citizens enshrined on the eight basic principles alluded. The study engages the qualitative research Free Attitude Interviews (FAI) dynamics to gather data on the need for an inviting collaborative service delivery; the key points in delivering quality service; the

challenges in respect of service delivery; the environment conducive to a progressive quality service delivery as well success indicators to arm inviting service couched in the eight *Batho-Pele* public service principles. The study composed of administration clerks at both primary and secondary schools who are male or female in gender. The base for the discussion in this study is informed by the Critical Theory as a theoretical Framework adopted. To fortify our service excellence through *Batho-Pele*, critical elements on both Nigeria and Botswana service chatters have formed reference base to this research argument on matters of positive human treatment for service distinction. The study concludes with the fact attentive customer listening; show of human respect; personal integrity; quality service standards and swift response to customer grievances enhance the quest for *Batho-Pele* service excellence. The recommendation is that clerks in new public entrance ought to be inducted in this service ideal with further research undertaken for both relevance and sustainability.

Keywords: *Batho-Pele principles, constitutional bill of rights, critical discourse analysis (CDA), critical theory (CT), free attitude interviews (FAI).*

THE PRE-SERVICE TEACHERS UNDERSTANDING OF FRACTION AND HOW FUTURE INSTRUCTIONS CAN BE IMPROVED TO OPTIMISE LEARNING

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Abstract
There is an ongoing debate on whether preservice teachers should be taught the mathematics content knowledge because they start their mathematics content courses believing that they know enough mathematics to teach at a primary school level. Previous research has shown that much of the preservice teachers' knowledge lacks conceptual understanding. Consequently, the current study explored preservice teachers' knowledge of fractions. The study focuses on preservice' teachers' knowledge when comparing sizes of different fractions. The study will identify what the preservice teachers know about the comparison of size when it comes to fractions. A better understanding of how student teachers understand mathematics will inform better teaching methods for future instructions. This is to inform better instructional design in future ITE courses. The needed data consisted of 90 preservice teachers' activity scripts and a task-based interview of some students. The study was guided by the research question: What is the preservice teachers' understanding of fraction comparison, and how can future instruction be improved to optimize learning? The study adopted a mix-method approach where preservice teachers' responses to activities items were analysed from a first-year module conducted at a university level. Content analysis of the data yielded important findings that showed that preservice teachers have some misconceptions when they must determine the bigger fraction between the two. This study may be helpful to academics designing initial teacher education courses for mathematics and teachers who are already teaching mathematics in primary schools.

Keywords: *Mathematics for teaching, initial teacher education. preservice teacher practices, fractions, error analysis.*

CULTIVATION OF INNOVATIVE ABILITY OF TALENTS IN JOB TRAINING COURSES FROM THE PERSPECTIVE OF EDUCATION ECOSYSTEM

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Abstract
Focusing on the cultivation of talents' innovation ability by the professional course system of unmanned aerospace vehicle (UAV) technology, we will explore the talent cultivation mode from the perspective of education ecosystem, analyze the low enthusiasm for independent learning in talent cultivation, how to reflect the job demand, closed-loop talent evaluation and lifelong learning how to implement and other issues. Innovative education models, curriculum system design, training quality assurance and other methods and mechanisms driven by job competency requirements are studied, which actively coordinate to "producers", "decomposers" and "consumers" in the innovative education ecosystem and "inorganic

environment" and other major factors, aiming to explore the innovation ability training of high-quality innovative talents. Combining scientific literacy, innovative talents with "knowledge-ability-quality" are cultivated. Combined with the innovative education model of the education ecosystem, the innovation ability of talents will be improved. Combined with talent evaluation feedback and training exchange mechanism, the improvement of iterative education ecological cycle can be realized.

Keywords: Job training, education ecosystem, innovative ability, innovative talents cultivation.

RELATIONSHIP BETWEEN AUTONOMY SUPPORT AND STUDENTS' SCHOOL WELL-BEING: THE MEDIATING ROLE OF NEED FOR COMPETENCE

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Abstract
Within a *Self-Determination Theory* perspective (SDT; Deci and Ryan, 2000), this study aims to examine the relationship between students' perception of autonomy support provided by teachers and their school well-being (439 students, mean age = 12.2 years; 51% male). SDT proposed the existence of three universal, innate psychological needs of all human beings: autonomy, relatedness and competence. In the school context, the need for autonomy refers to students' desires to experience a sense of self-determination of their behavior. The need for relatedness refers to students' desires to experience a sense of connection with teachers and classmates. The need for competence refers to students' desires to interact effectively with the school environment. The satisfaction of these needs plays an important role in several educational outcomes (e.g. school satisfaction and motivation), particularly when teachers support students' autonomy, attempting to understand, acknowledge, and where possible, be responsive to students' perspectives. In the school specific domain, many recent empirical studies have used the SDT as a conceptual framework, to show that an autonomy-supportive teaching style tends to predict adolescents students' needs satisfaction and school well-being (Ryan and Deci, 2020). Satisfaction of need for competence seems to be a particularly strong predictor of adolescent students' subjective well-being at school (Tian, Han and Huebner, 2014). According to Tian (2008), subjective well-being in school includes students' school satisfaction and affect, that is the frequency with which students experience positive emotions.
In Italy, research based on the SDT in schools is limited, particularly as regards the effect of students' needs satisfaction on their well-being. The present paper looks carefully at the mediating role of need for competence considering the relation between the support for autonomy provided by teachers and the adolescents students' positive and pleasant emotions at school, using a Structural Equation Modelling. The posited model fitted the data quite well: x^2 = 225 (df = 101), p< .001; TLI = .968; SRMR = 0.037; RMSEA = 0.053, 90% CI [.044, .062]. Results show that a greater perception of support for autonomy has a positive effect on the students' positive emotions, and this effect is partially mediated by the satisfaction of the need for competence. This finding suggest that students' psychological needs should be considered and teachers should not only be aware of the importance of autonomy-supportive teaching, but also of how they can improve their teaching style (Vandenkerckhove et al., 2019).

Keywords: Autonomy support, teaching style, students' well-being, self-determination theory, basic psychological needs.

COGNITIVE LOAD AND QUESTION ASKING – THE CASE OF PROSPECTIVE MATHEMATICS TEACHERS COPING WITH HISTORICAL TEXTS

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Abstract
In this study, we examined aspects relating to the impact of integrating question-asking activities and providing answers to these questions while reading historical mathematical texts on prospective mathematics teachers' self-reported cognitive load. The research group included two classes of 20 students each (experimental and control groups). The experimental group was instructed to ask questions

while coping with the texts, whereas the control group received no special instructions. The experimental group participants were asked to think aloud while coping with the texts and audio record themselves. These recordings were transcribed into written protocols. In addition, both groups had to respond to a self-esteem index questionnaire in which they had to report the level of difficulty they experienced as an indicator of their cognitive load. The data was analyzed using quantitative and qualitative methods. Two main observations were obtained: the first is that question-asking reduces cognitive load, and the second is that question-asking supports the assimilation of new information up to a specific limit, depending on the gap between existing knowledge and new information.

Keywords: Cognitive load, Historic mathematical texts, Prospective mathematics teachers, question-asking.

CONTEXTS OF ACTIVITY PERCEIVED BY CHILEAN NOVICE HOMEROOM TEACHERS WHERE THEY POTENTIALLY LEARN THEIR PROFESSION

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Abstract
A key stage in the professional development of teachers is induction (Imbernón, 2020; Mauri et al., 2011; Vaillant & Marcelo, 2015). During this period, teachers learn the profession of teaching (Marcelo, 2009). This learning is generated in contexts of activity where aids, opportunities and resources for learning are offered. Thus, novice teachers learn their profession from their practice and from the learning opportunities provided by the contexts of activity in which they participate.
Each context of activity has particularities, which make some experiences and aids generate more enriching learning than others (Bloomer & Hodkinson, 2000). In this sense, the learning of the profession of novice teachers varies, especially in those whose work presents particularities, such as homeroom teachers. These professionals carry out tasks specific to their discipline and, at the same time, they are responsible for a classroom (Acuña y Guzmán, 2018). Consequently, the present communication aims to characterize the contexts of activity where novice homeroom teachers learn their profession.
The study is framed within the qualitative approach and uses as a methodological strategy the multiple case study (Stake, 2006). 15 novice teachers, who held the position of homeroom teacher in their first year of work, participated in the study. The number of participants allows for a variety of types of cases. Furthermore, this number of interviews is recommended to achieve theoretical saturation (Kvale, 2011). For its part, the semi-structured interview was used as a data collection technique and the script was validated by four experts. The data analysis technique was a thematic analysis (Willing, 2013) and an inductive-deductive coding protocol was also designed (Braun & Clarke, 2006). Moreover, a procedure of interrater reliability obtained a Cohen´s Kappa of .832.
The results show five contexts of activity perceived by Chilean novice homeroom teachers where they potentially learn their profession: 1) with the classroom; 2) with students ;3) with parents/guardians; 4) with colleagues; and 5) with specialist professionals. In each of these contexts, different tasks are performed, which are carried out through various interrelated actions among the participants. In turn, in each context of activity there are different types and levels of aids for learning the profession. Consequently, it is important to consider the particularities of the contexts of activity in which novice homeroom teachers intervene in order to provide them with aids that can be adjusted to their needs and, thus, support them in learning their profession.
This work was funded by the ANID PFCHA/Doctorado Becas Chile/2020-72210436.

Keywords: *Contexts of activity, novice teachers, homeroom teachers, professional learning, induction.*

AN OVERVIEW OF SPANISH STUDENTS' PSYCHOLOGICAL ADJUSTMENT DURING COVID PANDEMIC

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Abstract

Introduction. All world had suffered the consequences of a health crisis due to Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). More specifically, Madrid was one of the cities most affected by this health crisis and where the restrictions have been the harshest. All population suffered psychological consequences of social isolation. Previous research on the effects of social isolation in children shows important effects on aspects, such as feelings of sadness, anger, frustration, and apathy (Biordi and Nicholson, 2013; Brooks et al., 2020). Other indicative aspects of well-being and regulation during childhood have also been found to be altered, such as sleep patterns, potty training, or challenging behaviors (Simon and Walker, 2018). Changes have also been observed in the levels of anxiety (increased fear, worry, obsession, or rumination) and depression (depressed mood, lack of interest and motivation, or sadness; Teo et al., 2013; Urbina, 2020). The objective of the present study was to verify whether the psychological adjustment of Spanish preschoolers and primary students has changed since the health crisis started.

Method. A total of 291 families with children aged between 3.2 and 11.1 years (53,9% girls) participated in the study. These families have a medium socioeconomic background. The sample was divided into two age groups: 76 preschool families (59% girls) and 215 primary families (52% girls). The first measurement point was in February 2020 (just before health crisis started), the second point of measurement was during confinement in Madrid in March 2020 and the last measurement point was in February 2021 (one year after the health crisis started). Some scales of the questionnaire System of Evaluation of Children and Adolescents (SENA, Fernández-Pinto et al., 2015) were used. The selected scales were Attentional Problems, Depression, Challenging Behaviors, Emotional Regulation, Hyperactivity, and Willingness to study.

Results. Comparison between the pretest and posttest scores for the Early Childhood Education group indicated very little variation in the mean scores of the five dimensions between T1-T2. In the same way, no differences between T1-T3 and T2-T3 were found in preschoolers. The situation for primary students were slightly different but in general no differences were found between T1-T3 and some improvement were found between T2-T3.

Discussion. These results show that the children apparently were able to emerge unscathed from the extreme situation that they had to live through.

Keywords: Preschoolers, primary education, mental health, pandemic, psychological adjustment.

QUALIFYING MATHEMATICS TEACHERS TO DESIGN INTERDISCIPLINARY LEARNING ACTIVITIES OF MATHEMATICS AND MUSIC

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Abstract

Interdisciplinary learning of mathematics and arts is often acknowledged as supporting the development of students' problem-solving skills, encouraging student involvement in learning, and fostering students' creativity. However, for teachers to acknowledge the benefits of interdisciplinary learning of mathematics and arts, and express willingness to apply it in their classrooms, they must first experience such learning for themselves. To that end, they have to take part in dedicated training courses.

The study described in this paper followed the experience of twenty-seven elementary school mathematics teachers who participated in an annual professional development program that took place once every two weeks and was designed to qualify them to implement an interdisciplinary approach to teaching mathematics and arts. The course included four interdisciplinary modules: math-music, math-painting, math-photography, and math-dance. None of the teachers had prior knowledge of interdisciplinary teaching and learning. The mathematical topic chosen was fractions, as this topic entails numerous difficulties of various kinds both for the teachers and the students.

In what follows we focus on the teachers' experience with module no. 1, math-music. Before we explicitly exposed the teachers to the rationale of interdisciplinary learning of mathematics and music, they were asked to design learning activities that integrate fractions and music. No specific instructions were given, as we aimed at allowing the teachers to examine their initial perceptions and interpretations regarding interdisciplinarity, and then adapting the contents of the professional development program to the teachers' early perceptions and knowledge. After completing the design of the activities, the teachers presented them, explained their considerations, and provided mutual feedback. They also rated the extent to which interdisciplinarity was expressed in the activity, according to criteria they had developed themselves. The study indicated that teachers who knew how to play a certain musical instrument and read notes produced more mathematically significant content. Moreover, activities based on considerations relating only to common student mistakes in performing arithmetic operations in fractions did not lead to the design of activities characterized as having a high extent of interdisciplinarity. In case the considerations included general mathematical knowledge and knowledge of the mathematics curriculum, the extent of integration increased. Following these findings, the professional development program focused on deepening the teachers' mathematical knowledge and musical knowledge relevant to the subject of fractions. This approach has proven to be effective in terms of teachers' ability to produce meaningful interdisciplinary math-music activities, thus indicating the feasibility of teacher training for implementing an interdisciplinary approach.

Keywords: Interdisciplinarity, mathematics, music, interdisciplinary learning activities, teacher training.

RESEARCH ON THE FORMATION OF TRANSLATORS' COMPETENCE IN UNIVERSITIES FROM THE PERSPECTIVE OF KNOWLEDGE MANAGEMENT

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Abstract
This research intends to analyze the formation of translators' competence in universities from the perspective of knowledge management in the information age. This article follows the translation competence model formulated by PACTE (2003), which is consisted of five sub-competences: the bilingual sub-competence, extra-linguistic sub-competence, knowledge about translation sub-competence, instrumental sub-competence, strategic sub-competence. In order to develop the five translators' sub-competences, this research formulates the teaching model of knowledge management for translators', which includes the curriculum design, and the six rudimentary phases of personal knowledge management (search, identification and acquisition of information, and organization, application and optimization of the knowledge). We carry out an empirical research of the knowledge management teaching mode in translating class. From the students' practice results and surveys, we evaluate its' results in the formation of translators' competences.

Keywords: Knowledge management, translation teaching, translators' competence, competence formation.

PROFESSIONAL DEVELOPMENT NEEDS OF FOUNDATION PHASE TEACHERS IN IDENTIFYING LEARNERS WITH LEARNING BARRIERS AT PRIMARY SCHOOLS

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Abstract
South African Department of Education like other countries adopted an inclusive education and Training System Policy in 2001 to improve access to quality education for vulnerable learners and those who experience learning barriers. Training and Professional Development programmes were offered to teachers. Policies and guidelines were reformed to determine how support could be appropriately implemented in schools. The training programmes were perceived as the opportunity for teachers to improve their teaching skills, knowledge, and competences in identifying learners with learning barriers in an inclusive classroom. Although policies were reformed and teachers' received training, teachers still lack experience challenges in identifying learners with learning barriers in an inclusive classroom. Research shows that many professional development programs have failed to improve teaching practice (Birman, Desimone, Porter and Garet, 2000; Newmann, King, and Youngs, 2001; Armour and Yelling, 2004; Hofman and Dijkstra, 2010). The aim of the study is to explore how teacher training and Professional development can be improved in identifying learners with learning barriers in South African primary schools. Twenty-eight participants (N=28) were purposefully selected from four South African rural primary schools. A qualitative interpretive approach was adopted, and data were gathered through four focus group interviews with twenty Foundation Phase teachers (five from each school) and eight individual face-to face interviews with four support teachers and four subject advisors. Data were thematically analysed as suggested by (Babbie and Mouton, Leedy and Ormrod, 2015). Result demonstrated that training and professional development programmes were not effective due to the following aspects: the training focused mostly on reading not the identification of learners and teachers experience challenges in identifying learners with learning barriers in an inclusive classroom. Reports also indicate that teachers lack proper skills and knowledge to implement evidence-based inclusive teaching strategies and practices for facilitating the success and participation of all learners within the inclusive classroom. (Awad, 2016; Ghoneim 2014; Alkhateeb et. al., 2016). Due to ineffective of the training, the current study suggests rethinking of a new strategy for improving teachers training to meet the needs of the teachers and improve learners' performance.

Keywords: Professional development, teacher training, barriers to learning, foundation phase teachers, foundation phase learners.

PROJECTS AND TRENDS

EDUCATING FOR MODERN CLOUD TECHNOLOGIES IN A PLATFORM-AGNOSTIC FASHION

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Abstract
It is essential to provide computing students with hands-on exposure to modern techniques and technologies such as cloud computing. To this end we engaged with industry to co-design a curriculum for modern cloud computing to meet the industry needs for graduates. Vendors do provide access to cloud computing but their academic programs often leave much to be desired, with limited credits and features or a requirement to buy-in to their platform entirely. In the resource-constrained university sector simply buying vendor credits for students would be expensive but also wasteful as there is no capital investment. Having engaged with industrial partners to identify core theoretical skills and a subset of topics in which specific platform experience would be desirable we co-designed learning outcomes and assessments. To provide financially efficient platform-agnostic experience a private cloud was built using open-source tools which allowed a new large final year module. Having run this module for two full years and had excellent student feedback we reflect on the strengths and weaknesses of this approach and how industrial engagement cannot be a one-off, in a changing field it must be continuously performed to allow the curriculum to be refreshed and support emerging topics.

Keywords: Cloud computing, co-design, curriculum, curriculum refresh.

RESEARCH GIRLS – A JOINT PROJECT OF THE TECHNICAL UNIVERSITY OF DORTMUND AND THE OTTO- FRIEDRICH- UNIVERSITY OF BAMBERG, GERMANY

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Abstract
The abstract refers to the category Projects and Trends and fulfils the criteria in the fields: Pedagogic innovations, new learning and teaching models, inclusive and special education, educational projects.
The presentation shows ways that make it possible to sustainably provide gender-sensitive and gender-appropriate educational opportunities in early childhood in order to subsequently be able to prepare girls for changed educational paths. The starting point is a project submitted to the Federal Ministry of Education and Research (BMBF Germany), in which a structured programme is to be developed that allows educational professionals to be won over for gender-sensitive and gender-appropriate educational offers in child day care, and to strengthen and further develop their competences. Already in early childhood, important foundations are laid for independent participation in society in adulthood. The aim of the project is to address science as a field of work for girls in which they meet role models (female scientists). First of all, existing educational offers are identified and in a further step, the testing of possible gender-sensitive and gender-appropriate educational assignments for professional practice is scientifically accompanied and evaluated. The guiding research questions are:
- How do educational or research motivations arise in girls?
- How can girls be prepared for their future tasks in science?
- Which competences of girls should be perceived, communicated and positively evaluated in order to change gender-specific (role) expectations and individual creative spaces?
- How can educational professionals act in a gender-sensitive and gender-appropriate way and through which competences is early gender-sensitive and gender-appropriate education made possible?
- How can female scientists raise their profile outside the scientific community and thus become role models for girls?

The basis of the research design is an ethnographic observation of pre-school girls in different day-care centres in order to identify their ideas about later careers. Based on the results, female researchers from the corresponding domains are to be specifically acquired to serve as role models for the girls and to describe their life paths. At the same time, educational professionals will be trained as multipliers in order to implement the project permanently.

Keywords: Gender, early childhood, visibility of women in science, research girls, role models.

ACADEMIC AND SOCIAL CHALLENGES ENCOUNTERED BY IRANIAN STUDENTS IN FINLAND: A PHENOMENOGRAPHIC STUDY

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Abstract
This study aims to examine the experience of international students studying in Finland based on a phenomenographical approach. Due to the nationality of the researcher Iranian students were selected as the research sample and 25 tertiary-level students from various Finnish universities were interviewed through semi-structured interviews. The collected data were assessed and interpreted based on the theory of Anxiety-Uncertainty Management (AUM). The results showed that the Finnish academic system, such as teaching/ learning strategies, assessment methods, and university facilities, reduces participants' anxiety/uncertainty. The participants noted fundamental differences between characteristics and teaching style of Finnish and Iranian teachers in universities. However, this unexpected situation not only did not make them anxious, but also made them feel more comfortable than when they were studying in Iranian universities. In contrast, Finnish culture, and communication issue associated with language barriers and lack of job opportunities increase participants' anxiety/uncertainty. Many participants did not consider themselves members of Finnish society, and some felt they were strangers. The findings highlighted the important role of communication as an AUM thematic principle and propose a set of axioms to AUM theory that focuses more on the different dimensions of communication in an intercultural context. Given the importance of context in the study of communication issues, further studies are recommended to understand the intercultural issues of students of other nationalities in different contexts.

Keywords: International students, intercultural challenges, Finnish culture, anxiety-uncertainty management theory.

KNOWLEDGE NUGGETS INSTRUCTIONAL DESIGN V2.0 AND TESTING STRATEGY

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Abstract
Currently, the education sector is undergoing profound changes and, in parallel, making digital teaching formats essential. One of these upcoming formats is the so-called "Knowledge Nugget". Knowledge Nuggets are digital learning materials that are designed for self-directed learning. They are organized within small, defined topics and vary depending on their scopes and sizes. Differentiation goes along with the way learning material is prepared and conveyed but does not provide information about the amount of content or the shared knowledge's difficulty. Based on a paper at END2021, the next step sheds light on general design aspects to reduce the extrinsic cognitive load during learning. Hence, it is necessary to which kind of Knowledge Nuggets has been prepared and how the different nuggets are structured. How the information is prepared must be taken into account not to harm the students in their learning process. This paper aims to further develop the previous form of instructional design, adding general design factors and providing a well-planned testing strategy to verify the explained model.

Keywords: Knowledge nuggets, testing design, self directed learning, cognitive load, online teaching.

TEACHING ENGLISH LANGUAGE AND CULTURE THROUGH PBL AT THE TERTIARY LEVEL

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Abstract
Research has shown that language and culture are closely related (e.g., Brown, 2007; Kramsch, 1998; Kuang, 2007; Savignon & Sysoyev, 2005) and are best acquired together (Schulz, 2007). This paper aims to demonstrate how project-based learning (PBL), one of the main innovative approaches in the current educational landscape, can be useful for teaching culture in the English language classroom at the tertiary educational level. PBL is a teaching approach in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge (Kingston, 2018). According to different studies in the field (Kavlu, 2017), this approach can be more engaging and motivating for English language learners than traditional methods. First, the language is being used for an authentic purpose, which gives the language relevance. Further, learners develop content knowledge as well as critical thinking, creative thinking and communication skills. This study will focus on the implementation of PBL in the English language classroom in different degree programs: Primary Education, Infant Education, Hispanic Philology and Humanities. Students created an authentic final product that explored cultural aspects of English-speaking countries in combination with different subjects such as geography, history, literature and economy. The findings are based on a questionnaire that measures tertiary students' motivation levels and expectations in relation to this pedagogical framework.

Keywords: Project-based learning, English culture, English language, foreign language, tertiary education.

ELABORATION OF AN INTERACTIVE ELECTRONIC BOOK OF MEASURES OF CENTRAL TENDENCY

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Abstract
These are the advantages of technology: multimedia presentation, interaction, personalization, etc. Within this context an interactive digital book of the characteristics of the information was realized. In a data set, the following characteristics are usually of paramount importance: 1. the center, 2. the variation, 3. the distribution, 4. the atypical values and 5. The characteristics of the data that change over time. It is important to understand the standard deviation values using tools such as the general rule of rank.
Because technology allows us to get many of these statistics automatically, it is not so important to memorize formulas or perform complex arithmetic calculations by hand on the other hand, so that the students can concentrate on understanding and interpreting the values that are obtained from them.
The interactive digital book of measures of central tendency contemplates that each chapter indicates prerequisites, learning objectives, written development of the subject, videos with explanation, interactive exercises, widget (html 5. Interactive galleries, interactive images, etc.) review questions.
The interactive digital book will provide students with full-screen experience with galleries, videos, interactive diagrams, 3D objects, and math expressions and more; these books give life to the content in ways that a printed page cannot do. Students will no longer be limited to static images that illustrate traditional texts, but can now immerse themselves in an image with interactive subtitles, rotate a 3D object or make an answer come to life in a chapter review. You can flip through a book with a single finger on the screen. They can also highlight text, take notes, look up content and find definitions in a glossary very easily. In addition, they can take them wherever they go, which will allow students not only to learn between the walls of the classroom, but also in the virtual space that make up these books.

Keywords: Interactive eBook, measure of central tendency, html 5.

FROM FACE TO FACE TO REMOTE LEARNING: A PRIMARY EDUCATION TEACHING SCENARIO IN DIGITAL CLASS

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Abstract

Environmental protection and its utilization, taking account of sustainable development, becomes a necessity in today's rapidly changing era. In the schools' surrounding environment there are resources which could be integrated in the students' everyday life, within the frameworks of sustainability and with respect to their existence and their characteristics. Students take up an active role by implementing STEM methodology in remote learning, with a combination of synchronous and asynchronous learning.

The aim of the paper is to present the design of a teaching scenario about mathematics, in the field of geometry, and specifically the teaching of angles, via STEM methodology and utilization of e-me digital classroom. Students are asked to solve the problem of designing paths in the school garden and also to recognize the angles in their home and at the work of arts. If and how a math teaching scenario using the digital environment of e-me and Web 2.0 applications and applying modern and asynchronous distance learning with STEM methodology, could lead to understanding and knowledge acquisition. The estimated duration of the teaching scenario was three teaching hours in synchronous and asynchronous learning. It was designed and implemented in 5th grade students of a primary school in Athens. Students worked individually or in groups, depending on the task assigned to them in the digital learning environment, cultivating their critical thinking and problem solving.

The involvement of students in synchronous and asynchronous learning and the results of their activity, showed that the students cultivated their critical thinking and problem-solving skills. They took pleasure through creativity. Their critical thinking was encouraged via STEM methodology, where the e-me environment favored students' navigation and the co-construction of knowledge.

Keywords: E-Me, STEM, remote learning, mathematics, scenario.

SAROPAS: A COMPETENCY-BASED PERFORMANCE TASK DESIGN MODEL

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Abstract

The Organization for Economic Cooperation and Development (OECD) published the learning framework 2030 which depicts students' competency for future demands as three intertwined currents of knowledge, skills, and attitudes and values. Student's knowledge can be observed when it is mobilized as skills in solving problems, and the use of knowledge and skills is mediated by attitudes and values. In other words, a student's competency can better be observed and assessed when they respond to real situations and exercise their knowledge and skills to resolve problems.

In educational practices, performance tasks are designed to mimic complex demands and challenges in real life that require students to apply their knowledge, skills, and attitudes and values in actions. For K-12 educators, the call for clear guidance of designing competency-based performance tasks is urgent. Wiggins & McTighe (2005) in their seminal work Understanding by Design suggested framing performance tasks using elements of authentic assessments — GRASPS (Goal, Role, Audience, Situation, Performance, Standards). GRASPS provides well-organized facets in designing assessments. However, considering the other side of the coin, curriculum design, GRASPS may be short for laying out the details of the design process. We refined GRASPS into SAROPAS (Setting/Scenario, Aim, Role, Observer, Products, Actions, Standards), a model with finer granularity in designing the curriculum and assessment which made the design process applicable and easier.

A survey was conducted to verify the strengths of SAROPAS in designing performance tasks. One hundred and seventy-one in-service teachers participated in the survey. Three tasks were given to the participants asking for their review on what skills can possibly be assessed in resolving the tasks. The result showed that the task designed by the SAROPAS model obtained the highest ratings and agreement in mobilizing six types of skills which could really demonstrate students' competency. Implications and suggestions about designing competency-based performance tasks were provided in this study.

Keywords: Competency-based performance tasks, curriculum design, assessment design.

EDUCATION-TO-GO IN THE FUTURE IN DEVELOPING COUNTRIES?

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Abstract
Many typically good paying jobs have not yet recovered to the pre-pandemic level in many countries. On the other hand, due to the use of many digital technologies to order, store and deliver goods during the pandemic, many professionals were and are still needed for creating computer applications, data management and in analytics (aside from blue collar workers needed in call centers, warehouses, and delivery services). However, not many people are qualified because there were not many careers created in those fields mainly in developing countries. Despite that, the current demand for this type of talent is high. Therefore, many higher education institutions and small colleges may take the opportunity and offer the essentials of basic higher education and training needed for some of those jobs. Some younger individuals might not want to go back and be confined in a classical classroom after having tasted the "freedom of virtual education" which could even be accessed through a cell phone anywhere and at any time. This could be the beginning of Education-To-Go schools all around the world but mainly in underdeveloped countries, an education which would be affordable, quick, and very specific and aiming to certify some professional skills. This education would be tailored to fit the needs for the vacancies that are urged for the market to fill. Mainly the schools which would prepare those young adults could hire fewer teachers who would prepare or assemble the course materials and make them available on the school websites. This practice on the other hand will contribute to the "uberization of education" and drastically change the number of teacher-to-student ratios. In this paper the possibility of Education-To-Go in Mexico is analyzed considering the economic sectors which could possibly grow in the coming years matching them with the competencies needed. The analysis is carried out using quality control tools such as Ishikawa and Pareto Diagrams. There are scenarios in which it is a possibility, and the country could even export some of the trained people, mainly to the United States. Specialization through the teaching of specific competencies could be possible in some countries like Mexico in the post-pandemic era.

Keywords: Competencies, engineering, tools, uberization.

UTILISING ICT TO ADDRESS LANGUAGE CHALLENGES IN LIFE SCIENCES CLASSROOMS

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Abstract
Language is not everything in the teaching and learning process, but without language education becomes worthless. A normal classroom in South Africa consists of learners of different cultures thus having different home languages. Previous studies showed that teaching has become a complex task for Life Sciences teachers who are responsible for meaningfully teaching linguistically diverse learners in public schools using English, a second or third language for learners. With the advent of the Fourth industrial

revolution (4IR) and the technology use in science education, the current study sought to determine how teachers utilise ICT tools to address language challenges in Life Sciences classrooms. The use of ICT provides multiple representations which are pertinent in the teaching and learning of Life Sciences - a subject with many languages (e.g. Greek, Latin and English). In an explanatory mixed method research design, 42 Life Sciences teachers were purposefully selected from public schools in Johannesburg to take part in the study. Data was collected first through administration of questionnaires to the 42 teachers to establish their beliefs about the role of technology in mitigating language challenges and also their ICT competencies. Secondly, three teachers who had shown to be more digitally literate based on the analysis of questionnaire data, were selected for lesson observations. Nine lesson observations were made in total to investigate how teachers use ICT tools to mitigate language challenges. The observed teachers were interviewed once to provide them with an opportunity to explain and elaborate on some of the episodes observed in their lessons. Data analysis involved computation of descriptive statistics from quantitative data and thematic analysis of qualitative data. Findings of the study indicated that 97.62% of the teachers believed that technology can be useful in solving language problems in the Life Sciences classrooms and 95.24% indicated that they were confident in using technology when teaching Life Sciences. Teachers used PowerPoint presentations, YouTube videos and tutorials amongst others when teaching. However, in the interviews two of the teachers failed to explain how these tools helped in mitigating the language challenges learners encounter during the teaching and learning process. Another important aspect that came out is that the lack of access to appropriate technological devices thwarted teachers' efforts to use ICT tools. These findings have implications on resource distribution in schools to ensure quality teaching and learning occurs within the disadvantaged communities where the language of teaching and learning is problematic and also development of teachers' technological pedagogical content knowledge.

Keywords: Life sciences, language challenges, ICT tools, technological pedagogical content knowledge.

"MATERIAL DEMO LAB" PROCESS - TRAINING PROCESS FOR BUSINESS MODEL & DESIGN METHODS FOR MATERIAL SCIENTISTS

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Abstract
Up to 70% of all new products are based on new materials and there is considerable scientific and economic potential in combining different material and technology domains in particular. Former research projects have shown that material scientists face several challenges in the later stages of the innovation process, especially in market placement meeting the needs of business customers and other stakeholders. Problems are e.g. too complicated communication of their work, missing understandable business cases, and uninspiring demonstrators. These developing issues could already be prevented in an early TRL level by using and combining product design and business modeling methods.
The paper presents the design of the innovation process of competence acquisition of business model development and design development methods for material scientists. The innovation and training process is designed to overcome the "Valley of Death", i.e., the unsuccessful transfer of research results to the
to market maturity. The goal of the process for the material scientists is to a) reflect and structure own competencies b) to make unique selling propositions comprehensible and c) to generate and strengthen impact. In addition, the observed limitations are described, which were observed during the implementation of the process in two test groups composed by scientists from three different institutes and research areas in materials science to further refine the field. The findings are based on a) literature reviews and b) observations during the design, implementation and evaluation of the process.

Part of the core findings is the increased acceptance of the methods applied in the innovation process, if they primarily address technology development. A more challenging acceptance in the field of research communication is the development of commercial business models. During the development and testing of the innovation process, the stages of the Delft Design Guide as one popular handbook in the field. The development phases were used as a guidance and orientation.

Keywords: Business model development, science communication, prototyping, material science innovation process.

FOSTERING THE DEVELOPMENT OF 21ST CENTURY COMPETENCIES THROUGH TECHNOLOGY IN YOUNG CHILDREN: PERCEPTIONS OF EARLY CHILDHOOD EDUCATORS

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Abstract
This study explored early childhood educators' perceptions of technology in facilitating the development of 21st-century competencies in young children in South Africa. This study employed a qualitative, exploratory case study design which was informed by two established frameworks: the technological pedagogical content knowledge (TPACK) and the framework for 21st-century learning. Data were obtained from four preschool educators in different Early Childhood Development centers in the inner-city of South Africa using classroom observation, field notes, and semi-structured interviews. The collected data were interpreted and categorised into codes using content analysis. Findings reveal that the technology tools used by sampled practitioners include video games, learning applications, and robotics construction kits. It was found that educators integrated these technological tools in the practical lessons using play (game)-based activities. The use of these technology tools assisted educators in fostering 21st-century competencies such as creativity, critical thinking, collaboration, communication, and technology literacy in young children. However, educators were concerned that the effective use of these technologies with efficient instructional strategies to promote 21st-century learning is constrained by limited access to reliable content, updated soft wares, internet connectivity, level of administrator support, and lack of training. It is recommended in this study that the relevant stakeholders in the early childhood sector encourage educators to attend training and professional development that will enhance their knowledge, practice, and confidence in using technology to transform learning experiences and foster the development of 21st-century skills in young children.

Keywords: 21st century competencies, early childhood development, educational technologies, technological knowledge.

A TENTATIVE PROPOSAL FOR INCLUSIVITY EDUCATION TRAINING FOR JAPANESE SCHOOL TEACHERS BASED ON THE NEEDS OF MIGRANTS AND RETURNEES

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Abstract
Although Japan has not traditionally been considered a multicultural nation or possesses anything resembling an open immigration policy, it is rapidly becoming more and more diverse. Events like modifications to the nation's immigration regulations in April 2019 and the recent proposed scrapping of the 5-year term limits on accepted "temporary" foreign workers (Category 1 Specified Skilled Workers) have ostensibly led to a quiet opening to unskilled foreign workers for the first time in the nation's modern history. While Japan's hand may have been reluctantly forced by serious labour force shortages in many sectors of the economy, it is undoubtedly the beginning of the creation of an even more

'multicultural Japan'; providing further impetus to the pressing challenge of creating a society where diverse peoples can live together in harmony. Yet, despite these changes and the obvious implications they have for the future, very little consideration has been given to allowing for - and accommodating - greater diversity into the nation's schools. There is a great risk that without preparation now, the already emerging signs of distress in the education sector (language problems, truancy, drop-out rates, bullying, etc.) will only escalate. In other words, in order for Japan to prepare to accept even a modest increase in the number of newcomers, teachers and education officials need to undertake greater training to enable them to understand and assist in the successful integration of future migrant children. Based on interviews, literature and a review of the recent educational situation in the light of these changes, this paper aims to ascertain whether greater inclusivity training is required, and if so, what it should entail. To allow for greater support of non-Japanese students into Japan's education system, it concludes with a tentative proposal for what future educational training courses should consider, how they could be incorporated into teacher training curricula and the overall potential benefits for society in general.

Keywords: Japan, inclusive education, immigration, multicultural society, diversity.

USE OF RESEARCH EVIDENCE TO IMPROVE TEACHING PRACTICES. RESULTS FROM CATALONIA (SPAIN)

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Abstract
The European, national, and local educational policy is experiencing an increasing interest in using research evidence to inform educational practices. The use of research evidence is associated with multiple benefits at the political, organizational, and personal levels. Despite the known benefits, it seems that teachers make unconscious or irregular use of research evidence. This paper examines the beliefs and perspectives of primary and secondary teachers of Catalonia (Spain) about the use of research evidence to inform their practice. To analyze the teachers' beliefs, we use a survey designed ad-hoc for this purpose. 652 primary and secondary teachers from Catalonia (Spain) comprised the final sample, mainly working in public schools (91%). Discussions with colleagues, information obtained in professional development training, and websites/social media, are the main sources of knowledge used by teachers to support and inform their practice, making little use of academic journals and/ or professional publications. Research evidence is mostly used to make personal decisions, as teachers consider that research evidence can help them expand, deepen, and clarify their understanding of teaching and pedagogy. Although, they identify mental and time costs that can be barriers to the use of research evidence. Despite Catalan teachers having a positive view of research evidence, they make little use in their daily practice, and, in consequence, the Evidence-Informed Practice perspective (EIP) is not assumed at the school level, being necessary to promote the vision for evidence-use in the school context.

Keywords: Evidence-Informed practice, research use, teaching practice, school teacher.

EDUCATIONAL OUTPUT OF INDIGENOUS EDUCATION IN TAIWAN THROUGH EPISTEMIC NETWORK ANALYSIS

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Abstract
Indigenous peoples in Taiwan are facing the challenges in losses of indigenous knowledge. P'uma Elementary School is the first indigenous alternative education school in Taiwan, and the students there are from Tayal communities.
This research is to investigate the indigenous cultural competence of indigenous education in P'uma. It is a quasi-experimental method, and 61 students from the sixth grade of Tayal indigenous students. The

students were divided into the experimental group of 13 students from P'uma, and the control group of 48 Tayal students who are not from P'uma.

The data analysis method is epistemic network analysis (ENA). ENA involves a combination of social network analysis, concepts from frame analysis, and data visualization techniques, and it used to variables of Taiwanese indigenous education (ethnic language and literature, skills of traditional lives, social organization, art and dance, traditional beliefs and rituals, ethnic relations and tribal history, tribal ethics and taboos, and environmental and ecological conservation)– and the relationships between eight variables.

Findings that P'uma students were more likely to connect the practical knowledge of "art and dance" with "traditional beliefs and rituals", but urban students were more likely to connect "social organization" with "traditional beliefs and rituals"; As for the tribal students, they are less likely to form a complete network in the cognitive learning of indigenous culture.

This is the first research to examine the output of indigenous education through ENA, and the research result is help to improve indigenous education in Taiwan in the future.

Keywords: *Epistemic network analysis, indigenous education, indigenous alternative education school.*

TOWARDS AN ECLECTIC APPROACH IN AUTISM SPECTRUM DISORDER (ASD)-SMARTS (SEQUENTIAL MULTIPLE ASSIGNMENT RANDOMIZED TRIALS-SMARTS)

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Abstract
The need for evidence-based therapy is a reality in contemporary therapeutic approaches. The most studied approach in autism spectrum disorder (ASD) is the ABA therapy (Applied Behavioral Analysis), among other 27 validated programs Hume & al. (2021) and Steinbrenner & al. (2020). Even if ABA is well known and strongly scientifically studied, in almost 30% of the cases it does not lead to developing the desired verbal communication abilities ((National Institute on Deafness and Other Communication Disorders, 2010; Kasari, Sturm, Shih, 2018). In this context, speech and language therapy can be an alternative to this approach, its use being combined with the usage of different other psychological and psycho-pedagogical techniques and programs for enhancing children and families with the target abilities. This mixture of therapies, known as eclectic approach is often compared with ABA approach and criticized due to its lack of scientific proof. In order to ensure the evidence based approach we propose the implementation of SMARTs (Sequential Multiple Assignment Randomized Trials-SMARTs). The SMARTs approach offers the possibility both to collect measurable data based on the established goals and to tailor possible intervention programs adjusting the approach to participants' needs. In our research the SMARTs structure include: a sequence of decisions (it applies if participants do not respond positively to the intervention and it is used at each three months' reevaluation stage), a set of intervention decisions (in this research SLT is combined with kineto-therapy, oral-motor myofunctional therapy, psych-pedagogical programs and programs for sensory integration), elements/factors that indicate change in the established approach (it refers to factors that prove that the intervention program needs to be changed, in our research these are: regression and a plateau in speech and language development acquisition longer than one month) and a sequence of decision rules able to link the other sequences (these decision rules are based on the evaluation and reevaluation results and on reaching or not the established goals in speech and language development area). Participants in the research are 9 children with severe ASD (N=9), with ages between 6-9 years' old. The starting point of our SMARTs approach implementation was a comprehensive general assessment of speech and language development based on ISD (Integrated Scale of Development), MLU (Mean Length of Utterance) and SIR (Scale for Intelligibility Rate). The intervention period was January 2021-december 2021.

Results demonstrated relevant gains in speech and language development of 6-9 months (based on ISD) and of 3 points based on SIR (from 2 level-just of words intelligible, till 5 level-all words intelligible). Very poor results were obtained at the MLU level, due to the fact that grammar approach is difficult to implement. In conclusion we can underline the fact that SMARTs can be a reliable way in individualizing and in collecting scientific proof about speech and language development in ASD context, based on eclectic intervention programs. Further research will be developed in order to tailor the morphological and syntactical aspect in speech and language development.

Keywords: Eclectic approach, speech and language therapy (SLT), autism spectrum disorder, SMARTs (sequential multiple assignment randomized trials-SMARTs), evidence based therapy.

TECHNOLOGY IN TEACHING AND LEARNING IN ROMANIA

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Abstract
The pandemic caused by the novel Coronavirus has forcibly introduced digital technologies in the teaching and learning process all over the world. Even if teacher and students preparation for this way of teaching has not sufficient, all participants have succeeded in a rather short amount of time to adapt to online teaching and use the myriad of applications, websites and online teaching and learning platforms. The present article evidentiates the impact of digital technologies in education, therefore the study area that incorporates it is education technology.
The idea from which this study originated is the way and rapidness that teachers managed to integrate digital technologies in teaching and to adapt their methods and strategies so that they combine all the advantages offered by online teaching with the contents to be taught.
The main objective of the article has been the identification of the main applications, websites and platforms that the teachers consider useful, the level of usage during exclusive online teaching or hybrid teaching and the advantages and disadvantages of using digital resources on short-term and long-term. The research method is based on the teachers responses to the online questionnaire, on a qualitative research.
The present study is structured in four main sections. The first section presents the context of introducing technologies in the teaching-learning process caused by the Covid-19 pandemic. The second section consists of a list of applications, platforms and educational websites used by Romanian teachers during exclusive online teaching and learning and developing opportunities offered to students and teachers. The third section presents the opinions of teaching staff in a private school from Romania regarding the positive and negative impact of digital technologies over the teaching and learning process. The last section comprises conclusions & recommendations for the main stakeholders.
The main results obtained following the research show that the teachers have used and continue to use a series of apps, websites and educational platforms in teaching, even if the teaching is hybrid or with physical presence. Using digital resources has advantages such as class interaction, high interest in children, but also disadvantages (such as limited resources, internet connectivity, increased time in preparing lessons).

Keywords: Online school, Covid-19 pandemic, educational applications, education digitalization, Romania.

THE SENSORY PROCESSING AND INTEGRATION IN ASD: IMPACT ON EDUCATIONAL OUTCOMES

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Abstract
Autism spectrum disorders (ASDs) depict a large class of conditions that manifest in a variety of displays and particularities. The number and type of symptoms can differ drastically from one person to another and array from mild to severe. Symptoms fall into a range of categories; dysfunctions in perceptual and sensory processing are present with impact in communication, in neurological functioning outcomes and in various functional behavior limitations (Pfeiffer et al., 2005). In school settings and in everyday life the sensory processing and integration of the stimuli may impact the acquisition of new information and sometime, in particular situation the educational process itself.
Sensory information and atypical behavioral responses are common to people with this diagnostic, with over 96% of children with ASD having hyper or hyposensitivity in several areas. Particular processing of sensory stimuli can cause aggressive and self-harming behavior, especially for those who are non-verbal and cannot communicate their difficulties in an adequate and functional manner. Among the most affected senses are the proximal senses, such as taste, smell, and touch, but new studies report that disruption of auditory and visual processing pathways is becoming more common (Marco, E J et al, 2011). Due to these particular hypersensitivities daily activities are disturbed. This is a factor that limits the participation of these individuals in certain events and activities, and in school itself. Most preschoolers had difficulty with sensory processing, which was associated with behavioral changes such as irritability, lethargy, or hyperactivity.
In this research we evaluated the sensory processing difficulties layered by age and interaction plans: tactile, vestibular, proprioception, auditory, olfative, taste and visual. The participants (N= 43) report data for themself (N=9), for babies(N=5), for kindergarten age (N=15) and for school age (N=14). Preliminary data indicate for tactile sensory processing the M= 1.9, for auditory sensory processing the M= 2.49, for vestibular sensory processing the M= 2.1, for proprioception sensory processing the M= 1.72, for visual sensory processing the M= 2.07, for taste sensory processing the M= 1.74, for olfative sensory processing the M= 1.97. The most reported disturbance on sensory processing was on the auditory, vestibular and visual part. The affected sensory processing area interferes with the educational process that is based mainly on auditory, visual and vestibular. These preliminary results are in concordance with others reports from literature and could explain the hypersensitivity for auditory and visual stimulus and the odd behaviors displayed by ASD persons, like tiptoes walking. Further research and analysis will be developed in order to tailor these aspects of sensory processing in ADS, with impact on education and everyday living.

Keywords: Sensory processing, autism spectrum disorder, sensory integration, educational challenges, hyper and hyposensitivity.

THE IMPACTS OF MENTORSHIP ON DUAL ENROLLMENT HIGH SCHOOL STUDENTS

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Abstract
Dual enrollment programs enable high school students to take community college courses and earn high school and college credits, saving two years of college expenses. However, many dual enrollment students lack a robust support system for success in college-level coursework and environment. The authors created an interdisciplinary mentorship program that pairs a volunteer dual enrollment senior

student with a dual enrollment junior student in a longitudinal mentoring relationship to address this. This study examined mentors' and mentees' long-term evaluation of the program and its impacts. Thirty-nine mentors and mentees were randomly matched with a waitlist control group, and mentoring relationships lasted for a full academic quarter. Participants later completed an anonymous online feedback survey (based on the Likert Scale), with a response rate of 67% (n = 26). Mentees reported an average 1.37 Likert scale increase in their comfort in dual enrollment; mentors reported an average 2.43 Likert scale increase in confidence in teaching others. Mentees' comfort in the college environment increased with the frequency of meetings ($p<0.05$); the number of meetings did not correlate to their grade point average (GPA) ($p>0.05$). Change in dual enrollment comfort was more significant among matched students than waitlisted ($p<0.05$). Notably, many dual enrollment programs have a ~10% student academic probation rate (GPA<2.0) each quarter; none of the mentees experienced academic probation, but this was not significant. Among mentees, 79% reported interest in being a mentor the following year. These results indicate that peer mentorship is crucial for dual enrollment student success and presents a self-sustaining model for the future.

Keywords: College, dual enrollment, mentoring, learning.

EXTENDING NATURAL SCIENCES LEARNING IN PRE-SERVICE TEACHER EDUCATION USING AUGMENTED REALITY-ENHANCED INQUIRY

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Abstract
As the world transitions to hybrid ways of working it is increasingly important that education is not left behind. The COVID-19 pandemic further exacerbated the need for teaching and learning to transition from face-to-face contact mode to remote, blended or hybrid modes of teaching and learning. In this study, a group of 32 pre-service Natural Sciences (NS) teachers engaged with *Jigspace*; a composite augmented reality (AR) application following an inquiry-based approach to learn identified NS concepts. The main aim of the research was to establish the usability of AR in PSTs' learning and the affordances of AR technology as part of a teaching and learning design that could improve achievement in content tests. In a quasi-experimental design, data was collected through pre- and post-intervention content tests followed by post- intervention focus group interviews with all participants. A paired sample t-test was employed to establish a significantly positive shift in content test achievement before and after AR-enhanced learning interventions. Findings from qualitative content analysis revealed that students were able to interact and learn more with AR learning models due to their semi-immersive attributes and the associated text mediation added to the application. Participants noted that just reading a textbook or written text was not usually enough for the formation of mental representations. Gesticular actions like *rotation, zoom in and out, animation, spinning, pulling and dragging* underpinned the main interactions with learning artefacts embedded in the AR applications. Some important 21st century skills, including collaboration, critical thinking and communication were enhanced as students spent time exploring concepts and addressing difficulties in chat groups and social media platforms. The research also contributes primarily to the role of mobile learning devices and AR in enhancing remote and blended learning of science concepts. Some implications of these findings for pre-service teacher education (PSTE) include: an urgency to transform NS teacher training to include technology-enhanced learning of science concepts: reforms in school policy to integrate mobile learning technologies like AR for the teaching and learning of science which will aid teachers to innovate when teaching science. Some recommendations for future research and practice are also covered herein.

Keywords: Augmented reality, Jigspace, mobile learning, inquiry-based learning, pre-service teachers.

THE IMPACT OF THE COVID PANDEMIC ON ONLINE EDUCATION FOR DIVERSE ENGLISH LANGUAGE LEARNERS

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Abstract
The global pandemic is significantly impacting students throughout the world. We are aware that education is vital for workforce development and economic prosperity (West, 2013). The Covid-19 numbers continue to skyrocket and it is estimated that over 300 million students worldwide are experiencing an education disrupted by this pandemic. Students and educators who are forced to rely on online teaching have even more challenges. Online teaching experts offer advice on designing support for students and point out resources to assist in the transition to remote teaching (McMurtrie, 2020). Parents and community members weigh in heavily on the impact and quality of transitioning coursework to an online platform. Children in earlier grades are often confused by the technology itself and have to rely on parents who may be working, or teachers on the other side of the computer monitor, to guide them. We must embrace new insights and take advantage of educational approaches offered in the online setting so that students can explore and expand their acquisition of knowledge as we move courses online. According to Darby, the design and sequence of content and learning activities in both realms should be methodical, systematic and purposeful (Darby, 2020). This presentation and manuscript will discuss the ways that an innovative curriculum takes on numerous dimensions with the ability to revolutionize the learning experience, captivate and empower learners and challenge them to excel. Creative examples are provided focusing on: 1) Connecting with all students 2) Addressing the challenges of remote learning 3) Information Communication Technology (ICT) and web-based resources 4) Ways to keep students motivated and challenged to high ideals. Covid-19 has created a digital divide that has left millions at a disadvantage and the internet is assuming a critical role in communicating with our students (Porumbescu, G. 2020). Particular concern has been expressed for English Language Learners (ELLs) who are faced with the challenges of learning English and simultaneously shifting to online instruction. Not only do these students, but also their parents, need clear and specific guidelines regarding the information and opportunities to strengthen their English skills and fully participate in the educational experience. Often translation of written communication in a variety of languages is needed to guide students in accessing technology and participate in remote learning.

Keywords: Online education, pandemic, English language learners.

DESIGNING DIALOGUE BASED INTELLIGENT TEAM TUTORING FOR SUPPORTING MATHEMATICAL AUGMENTATION ACTIVITY

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Abstract
A dialogue based intelligent team tutoring system is proposed in this paper to evaluate the augmentation ability of eighth-grade students on the Pythagorean Theorem. In concert with the script of the argumentation instruction, the tutor agent in the system guide the students through proposing tasks, motivating learning initiative of students and providing individualized feedbacks. Depending on the responses from the students, the system provides the correspondingly adaptive learning paths. Besides, tutor agent hinge on error patterns of the students' responses to determine the appropriate instructions and assistances from the peer agent, which is able to attain the effectiveness of the dialogical and cooperative teaching.
The subjects in this study are 200 eighth-grade students from schools in northern and central Taiwan. The students undertaking the argumentation teaching are divided into treatment groups with 118 students and control groups with 82 students. The treatment groups adopt the dialogue based intelligent team tutoring system; the control groups receive the teacher-centered instruction. Between the two groups, the lecturing materials are totally the same and utilized to proceed argumentation teaching of the Pythagorean Theorem for three-period classes.

The results show that the dialogue based intelligent team tutoring system and teacher-centered instruction group both possess outstanding effectiveness on the argumentation instruction of the Pythagorean Theorem. In comparison to the teacher-centered instruction group, the dialogue based intelligent team tutoring system group has superior effectiveness on the learning gains of the students on mathematical argumentation consisting of conjecture, validation, generalization and proof. The middle and low achievers with incorporating mathematical augmentation in intelligent dialogue-based team tutoring system is better than that of the control group. Dialogue based intelligent team tutoring is beneficial for improving students' mathematics argumentation ability.

Keywords: Argumentation, conjecturing, mathematics dialogue, intelligent team tutoring, Pythagorean Theorem.

DIGITAL EDUCATION IN HIGHER EDUCATION INSTITUTIONS IN PORTUGAL AND BRAZIL – CHALLENGES AND TRANSFORMATIONS

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Abstract
This Communication aims to promote a reflection on Digital Education in Higher Educations Institutions in Portugal and Brazil, and the challenges and transformations perceived, when it is implemented, on the occasion of remote teaching during the pandemic of the new corona virus.
From this study, a greater exchange of experiences in terms of methodological proposals in relation to Digital Education could be a great positive differential. And yet, different ways of facing the different challenges to which the researched institutions were and are being submitted, tends to promote valuable cooperation between the researched institutions, promoting the necessary transformations, in the face of the adversities encountered.
In Higher Education, Digital Education is seen as a trend in education, as well as in citizenship. What reinforces the 2030 agenda of the UN (United Nations Organization), in its SDGs – Sustainable Development Goals, for a more inclusive world.
Digital Education, for some higher education institutions, was previously adopted as a beginner, today it is seen as a trend that allows broad access to higher education, expanding the notion of citizenship.
The challenges are numerous and need to be overcome, mainly because of its originality. And, as we are not in a controlled situation, neither in relation to the virus, technological conditions, nor behavioral, psychological conditions, efforts must be scaled in order to make cooperation between institutions the true legacy of this context.
In this way, it is believed that Digital Education will be increasingly fulfilling its transforming role of promoting a more inclusive society.

Keywords: Digital education, higher education, challenges, transformations.

COMPUTER SUPPORTED CONJECTURE PROCEDURE IN LEARNING MATHEMATICS - TAKING TRIANGLE CONGRUENCE AND SIMILARITY AS AN EXAMPLE

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Abstract
Through intelligent dialogue-based team tutoring system, students can use cooperate and talk with two agent roles for learning. Because the system can simulate agents, include agent tutor and agent student.
This research is based on intelligent dialogue-based team tutoring system. The concept of conjecture procedure and group cooperation is added in the development process. And the teaching content is mainly about the congruence of triangles and the similarities of triangles. The research method is adopted the

quasi-experimental research method, and divided into experimental group and control group randomly. The subjects in this study are 68 ninth-grade students from a junior high school in New Taipei City. The experimental group adopts intelligent dialogue-based team tutoring system that incorporates conjecture procedure and group cooperation. The system will in accordance with students into high-ability and low-medium ability based on their pre-test, and group them with simulating agents with appropriate abilities. The control group adopted the teacher centered instruction. Before the experiment, conducted a pre-test, and then started teaching activities. After teaching activities, post-tests and the learning attitude questionnaire are filled in. After the post-test was completed, the experimental group filled out the satisfaction questionnaire of the intelligent dialogue-based team tutoring system. Finally, the results of the pre-test and post-test scores, the mathematics learning attitude questionnaire and the intelligent dialogue-based team tutoring system satisfaction questionnaire. Various statistical processing and result analysis were carried out to understand the impact of conjecture procedure and group cooperation in the intelligent dialogue-based team tutoring system on students' learning effectiveness and attitudes.

The research results show that intelligent dialogue-based team tutoring system incorporating conjecture procedure and group cooperation has significant learning results in the teaching of triangular congruent and similarity. The teaching effect of the intelligent dialogue-based team tutoring system that integrates conjecture procedure and group cooperation is significantly better than teacher centered instruction. Further analysis of the students who use the intelligent dialogue-based team tutoring system that incorporates conjecture procedure and group cooperation shows that there is a significant difference in the learning outcomes of low and middle ability students. The teaching effect is significantly better than that of teacher centered instruction. For high-ability students, the teaching effect of using the intelligent dialogue-based team tutoring system incorporating conjecture procedure and group cooperation is significantly better than teacher centered instruction. Furthermore, students position on that incorporates conjecture procedure and group cooperation have a positive attitude towards. The mathematics learning experience has also been improved, and good learning outcomes have been received, which is practical in teaching site.

Keywords: Math dialogue, tutoring system, conjecture procedure, team, triangle congruence, triangle similarity.

WIN-WIN: COMMUNITY-HIGHER EDUCATION COLLABORATION FOR YOUTH WITH AUTISM SPECTRUM DISORDERS AND THEIR FAMILIES

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Abstract
Introduction. Engagement in community-based recreation, leisure and socialization activities are quality of life outcomes for all individuals. Lack of opportunity and support options can present particular challenges to children with Autism Spectrum Disorder (ASD) and their families. Building models with college mentors is one way to bridge this gap in recreation for children and families, while also providing service learning and field-based learning within higher education. A model for a community-integrated recreation and family support program for youngsters with Autism Spectrum Disorder (ASD) and their families was presented. The program features an 18-year collaboration between an institution of higher education and the New York State Office of Persons with Developmental Disabilities (OPWDD) through community outreach for recreation. The purpose of the study was to describe the program model as well as the perceived outcomes from the point of view of participants.
Method. Qualitative methods included interviews with long-time (2-4 plus years) participants including 10 children/young adults, 10 parents and 10 former volunteers who all shared perceived outcomes of their experiences.
Results. For children/young adults and parents the themes of community, acceptance, resources and enjoyment are core program outcomes. They also indicated there is need for more opportunities in the recreation and socialization areas. Interviews with former volunteers included perspectives on developing relationships with children and families and understanding of individual support needs as well as special abilities and interests among the program participants.

Discussion. The need for more extensive recreation, leisure, and socialization models of support for individuals with ASD are examined with particular focus on collaboration in higher education. Identification of further research with more participants including those who did not find the program matched their needs is important.

Keywords: Autism spectrum disorders, recreation, socialization, parent support group.

SCIENCE TEACHERS' PERCEPTIONS ON USING MOBILE-BASED FORMATIVE ASSESSMENT FOR INQUIRY-BASED TEACHING: BENEFITS AND CONSTRAINTS

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Abstract
The proliferation and use of mobile technologies in and outside the classroom has contributed to the rapid extensive implementation of mobile-based teaching and learning practices across the globe. In the 21st century, using mobile devices for assessment purposes has become the new and important phenomenon for researchers and teachers. This paper reports the findings of a qualitative case study of four science teachers' perceptions on the use of mobile-based formative assessment for inquiry-based teaching within their classrooms. Participant teachers were purposively selected from schools around the Gauteng Province, South Africa. Data was gathered through baseline questionnaire, classroom observations and stimulated-recall discussions. The findings from the baseline questionnaire indicated that all four participating teachers have adequate knowledge and understanding on using inquiry-based teaching, formative assessment, and technology. Challenges such as inadequate teaching and learning time, inadequate resources, no-cellphone school policy, unstable network connectivity and teachers' inadequate knowledge and skills were established from classroom observations and stimulated-recall discussions as common barriers to effective enactment of mobile-based formative assessment for inquiry-based teaching from all the four teachers. The four science teachers indicated benefits of implementing mobile-based formative assessment for learners such as enhanced learner engagement, participation, motivation, and learners having fun while they comprehend scientific concepts during the learning process. Although the use of mobile-based formative assessment was reported to be beneficial in the teaching and learning experience, science teachers also mentioned that the curriculum must be flexible in terms of time allocated, for mobile-based formative assessment to be effectively implemented during inquiry-based teaching.

Keywords: Formative assessment, inquiry-based teaching, mobile-based formative assessment, mobile technologies.

PERSONAL EXPERIENCES AND SUGGESTIONS FOR CREATING HIGHLY ATTRACTIVE MOOCS ABOUT ARTIFICIAL INTELLIGENCE

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Abstract
MOOCs have brought many possibilities for both learners and teachers. For learners, they can study from distances and search for courses that fit their professions. For teachers, a MOOC can fully demonstrate his/her research basis, personal charisma and versatile abilities. MOOCs also bring teachers new challenges that may be overlooked in traditional education processes, especially when they are creating highly attractive, high-quality courses.
In this paper, we first introduce the information about our courses that each has been attracting more than 10,000 learners at a rapid speed. Then, we recall our personal experiences of creating them. Personal experiences include surveying and implementing: we survey the related attraction/quality research in the MOOC education literature to stand us high in the beginning. The implementing experience is in chronological order, consisting of the planning-and-preparation, presentation, uploading and post-course

interaction stages. And then, we summarize our suggestions for successful MOOCs, concretely: the comprehensive preparation, including content selection and learner estimation, is important; the teamwork is crucial to make decisions more reasonable and to progress faster; the third is the presentation of the courses and then the first-eye attraction tricks; the post-course interactions and course updates are also important, which are factors of a persistent course attraction; the last but not least is the MOOC and education research--- A good pedagogy understanding enables a teacher to outstand wherever in MOOC or traditional classroom.

Keywords: MOOC, attractive, experience, suggestion, teamwork.

DATA-DRIVEN DIFFERENTIATION

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Abstract
The heterogeneous classrooms of today require teachers to differentiate effectively. Effective differentiation however is a very time-consuming process. Teachers are faced with the challenge of first identifying the students in need of differentiated content, be it in the form of more support and easier exercises for struggling students or more challenges for high-performing students. Once these needs are identified, the teacher still needs to come up with the differentiated material that best suits the needs of each student. The identifying of differentiation needs and the delivery of differentiated content should preferably happen as the need arises, not as a delayed reaction based on observations from an exam for example. This trifecta of identifying needs, providing suitable content, and doing it all at the right time is what makes differentiation so difficult. In this article, we present a study where a digital learning platform called Eduten was used to provide automated suggestions for differentiation to teachers. The participants (N=757) were divided into two groups based on whether the teacher followed the suggestions or not. According to results, the differentiated students increased their accuracy significantly, while in the other group the accuracy remained the same. The number of completed exercises also increased more in the differentiated group, suggesting a raise in motivation. Based on the results, automated suggestions for differentiation can be highly useful but only, if the teacher follows them.

Keywords: Differentiation, learning analytics, digital learning, technology, data-driven.

INTELLIGENT TUTOR USING PERIPHERAL ARTIFICIAL INTELLIGENCE: OPPORTUNITIES AND LIMITS

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Abstract
This article aims to present a model of Intelligent Tutoring System exploiting artificial intelligence to personalize the learning of the learner and to automate certain tasks of the teacher. All the resources consulted and the educational objectives achieved by the learner will be processed using the TinCan API and the limitation of the amount of sensitive data sent to the cloud will be ensured by the use of peripheral artificial intelligence. We start by defining the concepts of artificial intelligence and Intelligent Tutoring System, then we focus on the implementation of machine learning in such a system and the advantages that this technique brings. Finally, we describe the limits of such a technology and the possible solutions to it.

Keywords: Learning, edge computing, peripheral artificial intelligence, pedagogical resources, semantic technologies.

ARTIFICIAL INTELLIGENCE IN EDUCATION – WHERE ARE WE NOW?

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Abstract
There has been a lot of talk about artificial intelligence (AI) in education recently. However, the utilization of AI in an educational context does not always seem to match with application in a general context. While we are seeing great advances in the development of AI in self-driving cars, facial recognition or computers excelling in chess, the development of intelligent teaching assistants may seem to be lacking. In this article, we take a look at the current state of utilization of AI in an educational context. For this, we reviewed the current literature about artificial intelligence specifically in education. Ten high quality educational journals, with five having special focus on technology, were selected for the review. Based on the review, it seems that artificial intelligence is still mostly covered from a technical point of view, as there were only a handful of articles found in purely educational journals. The main focus seems to be on case studies and in including AI based courses in curriculum, followed by meta studies and critical reviews. Surprisingly, there were only a couple of articles about the ethical concerns of using AI in education, while in general the ethics of AI seems to be quite a popular topic. The total number of articles written about AI in education seems to be nevertheless increasing each year, which seems to be in line with the general interest of AI.

Keywords: AI, artificial intelligence, meta study, literature review, technology.

CREATIVITY, CULTURE, AND CONSTRUCTION: BRINGING DESIGN THINKING TO INDIGENOUS PRESCHOOLS

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Abstract
This paper presents the process of designing creative workshops that inform the construction of preschools in indigenous communities. The authors aim to answer the following: What is the most effective way to design and execute a workshop that enables community members of other cultures to create a preschool in their local neighborhood? How can this preschool foster and retain creativity among children through its architecture while remaining culturally celebratory and relevant? The authors use the Design Thinking process to develop a workshop for community leaders to conceptualize, ideate, and prototype these buildings. By combining discussion-based research on creativity in early education with the development process of the workshop (and its implementation in the Mayangna community in rural Nicaragua), the authors conclude that, to build a culture- and creativity-promoting workshop model that might be used around in preschool design around the world, the process must be highly adaptive, and indigenous voices must lead the project through longstanding relationships with continued input and redirection.

Keywords: Preschool education, creativity workshop, culture retention, indigenous community, design thinking.

YOUNG CHILDREN AND SCREEN-TIME: SPANISH RESEARCH GAP AND FUTURE INVESTIGATIONS PROPOSALS

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Abstract
Nowadays, technology and digital screens have become an essential part of our routine. At the same time, young children are being exposed to these screens at an earlier age. Literature suggests that there is a digital gap between those children who have been trained to use technology critically and effectively and those who have not. Considering the relevance of the topic in developed societies, we will analyze the current national (Spain) and international literature on the issue. The objective of the study is to recognize the needs and weaknesses of Spanish research with the aim to offer an effective data collection tool for future research. The literature review reveals that as a result of COVID-19 pandemic, several new articles have been produced with the aim of analyzing the situation, anticipating possible consequences and providing action strategies and healthy routines for families and schools. On the international scene, during the last 10 years the number of studies about experts' recommendations, health concerns and the benefits of educational Apps has increased consistently. Focusing on national research, most Spanish studies exclude young children (0-6 years) and those who include them, focus on a specific field or analyze a small sample. To cover the research gap from 0-6 years old, we have designed two surveys, one for caregivers and one for preschool teachers. Some semi-structured interviews are also being considered to complement the quantitative data with qualitative information related to the perceptions, experiences, beliefs and practices of parents and teachers. The sample is divided into the main caregivers of young children and early education tutors of preschools in the Metropolitan Area of Barcelona. To include different socioeconomic status (SES), should be conducted in at least 30 preschool education centers distributed as follows: 10 schools located in low-income neighborhoods, 10 schools located in middle-income neighborhoods and 10 schools located in high-income neighborhoods.

Keywords: Young children, preschool, screen-time exposure, caregivers' perceptions.

PROMOTING LINGUISTIC SKILLS AND ACADEMIC VOCABULARY AMONG ARABIC NATIVE SPEAKING MIDDLE SCHOOL STUDENTS: AN INTERVENTION STUDY

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Abstract
51 seventh graders students who are native Arabic speakers participated in an intervention program. The program included ten learning units that aimed to promote the students' linguistic literacy, alongside the Arabic language classes in the classroom. The learning units were operated in two environments: computerized and printed (24 students studied in the computerized environment compared with 27 in the printed environment). In each unit of the ten, the students dealt with three comprehension tasks (continuous text with a follow-up comprehension questions, closed-ended questions at a moderate complexity level and closed-ended questions at a high complexity level). In order to determine the changes in the students' literacy performance, we compared their performances in the first unit versus the last, in the three reading comprehension tasks. The results of a two-way analysis of variance with repeated measurements indicated that there was no significant main effect of the literacy units (first and last) however there was a major effect of the learning environment, as the achievements in the reading comprehension among students who studied in the printed environment were higher compared to those who studied in the computerized environment.
The results further indicate that in the first and last units there were higher achievements in the reading comprehension task among students who studied in the printed environment compared to those who studied in the computerized environment. A three-way analysis of variance with repeated measurements indicated that the reading comprehension achievements in the first task (continuous text) were significantly higher those in the second task (closed-ended questions at a moderate complexity level) and the third task (closed-ended questions at a high complexity level) .likewise, the achievements in reading comprehension in the second task were significantly higher than those in the third task. In the study of

double interactions Moreover it was found that there was a significant interaction between the types of reading comprehension tasks and the two learning environments (printed and computerized). In a follow-up analysis type Bonferroni examining the differences between the different learning environments in each of the comprehension tasks separately, it was found that while statistically there were no significant differences in the achievements in the first task (the continuous text) between the different learning environments, yet the achievements in the second task (closed-ended questions at a moderate complexity level) and the third task (closed-ended questions at a high complexity level) were significantly higher among subjects who studied in a printed environment versus those who studied in the computerized one.

Statistically there were no significant differences in the achievements of the reading comprehension first and third task between the different literacy units, however the achievements in the comprehension test in the second task were significantly higher in the first unit compared to the achievements in this type of text in the last unit.

The findings of the study will be discussed in the context of linguistic literacy development of Arabic-speaking students in middle school.

RESEARCH ON ONLINE PROGRAMMING EDUCATIONAL TOOL: CASE STUDY ON A THREE-IN-ONE ENVIRONMENT

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Abstract
In the field of information education, the introductory course of programming is a threshold. It is often the first course faced by students with no or little background knowledge. For learning unfamiliar and difficult things, students will inevitably be vulnerable and give up their learning. Hence, it is necessary to help students correctly cultivate the concept of computational thinking to assist them in their learning process to reduce learning difficulties as well as enhance interest. Our research team designed an online programming educational tool that is based on Python, Scratch, and activity diagrams. The purpose is to help students learn the basic concepts in the introductory programming courses. Users can just connect to the website to learn and many convenient functions are added to record the learning process. The Python part is provided for non-primary school students to learn and the Scratch part is for primary school students to learn logical concepts. Also, there is an activity diagram to increase students' interest in learning and reduce learning difficulties. The questionnaire data were collected at the beginning and end of the course and the results were finally analyzed. By analyzing the questionnaires collected and analyzing the data content, we can see that the results of this experiment have improved the students' learning process. However, the operation of the tool has also received feedback from students. Our designed features need to be closer to the user, and it is expected to assist more learning content, not only at the beginning of programming but also in the future to assist in more advanced programming learning. Compared with traditional teaching, this research uses tools to assist learning so that students can better understand the working principle of coding.

INVESTIGATING SELF-DETERMINATION ASPECTS IN STUDENTS WITH VISION DISABILITY THROUGH DRAMATIC PLAY

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Abstract
Self-determination is a very crucial and sensitive developmental domain for students with vision disability. This study investigates the role of dramatic play workshops on self-determination of eight students with vision disability, aged 8-12, from their parents' perspective. Quantitative data revealed that

dramatic play intervention had a small positive effect on students' self-determination level, whereas qualitative data showed that parents observed significant positive changes on their children self-determination skills expression.

Keywords: Self-Determination, vision disability, dramatic play, AIR self-determination scale, intervention.

OPINIONS OF FUTURE TEACHERS ON COMPETENCIES FOR WORKING WITH STUDENTS WITH DEVELOPMENTAL DISABILITIES

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Abstract
A significant number of children in relation to educational institutions in the European Union, subjected to inappropriate and discriminatory position, represent the basis of the document *Union of Equality: Strategy for the Rights of Persons with Disabilities* 2021-2030 (COM, 2021). At the same time, the social model of inclusion in education (Slee et al., 2019; Sunko, 2021) and articles 2 and 23 of the Convention on the Rights of the Child (1989) advocating equal rights of all children to education, indicate the dichotomy of desired and achieved.
Each individual, whether he/she has certain difficulties or not, differs in his/her abilities, and each of them has their "personal needs". It is important to note that students with special educational needs are students with disabilities and gifted students. Meeting the diverse needs of students through inclusive practices is often difficult or even impossible for those teachers who have not acquired the necessary skills and knowledge, so it is imperative to empower and support teachers primarily through formal education so that teachers learn to use effective inclusive teaching methods at all levels (Loveys, 2022).
The aim of this research was to determine whether personal experience and student's attended academic year of the teacher study (N = 304, all academic years) from three Teachers' Faculties in the Republic of Croatia, correlate with their sense of personal competence, motivation for further professional development, or the need to change the study program.
The results of this research show that students' personal experiences with children with developmental disabilities (DD) affect the sense of their personal competence for working with children with DD, and that students of all attended academic years are equally motivated to teach children with DD. They also point out the need for additional training, and 84.64% of them emphasize the importance of practice in learning that deals with teaching children with DD. Data suggest that the same percentage of students feel the need to change/adapt the content of the study program accordingly. The main feature and implication of this research is the insight into the development of future teachers' needs for further higher education for teaching children with DD.

Keywords: Children's rights, professional development, school education, teacher skills, values.

+YOU: ASK YOURSELF, ACT AND MAKE IT POSSIBLE!
PHERECLOS PROJECT: A LOCAL EDUCATION CLUSTER AT PORTO, PORTUGAL

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Abstract
U.Porto plays a major role in the Northern region of Portugal and intends to continue to play a major role in the development of the region's future, especially establishing connections with schools and its community, municipalities, companies, and others. establishing a Local Education Cluster (LEC). Based

on the experience of the University of Porto (U.Porto) regarding young public engagement through many different succeeded initiatives, like Junior University and U.Porto's Fair, the University aims to promote a closer relationship with schools and many stakeholders and not just opening its doors to the school public. These activities are well succeeded stories that illustrate the strong impact of such activities in the development of the region, together with their mobilizing effect on key stakeholders. In H2020 Partnerships for Pathways to Higher Education and Science Engagement in Regional Clusters of Open Schooling Project (PHERECLOS) U.Porto developed several entrepreneurship workshops based on an inquiry approach highlighting the importance and role of student's questions. The U.Porto intervention in this H2020 project also engaged the participation of families and CEOs from companies with some storytelling activities. This activity was an inspirational factor to develop students' involvement, strengthening the connections with the school project and also acted as a motivational factor. Other educational activities aimed to help students with innovative ideas and entrepreneurial challenges to follow in future careers, by highlighting STEAM competences that they can use in the future. All activities are done through collaborative work allowing students to learn with others and gather ideas, ambitions and interests in different careers. This group sharing initiative promotes and stimulate rethink in new approaches for a future job by the engaged students that voluntarily participated. With success in its initiatives for School Opening to society, PHERECLOS project developed diverse Local Education Cluster in the different partners' countries that will ensure the continuation of the PHERECLOS aims in future activities even after the end of the project. In this presentation, we aim to introduce LEC developed by the UPorto University and explain how family members were invited to engage with the school community. In this moment our LEC involved almost reached 100 students and more workshops are schedule to be developed with students from two public schools. The results show an increase of students' interest in entrepreneurship and a higher motivation in their academic future and employment.

Keywords: Education, entrepreneurship, stakeholders, public engagement, schools.

INTERNATIONAL COLLABORATIVE PROJECT-BASED LEARNING: DESIGN OF URBAN WIND TURBINES

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Abstract
Project-Based Learning (PBL) is an active learning approach that focuses on solving real-life problems by having students work on authentic, engaging, and complex engineering challenges. This applied approach to higher education teaching and learning promotes the development of specific technical and meta-skills that are critical for the development of the student's future professional skillset. In this pedagogic experiment, a group of seven students and two facilitators from a French University did participate in a five-day engineering challenge in a country abroad. Thus, having selected Portugal to have a multinational and multicultural collaborative approach to developing innovative sustainable solutions, they were asked to design eco-wind turbines for urban use in a typical town located in the centre of the country. In this real-life challenge, students had to research technical data related not only to the dedicated issues of wind turbines technology but also to local geographical and meteorological factors. During the creation phase, both French and Portuguese students worked collaboratively to discuss the PBL main findings and address project design solutions. As preliminary results students have presented and discussed technical specifications for sustainable eco-wind turbines installations.

Keywords: Design, sustainability, wind turbines, electric energy, collaboration.

TEACHING AND LEARNING

THE EFFECTS OF ASYNCHRONOUS ONLINE PEER-TEACHER FEEDBACK IN A THAI EFL PUBLIC SPEAKING CLASS

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Abstract
The teaching and learning of English speaking has recently posed several challenges due to the coronavirus pandemic. One of the challenges is that it is nearly impossible to conduct the teaching and learning in the physical classroom, affecting how students are given immediate feedback to. Teachers have to find different methods and techniques to use in their speaking classes during this situation, for example, giving live virtual presentations, pre-recording video clips and uploading them to online classrooms, giving online comments and feedback, and so on. In this mixed-methods study, the purposes were to investigate the effects of giving asynchronous online peer and teacher feedback to students after they had uploaded their three types of speech video clips, i.e., informative, persuasive, and entertaining, to the Google Classroom and to explore the students' attitudes toward the two types of feedback. Participants were 25 fourth-year undergraduate students, majoring in English for International Communication at a university in northeastern region of Thailand. It was found that although the second speech video clip scores were higher than the first speech video clip scores, students still had difficulties in providing sufficient and specific peer feedback on the areas of organization and research citations, impacting growth in their speaking skills. Moreover, findings from the semi-structured interviews revealed that students viewed the two types of feedback positively. It helped them to gradually develop thinking and critiquing skills, and they also demonstrated increased confidence in speaking after they had received both types of feedback. This study proposes opportunities for discussion, i.e., providing sufficient peer feedback training and meaningful writing assignments, to hone students critiquing skills, especially on the areas of organization and research citations.

Keywords: Peer feedback, teacher feedback, asynchronous feedback, EFL speaking.

FAMILY INVOLVEMENT IN ECE THROUGH THE FIQ (FAMILY INVOLVEMENT QUESTIONNAIRE) IN SPAIN

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Abstract
Family-school involvement in the education of children under 6 years of age is a complex and multidimensional area of study. In this regard, there is a great deal of research that examines the extent to which such involvement affects the development and learning of their children. The research consulted indicates that high levels of involvement and family-school collaboration in children are associated with better academic performance and socio-emotional functioning at school among other outcomes, but also with benefits for families and teachers. In the case of the present study, the Spanish adaptation of the FIQ (Family Involvement Questionnaire) (Fantuzzo et al., 2000) was applied to a sample of 659 parents of children who have attended ECE between 0 and 3 years of age in different autonomous communities of Spain during the 2020-2021 academic year. The FIQ is a specific questionnaire to study the Early Childhood stage, and collects information from parents on the ways in which they participate in their children's educational experiences, in order to establish different degrees of involvement in the three subscales that comprise it; Home-Based Involvement, School-Based Involvement and Home-School Conferencing. It is a 42-item self-report Likert scale, scored from 1 to 4, with 1 being rarely and 4 being always. The results of this study show that the subscale with the highest scores is "home-school communication", with a score of 60, which is rated as high, with item 1 (I attend meetings with my child's teacher to discuss my child's teaching or behaviour) and item 3 (I talk to my child's teacher about my child's daily routine) receiving the highest scores. The other two subscales show average scores, with

items 16 (I participate in planning school trips for my child) and 26 (I go on class trips with my child) scoring the lowest. It can be concluded that, given the importance of family school involvement, it is important to know what actions can be implemented by Early Childhood schools to achieve greater and better family participation.

LITERACY, LANGUAGE AND LINGUISTICS: STRUCTURING ENGLISH TEACHING PROGRAMS IN RURAL COMMUNITIES

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Abstract
This study will examine English learning environments and methods in rural settings in Europe and the United States, assessing their contributions to language learning, both written and spoken. This is a pilot project and will evolve into a rigorous comprehensive study suitable for publication as a chapter and part of an edited volume. This study will compare and contrast educational systems, including two different styles of English education structured in a comparative analysis using five focal areas. These focal areas include the definition and structure of rural education, English language learning modalities, linguistic environment, academic leadership, educational outcomes and indicators of success. For the purpose of this paper, the definition and structure of rural education and English language learning modalities will be addressed. The opportunity to investigate the experiences of teachers who are active in rural communities and focus on the multidimensional aspects of the education of multilingual learners will provide valuable information that will contribute to expert teaching and learning. Embracing English language learning, new technologies, and initiating change through proactive educational strategies including a paradigm shift to incorporate a translanguaging pedagogy for emergent English speakers will lead to relevant and purposeful accomplishments in rural school settings.

ENGAGING UNDERGRADUATES IN HIGHER EDUCATION THROUGH THE USE OF MUSIC AND FILM DRAMA

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Abstract
Music and filmed drama provide a highly effective means of engaging students in their learning. The author has consistently and successfully used these media to present metaphorical representations of key learning concepts to undergraduate social work students. This presentation will explore a range of pieces of student feedback to explain the various ways in which this approach has proved useful to students. The student feedback will be reinforced by evidence of the ways in which the approach has been endorsed. It is submitted that the approach is applicable to any undergraduate area of study because of the fact that the benefits of the approach are not dependent on the subject of study and have a rationale based in neuroscience. The presentation will provide a number of examples of use of music and film media in order to encourage conference delegates to reflect on the reasons that the approach is successful and how delegates might integrate the approach into their teaching.

CRITICAL THINKING WITHIN THE INFORMATICS TEXTBOOK OF THE SECOND CLASS OF THE GREEK LYCEUM

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Abstract

It cannot be denied that there are always problems societies and individuals have to deal with. To confront these problems in living conditions that seem to be constantly and rapidly changing, specific competencies are needed. Critical thinking is indispensable in developing such competencies effectively. It can support identifying, constructing and evaluating arguments. It can also contribute in improving problem solving skills. Critical thinking is essential to develop decision making competencies and communication skills. Furthermore, people can use critical thinking in order to confront their biases, prejudices and stereotypes. It is clear that critical thinking is useful and necessary in multiple areas. For that reason, critical thinking is considered to be a key pedagogical goal in many levels of education. For this reason, modern education seeks to promote the cultivation of critical thinking. In particular, education of Informatics is strongly related to critical thinking. Students cannot develop skills related to Informatics if they cannot think critically. Therefore, critical thinking is essential for teaching Informatics subjects. Consequently, within the Informatics textbooks the cultivation of critical thinking skills should be promoted. The present research aims to determine whether there are critical thinking skills whose cultivation is equally promoted within the Informatics textbook of the second class of the Greek Lyceum. The method used in this paper is Qualitative Content Analysis, which is established in the social sciences for texts analysis. The findings of the present research revealed that within the examined textbook there are no critical thinking skills whose cultivation is equally promoted.

Keywords: Critical thinking, content analysis, informatics, textbooks.

WHAT ABOUT "THE" SCIENTIFIC METHOD? A SURVEY APPLIED TO MIDDLE AND SECONDARY GEOSCIENCE TEACHERS

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Abstract

The debate over whether there is a single unifying scientific method or a variety of methods, each of which is applied to a different discipline of science, is still a difficult one. Popper idea of refutation was a criticism to the inductive method and claimed the need to submit theories to falsification. His thesis ended up being a demarcation of science and pseudoscience. But the question remains: do all sciences follow the same scientific method? Namely because discoveries in geology have to overcome time and space enormous scales, geologist have been called by Lord Kelvin as "stamp collectors". Having started as a field science, and even having been denied by Hutton as an experimental science, modelling in geology only took place at the end of the 19th century by the hand of Sir James Hall. The need to mirror scientists' methods is a demand of inquiry-based teaching, but few geology teachers have correct knowledge about the method used by geologists. In the present study, a survey was undertaken online with the main objective of investigating what is teachers' knowledge about the (geo)scientific method. Participants were 108 geology middle and secondary teachers in Portugal. The majority of respondents were women (n=79; 73.1%) and the average age was 46 years old. All participants were graduated, but 51 (47.2%) had a master and 5 (4.6%) had a Ph.D. The results showed erroneous conceptions that are commonly reflected in inquiry-based teaching classrooms, namely regarding the scientific method but also about investigative competencies and geology as an experimental science. The majority of the teachers' said that there only exists one scientific method for all sciences (n=49; 45.4%) and that it has a fundamentally linear nature from observation to conclusion (n=54; 50.0%). The scientific method was claimed as needed to allow the confirmation of hypothesis by many teachers (n=44; 40.7%). Some participants referred Uniformitarianism as a principle that justifies the historical and interpretive reasoning of geologist (n=48; 44.4%), but not so many referred the analogic reasoning (n=28; 25.9%). Teachers also referred to critical and systemic thinking as scientific competencies (n=72; 66.7%) and gave less importance to others like

observation and argumentation (n=27; 25.0%). Results analysis corroborate that an inquiry-base teaching methodology requires history of geology and an epistemological reflection to be integrated in teachers' initial training and professional development. The epistemology behind geology classes has to be taught to eradicate alternative conception about the scientific method.

Keywords: Scientific-inquiry, scientific reasoning, investigative competencies, geology, teaching sciences.

SUSTAINABLE DEVELOPMENT GOALS & VIOLENCE PREVENTION IN HOSPITALS: CONTRIBUTIONS FROM PSYCHOLOGY STUDENTS

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Abstract
Ideally, all individuals should be involved in the sustainable development goals attainment. Even though frequently ignored, Psychology can have a considerable impact in this context. Psychology students can also make an important contribution as such. Additionally, an area in desperate need of attention, even before the hardships related to the COVID-19 pandemic, is violence prevention in healthcare settings. Consequently, the aim of this study is to present the rationale, process and results of a project on violence prevention in hospitals undertaken by Psychology undergraduates. The 61 students enrolled in a 3rd-year compulsory course enthusiastically accepted the challenge to develop a brief training session for violence prevention in a hospital setting as part of their grading system. The theme and the possibility to develop a training session were proposed and not imposed. A total of 22 work groups were formed: 4 decided to focus on patients, 4 on nurses, 3 on mental health professionals/psychiatrists, 2 on psychologists, 2 on obstetrics/gynecology; almost all of the remaining groups chose health professionals in general. Only 4 groups decided to take the challenge one step further and direct their training for outside of the class, via Zoom. The sessions were scheduled to begin on the 7th December 2021. Among the sub-themes chosen by the groups (with no constraints from the teacher), there is: burnout (3 groups), psychological well-being, depression, communication, resilience, and optimism. Globally, the groups were keen on complementing the psycho educational component with a skills training approach. Consequently, during undergraduates' skills training, students can become more aware of the sustainable development goals and experience simple ways they can contribute to them (e.g., Goals 3, 4, 5, 8, 10, 16, and 17).

Keywords: Sustainable development goals, psychology, undergraduates, violence prevention, hospital settings.

THE NEEDS OF WOMEN-MOTHERS WITH CHRONIC MENTAL ILLNESS IN THE FIELD OF SHARED CHILDCARE – A HEALTH LITERACY RESEARCH STUDY

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Abstract
The study, which is presented in the contribution, is carried out with the support of the Charles University Grant Agency in the Czech Republic. Its objective is to identify the obstacles that arise when carrying out daily parental activities of women with chronical mental illness, caring for a child or children under the age of 7. The women admitted to this study are diagnosed with mental illness in category F 00-99, are aged 19 to 49, and have their child or children in their own care, whether in a complete or incomplete family. The comparative sample consists of women-mothers without a mental health disorder. Both groups of women with comparable demographic characteristics participated in a questionnaire survey, the results of which are presented in the contribution. Subsequently, 22 women-mothers with a chronical mental illness will take part in semi-structured interviews, and the corresponding demographic sample of 22 women without a mental health disorder will again be used for the comparison. The results of the study will contribute to the knowledge of the needs of a numerically significant minority of women -

mothers with mental health disorders, which is currently growing not only in the Czech Republic. From a psychosocial point of view, the results will also contribute to the destigmatization of these women.

HIGHER EDUCATION STUDENTS' KNOWLEDGE AND OPINION ABOUT GEOETHICS AND SUSTAINABLE DEVELOPMENT

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Abstract
Geoethics is a scientific area that has as its main concern the investigation of ethical conduct of humans with the Earth. Given that, geoethics has the potential to contribute to the achievement of the sustainable development. Geoscientists are professionals that investigate the Earth and have various professional responsibilities when performing their work. As such, geoethics started its emergency in the last decade and initially was focused on the geoscientists' conduct. Afterwards, geoethics evolved to be concerned about every interaction of mankind with the Earth system, like mining, geoheritage conservation, and climate change. The present study aimed to understand students' perceptions concerning geoethics and its relationship with Sustainable Development Goals of the 2030 Agenda of United Nations. The present study was developed under the scope of a Ph.D. thesis project with the aim to investigate and implement an innovative syllabus for teaching geoethics in higher education. Before the implementation of classes aligned with the mentioned syllabus, we conducted a survey that gathered data from 90 students studying geosciences higher education courses. Ages ranged between 18 and 58 years (mean=22.7) including 48 females and 42 males. The survey questionnaire comprised of 11 closed questions related to the importance of learning geoethics in higher education. The analysis of the closed questions' answers allowed us to understand that students consider important to have and follow an ethical conduct (n=87, 96.7%) and think that geoscientists have responsibilities towards the planet (n=83, 92.2%). The majority of the participants assumed to have already heard the term geoethics (n=53, 58.9%). When confronted with the meaning of geoethics most of the respondents stated that its knowledge is essential to the future professional work (n=87, 96.7%), and gave importance to the teaching of geoethics in higher education (n=82, 91.1%). Concerning the 2030 Agenda for Sustainable Development, the majority of the students showed having some knowledge about the goals and considered them relevant due to the current state of the world and the need for citizen intervention on society (n=83, 92.2%; n=68, 75.6%; n=77, 85.5%). Most of the participants assumed that geoethics can contribute to sustainable development (n=89, 98.9%) and were able to point out three Sustainable Development Goals that they considered as related with geoethics. As our main conclusion, we can say that the participants of the study appraised geoethics as a relevant matter to be learned in higher education and grant it as a path for planetary sustainable development.

Keywords: Ethics, geosciences education, survey, sustainability, syllabus.

FOSTERING YOUNG AGRONOMISTS' COMPETENCIES THROUGH EXPERIENTIAL LEARNING: A PILOT RESEARCH IN THE AGRICULTURAL UNIVERSITY OF ATHENS, GREECE

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Abstract
In the 21st century agronomy students need to take the responsibility of their career planning. Upon graduation, they are called to combine knowledge, skills, and values, in order to support as change agents, farmers' decision making aiming at sustainable agriculture and rural development. To reinforce such a

role it is deemed necessary to cultivate student agency, namely, a sense of responsible and active participation in society. Students need to be able to set achievable goals, collaborate successfully in order to solve problems, and act in-line with a professional ethos supporting the wellness of the community and the sustainability of earth. Hence, the need of competence-based education in our century is usually taken as granted. Higher education should adopt educational methods and tools that would support students' competence development. Experiential learning, represented by Kolb's Experiential Learning Cycle (KELC), is an essential part of such an approach and includes four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. In this paper, we explore the effectiveness of experiential learning aiming at the acquisition and/or development of competencies on the part of Agricultural University of Athens (AUA) students. To attain such an objective, we carried out a pilot with 69 AUA students, in spring of 2021. Students were divided into three groups (A, B, and C). Each group, attended a 3-hour meeting, using different approaches (A=traditional lecturing, B=experiential learning based on KELC and C=investigative case-based learning). Furthermore, students were offered a participatory class regarding rural advisors' profile and planet sustainability. Due to the COVID-19 pandemic, online tools were adopted. Students participated in pre- and post-survey based on a questionnaire. Focus groups and observation methods were also utilized to further explore and validate quantitative data. In this paper we report the design and the quantitative and qualitative findings, particularly focused on the experiential learning approach.

Keywords: Higher education, experiential learning, competencies, agronomy students, future advisors.

TEACHING ENGLISH WITH A CHILLY FORMAT: THE GRAPHIC NOVEL!

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Abstract
Recently, the term graphic novel is commonly used in the educational area, and it's often associated with another term, which is **'comic book** '. In a typical perception, the graphic novel provides an interesting way to communicate language concepts with a number of characteristics that may help students learning in a more effective manner rather than traditional textbooks. Given that it has been introduced in school lessons, it has certainly represented an opportunity for teachers.
However…what exactly is a graphic novel? It is a didactic tool. A graphic novel, as its name suggests, is a novel that tells a complete story via illustrations. A graphic novel will offer the type of resolution that one expects from a novel, even if it is part of a series. Effectively, this makes a graphic novel longer and more substantive than a comic book, which is a serialized excerpt from a larger narrative story.
Humankind has long told stories via images, beginning, perhaps, with the cave paintings of ancient civilizations. It was in the twentieth century, that we witnessed the rise in the use of comic books, which experienced a golden age during the Great Depression and World War II with the ascendance of Marvel and DC Comics. The Cold War era saw comic books and novels emerge into what is now known as a graphic novel. The term "graphic novel" traces back to an essay written by Richard Kyle in the comic book fanzine Capa-Alpha (although to this day there is not one fixed definition of "graphic novel"). The term is thought to have become mainstream with the publication of Will Eisner's A Contract with God in 1978.
The authors provide an overview of the graphic novel format and its use in school lessons. The work is aimed at describing the most important steps of this format, with its implications for teachers and students. and the theoretical base that highlights how and why it can be a useful tool to present content relevant for the current generation of students. The authors provide examples of how the graphic novel medium could be applied to English concepts and conclude with the future prospects of this studying/teaching tool.

Keywords: Graphic novel, digital technologies, comic, teaching, medium.

BRIDGING LANGUAGE GAPS OF L2 (SECOND LANGUAGE) TEACHERS BY OPTIMIZING THEIR SELF-AWARENESS

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Abstract

During a Canada-wide consultation session of teacher trainers for future teachers of French, Canada's official second language (L2), given the problematic situation of unprepared candidates with questionable mastery of the language, some instructors even retreated to a position stating that these students need to be encouraged although they are struggling with French. What this implies is placing role models in classes with inaccurate French, repeating the same situation if not making it even worse as indeed early French immersion is still the chosen protocol by Canadian non-French speaking parents. Young children absorb language like sponges repeating their teacher and if their French is inaccurate, learning the mistakes.

What is however of more crucial importance is not to replicate language programs delivery from which learners emerge without sufficient mastery to make themselves understood because of inaccurately learnt language forms. Therefore, we have to uncover remedies to properly guide all learners, through strategies and techniques for their individual management of the language they are trying to acquire-learn. We want to ensure an economy of time in teaching programs with efficient contact times.

Revisiting language programme approaches to uncover what was advocated for error correction, we looked at actional attention (Ellis, 1992), work on noticing (Fotos, 1993), markedness (Larsen-Freeman, 2018), interference (Abdullah & Jackson, 1998) interlanguage theory (Selinker, 1972), the monitor model (Krashen, 1982) and recent types of approaches, namely notional functional, communicative, and action-oriented. As well, we gleaned insights from a review of the literature on strategies and techniques including Raab, (1982) on spectator hypothesis with feedback to the whole class; through peer correction by Cheveneth, Chun and Luppesku (1983); with other innovative techniques suggested by Edge (1983); techniques advocated by Vigil and Oller (1976) for oral correction; and correction across modalities (Rixon, 1993).

We will report on a qualitative study (Creswell & Poth, 2018) based on an analysis of instructor's notes regarding the observed effect on some of the strategies that were tried and across different student groups. In this study, notes on how the instructor devised ways of drawing attention and using metacognition to obtain the best results are examined. In addition, ways involving the affective domain, through emotions and also using innovative ways through disruptions etc. were tried to see if they provided a further impact.

Students reported that they appreciated the corrective feedback the way it was dispensed. However results show a variety of concerns, namely the problem with deeply fossilized errors, some students' being over confident about their language ability, and either a deep concern for making errors that is paralyzing or a belief that over time correction will take place in interlanguage development without making any effort.

Due to page limitations, in this paper we will essentially present overarching aspects.

Keywords: Self-awareness raising, error correction, emotions and creativity.

EXCAVATING LAYERS OF COLONIAL STRATIGRAPHY IN EDUCATIONAL FOUNDATIONS

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Abstract

In Canada much of the thinking that underpins the foundations of educational practice is rooted in the agenda of colonization. Until recently, both curricular development and pedagogical approaches both ignored and erased Indigenous voices and histories in favour of what Battise (2013) has described as a Eurocentric mode of cognitive imperialism. In our work to decolonize teacher education we have striven to help pre-service teachers excavate their school experiences to reveal the colonial stratigraphy beneath the mythologies about Canada and Indigenous people in Canada their received curriculum has conveyed. Our approaches include art-based and experiential learning opportunities that help students to rebuild

their notions of what it means to practice Indigenous education in respectful, inclusive and responsive ways, and to engage in teaching as a practice of two-eyed seeing (Bartlett, Marshall & Marshall, 2012) that brings the best of both Indigenous and Western ways of thinking to bear in their work with their students.

PECULIAR NUTRITIONAL HABITS IN ROALD DAHL WORKS: A STORYTELLING INTERVENTION ON PROMOTING PRESCHOOLERS' DIETARY SELF-REGULATION

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Abstract
One of the recurring motifs in Roald Dahl works whether leading to the plot's unfolding or not, is the peculiar nutritional habits and, by extension, everything connected with it, such as socio-emotional behaviors and concepts of the dietary rules' infringement. Looking at *The Twits'* distorted dietary hygiene, *George's Marvellous Medicine*'s disorientated nutritional advices and *The BFG*'s disgusting essential goods, it can be observed that the food as an act and its processes, are cultural notions identifying current concepts of not only the excesses and the adult's control upon children, but also the pedagogically proper nutrition. A reading of the interpretations carried by food's humorous representations in Dahl's aforementioned classics is ventured. The ways of how children's literature depicts the characters' nutritional attitudes and their possible implications on their behavior are analyzed. While proceeding, the design of a storytelling intervention on promoting dietary self-regulation is proposed for kindergarten. A series of narrative and creative writing activities of subverting and parodying Dahl's works, which aim to familiarize preschoolers with notions such as nutritional balance, food hygiene and eating habits, is presented. Dahl's humorous and extreme carnivalesque depiction of nourishment, followed by an exaggerated deviation of normal eating habits, is what could provoke and motivate preschoolers to shape a healthy nutritional attitude and a dietary self-regulation. The contribution of this particular study is to highlight children's literature significant role as a means of influencing children's thinking on fundamental issues related with their health, and to demonstrate storytelling's dynamics as a teaching tool for shaping their attitudes towards life matters.

SPORT AND PERFORMANCE PSYCHOLOGY IN SECONDARY EDUCATION

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Abstract
The mission of sport and performance psychology is to facilitate psychosomatic resolutions to help boost performance and well-being in those individuals who participate in sports. The incorporation of these performance-enhancing concepts in mental training is especially important for high school student-athletes with a negative mindset. Unfortunately, at the secondary level, there are a limited number of educational processes available which formally guide student-athletes through their psychological development in sport. As a result, many student-athletes are left without the mental skills needed to cope with the physical, psychological, and socioemotional demands of competition. The development of sport and performance psychology courses in schools could help facilitate positive improvements in how student-athletes think, act, and ultimately play, by merging the informal setting of extracurricular sports with the formal setting of the classroom. In this paper, we employ a mixed methods case study to demonstrate how a high school sport psychology class could impact the mindset of student-athletes. Course curriculum and pedagogy, grounded in a number of learning theories, was designed to utilize

educational and psychological principles to create a course anchored in sport and performance psychology concepts. Specifically, this case study demonstrates course effectiveness at building mental skill through the cognitive-behavioral system of 'Event + Response = Outcome' in 14 different self-actualizing constructs like goal-setting, mental toughness, and leadership. We present our results on mental skill development and draw a number of conclusions alongside several recommendations for those wishing to incorporate an innovative sport psychology course at the secondary level.

CORRELATION BETWEEN PASSIVE REST AND THE APPEARANCE OF FATIGUE IN A GROUP OF PUPILS FROM BOTOSANI COUNTY

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Abstract
Introduction: fatigue is a physiological phenomenon that disappears when lowering effort levels and when sleeping. Young people need at least nine hours of sleep per day.
Material and methods: the study was carried out on a group of 246 high schoolers (9th and 11th grade) from three schools in Botoșani County. Pupils completed a questionnaire with questions about the daily time spent sleeping at night, the presence of fatigue, the time of day and the day of the week when it occurs and the presence of sleep during the day (naps). The results were processed using Pearson's chi-squared test.
Results and discussions: most pupils sleep for 6-7 hours (37.80%) or 7-8 hours (33.73%) per night, with statistically insignificant differences between the two classes ($p > 0.05$). Fatigue is often present in 46.34% of cases with insignificant differences between classes ($p > 0.05$). The correlation between night sleep and fatigue shows significant differences ($p < 0.05$). When waking up in the morning, 44.30% of young people feel tired, with statistically significant differences ($p < 0.01$). The correlation between the time allotted for nighttime sleep and the presence of morning fatigue shows statistically significant differences ($p < 0.01$). Most pupils in the 11th grade feel tired at the end of the week, while those in the 9th grade show signs of fatigue at the start of the week, the differences being statistically significant ($p < 0.05$). The correlation between nighttime sleep and the occurrence of fatigue during the week highlights statistically insignificant differences ($p > 0.05$). Napping is rarely present in most cases (46.74%), the calculated differences being insignificant between classes ($p > 0.05$)
Conclusions: insufficient sleep during the night is associated in most cases with the appearance of fatigue, an aspect that must be carefully studied and monitored from a medical point of view.

Keywords: Sleep, tired, napping, high school.

EDUCATION IN PRE-SCHOOL AND PRIMARY EDUCATION IN LITHUANIA

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Abstract
Country's education 2013-2022 years strategy states that the main strategic goal of the Lithuanian education system is to make Lithuanian education a sustainable basis for raising the welfare of the country, to educate an energetic and independent person who responsibly and in solidarity creates the future for themselves, Lithuania and the world. STEAM activities integration in education offers several significant opportunities: on the one hand, there is an opportunity to develop successful children with creative thinking skills, and on the other hand, the process of discovery is their most enjoyable

experience. These aspects determine the modernization of the curriculum and further development of teachers' professional competencies. Thus, the purposeful application of the STEAM method in pre-school and in primary education creates favorable conditions for innovative, high-quality and comprehensive education of modern children.

The change of educational paradigms has affected various areas of Lithuanian education. The transition from academically oriented education to creative and integrated education has led to a different approach to the modern educational process. This created greater opportunities for students in Lithuania to choose the activities that best meet their abilities, research and develop, and at the same time to expand general and subject competencies. The more children experience the creative beauty of science, the more their motivation increases, critical thinking is encouraged and science itself becomes much more attractive to the children. Based on the experience of foreign countries, STEAM open access centers are currently being established in Lithuania, where students have the opportunity to deepen their knowledge and practical skills in science, technology, engineering, arts and mathematics. In this way, students are involved in various research and experimental activities, the quality of their education improves.

In order to reveal the possibilities of applying the STEAM method and good practices, a qualitative study was conducted, during which the experiences of teachers and parents were assessed using qualitative content analysis. Survey data were collected using interview and focus group methods. The results of the research revealed that by applying STEAM method, students willingly engage in creative cognition of themselves and the world around them, develop critical thinking, shape emotional perception and form their own values. Thus, the STEAM method, as an advanced pedagogical innovation, creates preconditions for the successful development of students' creativity in pre-school and primary education.

Keywords: STEAM method, creativity, pre-school and primary education, quality.

EFFECTS OF INVOLVEMENT LOAD IN EXTENSIVE READING ON LEXICAL RELATIONS AMONG ALREADY KNOWN L2 WORDS

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Abstract
The effects of task-induced involvement load, *evaluation* and *need* in particular, in extensive reading on a change of the lexical relations that EFL learners perceive were investigated. Fifty-two Japanese university students were assigned to one of three groups. All groups were given the same reading material (an English passage of 319 words including 12 target words) but with different tasks. MCQ group answered multiple-choice questions about the contents of the passage. MCQ+FB group answered fill-in-the-blank questions in the passage as well as the MCQ. MCQ+Com group did a composition task using the target words as well as the MCQ. In addition, all participants judged the degree of relationship between target words three times, a week before the task, immediately after the task, and a month after the task. The mean of relationship score was calculated for each participant each time, and was used as a dependent variable that indicates the degree of deepening of the lexical network. Participants also answered questions asking about their intrinsic motivation for the task. The results showed, contrary to our hypothesis, that *evaluation* manipulated by the tasks nor *need* compared by the degree of participant's intrinsic motivation did not affect the dependent variable. Next, we analyzed the data by using AMISESCAL (Asymmetric von Mises Scaling), a statistical model that visualizes asymmetric relations among elements on a two-dimensional map, and found that the relations among target words largely depend on the main target word (keyword of the passage). Although the present findings were generally negative in terms of the Involvement Load Hypothesis (Laufer & Hulstijn, 2001), it was suggested that carefully choosing appropriate reading material with target words is important for the future studies.

Keywords: Already known words, extensive reading, Involvement Load Hypothesis, Japanese learners of English, lexical network.

GENIUS LOCI: THE RIGHT CONCEPT FOR ELEMENTARY EDUCATION?

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Abstract
The paper deals with the phenomenon which, when grasped in a suitable way, can become an integral part of teaching in Czech schools: it is genius loci and related instruction. In the context of ongoing discussions on the new form of the curriculum, on the rapid changes in society over the past two decades and especially on the outlook for the future development of (not only) the Czech natural environment, we recognize the importance of the development of knowledge of the landscape. All existing processes, phenomena and landscape in general provide wide range for evaluation and cognitive part of children's personality. The environmental dimension, ranging from local aspects to global challenges and problems, also extends the personal and subjective conception of the place. Finally, practical experience and the development of competencies, in addition to knowledge, complete the use and application of the place by pupils in the intentions of locally grounded learning. The paper is divided into two parts, the first is devoted to the theoretical background, introduction of the key factors of both phenomena and their risks, and the second follows the context of curricular documents, teaching and place-based education on examples of pedagogical practice. Finally, the paper focuses on the view of outdoor education and place-based education as tools for student participation in the formation, consolidation and preservation of the genius loci in the level of knowledge, values, community cooperation, shared memory and common traditions.

Keywords: Place, elementary education, curriculum, genius loci.

EMOTIONAL AWARENESS OF ELEMENTARY STUDENTS ANALYSIS OF NEEDS AND INTERVENTION PROPOSALS

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Abstract
The ability to master emotional vocabulary is evidenced to enhance emotional expression, as well as broaden knowledge of the world and facilitate interpersonal relationships. Also, it helps to develop critical thinking, promotes abstraction, deepens self-knowledge, emotional regulation, forge solid social relationships and improves emotional competencies: emotional awareness, emotional regulation, emotional autonomy, social competence and competences for life and well-being. Some of them are mediated by language, such as emotional awareness which is the first step towards becoming aware of one's own emotions and the emotions of others as well as capturing the emotional climate of a particular context.

This study aims to be a needs analysis to detect the level of emotional vocabulary that primary students know differentiating between positive, negative and ambiguous emotions. Consequently, the differences between gender and grades had been explored. The sample of this study was constituted of 551 primary students (335 boys and 216 girls). An instrument developed *ad-hoc* was implemented to measure the emotional vocabulary. A quantitative analysis was done with the program IBM SPSS Statistics 24.0 software.

The results showed that as participants' ages increased, more positive emotions were detected. Apart from that, a greater number of negative and ambiguous emotions were noticed in the older participants. On the other hand, the younger participants reported an increased number of positive words. As compared to the boys, the girls reported more positive words. To explain these results, a variety of explanations and arguments could be considered.

According to previous research, studies have demonstrated how relevant is to carry out emotional competence's programmes based in emotional education in primary schools at early ages, since then exists major flexibility and capacity to acquire emotional vocabulary. These interventions also prevent bullying and aid in conflict resolution, in addition to improving emotional vocabulary.

Keywords: Anger, sadness, primary education, age, emotional vocabulary.

THE IMPACT OF SCIENTIFIC LANGUAGE ON THE TEACHING AND LEARNING OF GRADE 7 NATURAL SCIENCES

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Abstract
Questions have been asked about whether science is more special than any other subject in being less culture bound, and less subject to the usual differences between languages. At so many angles scientific language has been viewed as difficult because of its academic, authoritative and impersonal nature which makes it difficult for both teachers and learners to understand. This is an unfortunate reality because learners ought to develop a strong foundational understanding of scientific concepts in order to comprehend scientific knowledge and processes. Previous studies have shown how language acts as a possible barrier to scientific concept formation. Consequently, the current paper reports on a study to determine how the nature of scientific language impact on the teaching of grade 7 Natural Sciences. Guided by the socio-cultural theory as a framework the study adopted a qualitative case-study research approach. From two different schools in Johannesburg, four Natural Sciences teachers and their grade 7 Natural Sciences learners were purposefully selected to participate in the study. Each teacher was observed twice while teaching Natural Sciences to grade 7 learners and the observations were captured using Reformed Teaching Observation Protocol (RTOP). Each lesson observation was followed by semi-structured interviews to accord the teachers an opportunity to explain some of the episodes observed in the lessons. Data collected was subjected to constant comparative analysis. The results showed that both teachers and learners struggled with writing, pronouncing and spelling scientific terminologies regardless of their proficiency in the language of teaching and learning. The teachers indicated that their learners failed to understand the scientific concepts and processes when they explain to them in English. The lack of fluency in English reduced the participation of learners during the teaching and learning process particularly where teachers had zero tolerance for learners' use of home languages to answer questions. What came out strongly from the lesson observations was that whether learners were first or second English language speakers, the teachers' abilities to scaffold learning was essential to ensure science concepts were comprehensible to the learners. Concepts were more accessible to the learners in classrooms where the teachers utilised different ICT tools which lowered the impact of scientific language. The findings have implications for both pre-service and in-service teacher professional development programmes to equip teachers with the knowledge and skills for making science more comprehensible to the learners.

Keywords: Natural sciences, nature of scientific language, language of instruction, English second language speakers.

SECONDARY TEACHERS PERSPECTIVES ON FREE ONLINE PROGRAMS TO PROMOTE STUDENT ENGAGEMENT

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Abstract
It can be challenging for teachers to keep students engaged in a physical classroom, however, in a virtual setting it is augmented further (Mobile guardian, 2020). Households can be very distracting for students and teachers are unable to walk around and cannot see if students are engaged or distracted (Farah & Barnett, 2019; McNiff, 2021). In addition, teachers can feel intimidated and overwhelmed with

technology (Hertenstein, 2020; Schaffhauser, 2020). Teachers are struggling with virtual learning and have gotten little to no professional development on how to engage students in an online platform (Schwartz, 2020; Williams, 2021). This study will dive into various free online programs for virtual student engagement which will provide prospective from current teachers on the most to the least helpful program. These prospective will help provide professional development direction on which online program could be used to engage students in a virtual setting.

The 32 participants included current teachers in southeast Alabama. These participants were also enrolled in a master's of education program. The participants learned about various free online programs and were able to simultaneously implement those programs in their classroom. At the end of the semester students took an online survey asking which programs were least to most helpful for engagement, easiest to implementation, and programs they would like to know more about. Once the data was collected, descriptive statistics were used to analyze the results. The results showed the programs that were the easiest to implement were also the most helpful for engaging students. In addition, the programs they wanted to know more about were also the programs they stated were the least helpful were engaging students. A few implications of the study were at the time of the study all participants were learning and teaching virtually, this will affect the future usage as the future of virtual classroom settings is still undecided. In addition, the deep dive of each online program was limited due to the lack of time in the course.

Keywords: Student engagement, virtual learning, online learning, secondary education.

ASSESSING E-PORTFOLIO ACCEPTABILITY IN AN ONLINE COURSE

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Abstract
E-portfolios play an important role in the success of online courses in higher education. They help universities to provide a more effective and efficient teaching-learning process by enabling students to track their skills and proceed towards their future career goals. In view of the rapid expansion of e-portfolios in French universities, a challenging problem arises regarding its acceptance and use by higher education students, particularly in the context of online courses. Indeed, using new technology can be considered as a process that implies the evolution of judgment over time. To address this gap, the present study has two objectives. First, it explores the key factors of acceptability (before use) and acceptance (after first use) of the e-portfolio Karuta according to the literature and the Unified Theory of Acceptance and Use of Technology (UTAUT). Second, it aims to generate appropriate assumptions and validate research instruments for a new experiment (e.g., questions, items). This is a quantitative and qualitative survey with a descriptive scope. Data were collected from 10 Master students in pedagogical and digital engineering at Aix-Marseille University, France. The research instrument is a questionnaire consisting of open and closed-end questions including: 41 items using a 7 points Likert Scale, which covers Self-Regulated Online Learning (SRSOL), UTAUT's factors and the perceived enjoyment variable administered before and after use; 2 open questions to gather more explanations from participants about their reasons to continue to (or not to) use the e-portfolio in the future; and 1 question about their feelings regarding the reflexive activity implemented when they completed or used the e-portfolio within the Karuta tool. The results showed that students seem to have the intention to continue to use the e-portfolio as part of their learning process. Besides, it appears that performance expectancy, effort expectancy, social influence predict behavioral intention to use and to continue to use the e-portfolio.

Keywords: E-Portfolio, acceptability, acceptance, UTAUT, higher education, self-regulated learning.

PEDAGOGICAL EVALUATION PHASES – LESSON STUDY SURVEY

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Abstract
The results of international cooperation in the field of vocational education and training are reported in the Erasmus+ international project LS4VET (Lesson Study for VET, 2021) and the implementation of the lesson study theory of Stigler and Hiebert has been explored. Our pilot lesson study on classroom evaluation in primary schools fits into this line of research and explores further aspects of the theory. The project was launched in Hungary, in the academic year of 2021/2022.
Our action research was conducted in the fields of sciences, humanities, and physical education in Grades 5–8. We wanted to find out how assessment methods and tools in these areas are adapted to the age group, the situation, and the curriculum. We must highlight that the focus of the project was not on the measurement of the growth of the learners' learning ability, but rather on the teacher-student-student interactions. During the research, different lessons and lesson segments were visited and video recorded, then discourse analysis (Burgess and Cargill, 2013) – a new approach to content analysis – was applied to investigate the evaluation methods in the lessons.
Our main research questions are: (1) What are the consciously used evaluation methods? (2) What is the distribution of the evaluators? (3) Are there subject or science specific tools applied in the evaluation process? (4) How personal, supportive, and tactful is the evaluation? (5) What is the quality and quantity of verbal and non-verbal feedback? (6) What activities are emerged to support learners' self-evaluation skills?

Keywords: Lesson study, discourse, evaluation.

THE INFLUENCE OF ONLINE FORMATIVE ASSESSMENT IN EUCLIDEAN GEOMETRY ON THE ATTITUDES OF GRADE 11 LEARNERS

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Abstract
Formative assessment (FA) can potentially provide valuable insights into learners' conceptual knowledge of Euclidean geometry and contribute to the development of appropriate assessment activities which focus on developing a conceptual understanding of Euclidean geometry. Research indicates that geometry is an abstract yet crucial topic in the school Mathematics curriculum because it helps learners to develop logical thinking, problem-solving skills, deductive reasoning, and analytical reasoning. Due to the Covid-19 pandemic, teachers were forced to integrate technology to continue with teaching, learning, and assessing Mathematics. Following this, the purpose of this study was to determine the influence of online FA in Euclidean geometry on the attitudes of Grade 11 learners in a public school in South Africa. Learner attitudes contribute to performance in Mathematics. Attitudes are formed by the past experiences, observations, and imitations of learners who enter the mathematics classroom with their pre- and misconceptions. Assessing mathematics concepts anywhere facilitates individual assessment, and supports differentiated instruction of Mathematics, which ultimately can lead to an increase in using pedagogical approaches that are learner-centred. Therefore, technology in assessment plays a pivotal role in mathematics teaching and learning. This study was conducted using mixed research methods utilizing semi-structured interviews and a questionnaire to collect data. The participants that were purposively sampled in this study were 104 Grade 11 learners. This study was underpinned by Bandura's Self-efficacy theory derived from the Social Learning Theory. The main findings of this study revealed that learners enjoy online FA, they find it meaningful, it motivates them, and contributes to their self-confidence. The theoretical and practical implications of the findings are discussed in this research study.

Keywords: Online formative assessment, Euclidean geometry, online quizzes, learner attitudes.

PRE-SERVICE TEACHERS' CONCEPTIONS OF THE INTEGRATION OF SOCIOSCIENTIFIC ISSUES IN LIFE SCIENCES TEACHING

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Abstract
Debates have been going on regarding what the goals of science education are and how those goals could be achieved. Developing scientific literacy in learners has gained traction over the years among other goals. It has been documented that by engaging learners in socioscientific issues (SSIs) in the science classrooms learners acquire complex competencies and skills necessary for scientific literacy. Learners also get motivated to learn science and take up careers in science. The current paper reports findings from a qualitative case study which sought to determine pre-service teachers' conceptions of the integration of SSIs in Life Sciences teaching and learning. A total of 50 third year pre-service teachers enrolled for a Life Sciences methodology course at a South African University, were selected to participate. After covering a theme on SSIs in Life Sciences teaching and learning, the participants were asked to document their conceptions of SSIs and how argumentation could be used to teach SSIs in specific Life Sciences topics. Their submissions were subjected to content analysis. Two themes emerged: 1. Teachers' conceptions of the integration of specific SSIs when teaching controversial concepts in Life Sciences; and 2. Teachers' conceptions of argumentation as a suitable strategy in addressing SSIs in some Life Sciences topics. In addition to the previously found benefits of integrating SSIs such as developing learners' critical thinking skills, ability to make negotiations, and developing learners to make informed decisions, the pre-service teachers brought in a new angle. They showed how failure to teach SSIs could impact on the livelihood of humans as related to SSIs associated with the current COVID-19 pandemic and other diseases humans are grappling with such as cancer. Some brought in the role of SSIs in teaching the nature of science, an area neglected in many Life Sciences classrooms. Other participants mentioned how argumentation as a teaching strategy equips learners with life skills such as abilities to raise their opinions and stance in a world where most young people are failing to take criticism or challenges positively thereby resorting to suicide as an easy way out of challenging situations. The pre-service teachers' conceptions were based on real life experiences considering that they were also still young. There were some who did not conceptualise integrating SSIs in the positive manner as they argued that addressing such issues in the classroom would be intrusive. These findings have implications for both pre-and in-service teacher professional development.

Keywords: Argumentation, life sciences, pre-service teachers, socioscientific issues, teachers' conceptions.

INVESTIGATION OF THE EFFICACY OF THE NEW DEGREE PROGRAMME IN MECHANICAL ENGINEERING

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Abstract
In 2018, the Durban University of Technology (DUT) replaced the National Diploma in mechanical engineering with a Bachelor of Engineering Technology (BET). This paper explores the success of students enrolled in the BET programme, and compares it to the diploma programme. The BET was introduced in order to align with the new National Qualifications Framework (NQF). Considering that two cohorts of the BET programme have now graduated, it is an appropriate time to conduct a preliminary investigation into the efficacy of this new programme.
The average success rates and throughput rates of students registered on the new and old programs will be compared. This will concentrate on the success rates of the first two years of the BET and the first four semesters of the diploma, where the greatest overlap in content lies. In addition, modules that are similar in content will also be compared. The data for the research is readily available from DUTs' management information system (ITS). This study is a subset of a larger project, which will examine the structure of the BET and the effect on student success. The paper will also briefly describe this larger project, and the studies that will be undertaken.

Keywords: Engineering education, success, mechanical engineering programmes.

PHILOSOPHICAL GAMES IN PRIMARY EDUCATION: AN INTERDISCIPLINARY APPROACH

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Abstract

Philosophical games provide an innovative transformative structure in the learning process for all levels of formal education. The motivation is to provide elementary school teachers with an innovative methodology for Game-based-Learning of Philosophy/in Philosophy teaching. A combination and attentive collaboration of Philosophy, Art and games/ Game-based Learning provides new tools in approaching and solving the problems that education faces today. Since Game-based Learning constitutes a strong trend in technologically enhanced learning, is the, where/with the employment of gaming elements both in learning content and learning pathways, the proposed methodology leads to a series of novel applications about teaching philosophy that enable young agents to cultivate hypothetic-deductive and critical thinking with a positive attitude towards others and developing feelings of constructive antagonism. The teaching scenario proposed aims at cultivating hypothetic – deductive and critical thought, moreover, enhances the linguistic ability in the vocabulary of ancient Greek philosophy as well. The scenario is part of a game suite entitled "Entering the Socratic school" and targets 10–12-year-old children. It is easy to implement on any digital platform with open-source tools used by almost every teacher. The game elements rely on the structure of the learning content rather than on the digital tools themselves. The methodology consists in designing a concept map and defining the game narrative, the game levels and transitions between levels, the mechanics to be used, such as polls, badges, and leaderboards. Online activities include digital games such as quizzes and crossword puzzles, student generated comic stories, and a digital guide. They are complemented by physical activities involving movement and dialogue using fishbowl techniques and Socratic circles. The proposed teaching scenario will be implemented in the classroom in the following academic year and our work team applies interdisciplinary approaches inspired by at least three different fields of expertise.

Keywords: Socratic games, gamified learning, philosophy, art, Moodle.

SPEAKING IN A LANGUAGE VERSUS SPEAKING A LANGUAGE IN COMMUNICATIVE COMPETENCE ATTAINMENT

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Abstract

This article aimed to promote speaking skill as part of communicative competence acquisition, under the auspices of Communicative Language Teaching approach in English as a First Additional Language in intermediate phase (Grade 4-6) in Free State province township primary schools. Moreover, this article aimed to ensure that proficient learners in English are produced for the senior phase, and that the conducive communicative environment is created as well as to be sustained by all stakeholders, to enable the learners' communicative competence acquisition, hence English is adopted as the Language of Learning and Teaching (LoLT) in most Free State township primary schools. In the same vein, this article seeks to promote the adoption of English as LoLT in foundation phase, for better communicative competence acquisition in intermediate phase. English beyond the classroom approach, and English across the curriculum, are the two approaches advocated by this article to make communicative competence to be the goal and the responsibility of all the stakeholders inside and outside the teaching and learning classroom environment. For the intensive and the extensive knowledge regarding speaking as part of communicative competence, scholarly articles were consulted by the researcher.

Keywords: Speaking in a language, speaking a language, speaking skill, communicative competence.

INVESTIGATING CHALLENGES FACED BY INTERMEDIATE PHASE EDUCATORS IN THE TEACHING OF READING IN ENGLISH FAL. A CASE STUDY OF SELECTED PRIMARY SCHOOLS IN NYLSTROOM CIRCUIT

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Abstract
Reading challenges by learners has been a widely researched topic by a lot of researchers. Poor teaching of reading by educators result in learners not being able to read. English is mostly used as a language of teaching and learning and that has influenced the rational for this research project. The purpose of this study was to investigate challenges faced by the English Intermediate Phase educators. learning cannot be successful without mastering reading as it is a basic tool for learning, it is not only in South Africa whereby English educators are not English speakers, yet learners are expected to master to English. Educators seem not to have good instructional practices as learners struggle to understand in English on its own. The study used a qualitative research approach with case study research design. The researcher used purposive samples, and selected 5 primary schools in which the population comprised of English Departmental Heads, and 3 English educators from each of the selected primary schools. Data was collected through semi-structured interviews, documentations and note-taking. The theory of Rosenblatt, who believes in a relationship between the text and the reader, has been followed on the premise that, what the reader already knows will determine how much he interprets or understands in the text. Thematic approach was used to analyse data. The study found that teachers who are not thoroughly trained are unable to produce good performing learners and that has influenced the whole system of education. Overcrowded classes to practice good reading strategies, no proper reading assessment strategies, and no monitoring and moderation of reading by SMT. The study recommended extensive training of and teachers through in-service-training for lengthier periods, clear guidelines of teach reading, monitoring and moderation. Mostly, educators indicated their desire to be trained in technology as learners prefer it rather than books and chalkboard.

Keywords: Teaching strategies, educators reading, learners, schools.

ORGANIZATIONAL ISSUES

A PEDAGOGICAL APPROACH FOR SOCIO-CULTURAL INCLUSION: A STUDY ON IMMIGRANT ENTREPRENEURS IN FINLAND

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Abstract

According to the United Nations in 2019, the number of migrants worldwide reached 272 million and the wave of migration is expected to increase after the pandemic. As the number of immigrants increases, a strategy for their socio-cultural inclusion becomes essential. Finland is a Nordic country with a limited population that considered culturally, ethnically, and linguistically homogeneous, however, it is gradually changing as the number of immigrants increases. Promoting the integration of migrants and increasing their access to public services, labor market, private sector and opportunities in the host country is included in the strategies of the European Commission. Regarding the importance of entrepreneurship in the cultural inclusion of immigrants, this case study was conducted with an emphasis on the role of information technology in facilitating entrepreneurship for immigrants in Finland. Accordingly, a group interview was conducted to understand the challenges that migrants encounter in obtaining the information that they need. The results showed that immigrant entrepreneurs with different fields and backgrounds had difficulties finding some required information on Finnish websites. Some information or sources of information are known to locals while unknown or inaccessible to immigrants. In addition, participant of the study expected more variety and interaction in content on Finnish websites. This study proposes technological pedagogical content design (TPCD) as a systematic approach to design websites with more attention to multicultural users. TPCD assumes immigrants as learners who need to learn the new knowledge and skills in the host country. It utilizes pedagogical principles to define the needs of immigrants to clarify goals, create and organize content, and design web pages.

Keywords: Socio-cultural inclusion, immigrant entrepreneur, TPCD, user-centered design.

HOW MEANINGFUL WORK AND SOURCES OF MEANING CHANGED DURING THE PANDEMIC: AN EXPLORATORY STUDY

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Abstract

The COVID-19 pandemic has affected many aspects of our life leading to a completely new world, increasingly complex and uncertain. This is also evident in the workplace, especially on how employees experience and perceive their work. Indeed, it is not surprising that current critical reflections in the study of work and organizations give attention on the challenges on individuals' wish for meaningful experiences at work. The current debate focuses on how employees can get lost in terms of their sense of work in the face of job demands, responsibilities and working hours. From here, it is central that in the face of new working methods and conditions, organizations behave to guarantee the quality of work and the degree to which work can be a source of meaning. This study has exploratory purposes and intends to investigate the relationship between the dimensions of quality of work and the dimension of meaningful work in the context of the post-pandemic. The data were obtained with a pre-test–post-test design, i.e., before and after restrictions due to the pandemic, through a survey administered online to about 145 workers. We investigated (a) the level of quality at work considering the dimensions of training, safety and communication at work, and (b) the Meaning in Work construct and the related sources of coherence, significance, purpose and belonging. We analysed data via the Structural Equation Modelling to explore the predictive role of job quality for meaning in work dimensions. The results indicate that the latent variable of job quality, described by the observed dimensions of organizational safety and training

resources, at time 1 affect meaning in work dimensions respectively at time 1 and time 2. The results of the present study are relevant both for directing further studies on the topic of meaningful work and for organisations wishing to foster meaningful work and link sources. In the context of top-down work redesign process, our results offer initial implications about the role of job quality for sustaining employees' wish for meaning in their work. The present study represents one of the limited studies on the sources of meaningful work and posit initial insights on how to foster meaningful work. Moreover, this happens in the context of the post-pandemic, supporting initial comprehension about whether organizations can support individuals' quest for meaning in this uncertain time.

Keywords: Meaningful work, Source of meaning in work, COVID-19.

A NARRATIVE INQUIRY INTO THE SOLIDARITY EXPERIENCED BY MYANMAR STUDENTS IN KOREA

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Abstract
The purpose of this study is to explore Myanmar students' experience of solidarity in Korean civil society and figure out the meaning of their experience. This study adopted Narrative inquiry among various qualitative methods, and in-depth interview is used for data collection. It seeks to discover the meaning of solidarity using the narratives lived and told by two research participants studying in Korea. As a result, three specific meanings embedded in the participants' narratives were founded. First, recognize the need for solidarity due to the military dictatorship. Second, experience solidarity that transcended boundaries. Third, have will for another solidarity toward others. This study expects to reaffirm the importance of solidarity in the international community for Myanmar people and suggests a desirable direction for sustainable solidarity.

Keywords: Solidarity, Myanmar students, Korea, narrative inquiry.

A STUDY ON DEVELOPMENT OF KOREAN NATIONAL POLICIES FOCUSED ON MULTICULTURAL YOUTH'S MENTAL HEALTH

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Abstract

South-Korea has been demographically transformed into a multicultural society for recent decades. Accordingly, Korean government has prepared the societal transformation through law and policy making. However, these laws and policies need to be reviewed in terms of multicultural counseling, which was recognized as one of the most necessary policies by immigrants. In this sense, this research intends to focus on multicultural youth's mental health while tracking and comparing the change of main multicultural policies like Multicultural Family Policy, Multicultural Education Policy, and Youth Policy. Therefore, this research can help expand the depth and width of discussion for the next 5-years policy plan (2023-2028) by measuring the past and current Korean policies in terms of youth's mental health.

Keywords: Multicultural family policy, multicultural education policy, youth policy, multicultural youth, mental health.

PROFESSIONAL PRACTICES OF SCHOOL SOCIAL WORKERS IN PROMOTING EQUITY IN TIMES OF COVID 19 PANDEMIC

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Abstract
Children and young people from different social and cultural backgrounds, nationalities, ethnicities access school, but they have not had the same opportunities for school success and to see their right to education and other human rights guaranteed. Intervening with this diversity in a positive way means making difference, not synonymous with stigmatization and school and social exclusion, but rather with school and social inclusion, through the promotion of equity and social justice. The covid 19 pandemic, by electing distance learning, expanded and intensified the risks of dropout and failure of students with a more fragile relationship with the school, accentuating social inequalities and other inequalities and not allowing the multiplicity of their needs to be satisfied, in the sense of its integral development. The increased risk of school dropout and failure is more accentuated in some segments of the population, namely, those with greater social vulnerabilities. The government wanted to respond to the problems of absenteeism and school dropout, child poverty, intra-family violence and mental illness, which were aggravated by the covid-19 pandemic, giving guidance to managers, teachers and technicians to reinvent the role of the school in times of physical distance, quarantine and isolation. In this reinvention, the intervention strategies of the multidisciplinary teams of the schools were highlighted in the identification, signaling and monitoring of risk/danger situations for children and young people and in the articulation with the competent authorities and the community institutions, in promoting the right to education and social protection of children and young people. In these teams, social workers, with a diversified and multi-referenced academic scientific and technical background, have the necessary conditions to intervene in the realization of the right to education because they are able to bring together and promote the collaboration and communication that is essential between knowledge and educational actors for the elaboration of a diagnosis and respective intervention plan, which should focus on the three main domains of the ecological model of assessment in risk/danger situations: the child's developmental needs, the parental skills of the families and the family and ecological factors.
Focusing on a qualitative approach, through interviews with social workers who are part of multidisciplinary teams in school clusters, we sought to know how these professionals, in times of pandemic, perceive their functions and tasks, their professional practices and its potential in making the right to education effective and in combating school and social inequalities.

Keywords: Professional practices, school social workers, covid 19 pandemic, social inequalities, equity.

THE IMPACT OF THE PANDEMIC ON SOCIAL-EMOTIONAL LIFE OF YOUNG ADULTS: AN EXPLORATORY STUDY

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Abstract
The SARS-Cov-2 coronavirus and COVID-19 pandemic has disordered peoples' everyday life due to the extended measures of transmission restriction. For "young adults", that is for people in the age range between 19-24, the impact of pandemic may be of greater importance, given that this early years of adulthood is a critical stepstone for their further social and emotional development. Thus, it is interesting to focus on them during those hard times. The aim of the study was to investigate the views of young adults, firstly, on their social life and its disruption due to the coronavirus and, secondly, on their emotional life. In this context, a quantitative research has been conducted based on a questionnaire, that has been designed by the research team. The questionnaire included 37 questions (likert, open ended, and multiple choice). The study was conducted via internet and in total 285 young individuals have participated. Regarding the main results of our study, it was found that watching movies seem to have a positive effect in help passing time and coping with boredom. Regarding the impact of pandemic on participants' emotional life, it was found that during lockdown, fear -specifically fear for the future and fear for their beloved ones- was the feeling mainly experienced by the young adults. It is notable that after the lockdown the fear of the future and the fear for the beloved ones is still a dominant feeling. Moreover,

it was found that social and emotional impact go hand by hand. Specifically, it was also found that, controlling for age effect, participants' after lockdown feelings such as stress, sorrow and fear for their beloved were associated to whether entered University before or during pandemic. A holistic view of social and emotional impact of pandemic, challenges emerged for young adults who faced extended restrictions and implications of our results will be discussed.

Keywords: COVID-19, young adults, social-emotional life.

RECONFIGURING & RESHAPING WORK INTEGRATED LEARNING (WIL) FOR EMPLOYABILITY BEYOND COVID

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Abstract
Higher education institutions have become increasingly focused on the quality of teaching and learning, and the provision of high-quality educational experiences for students in various learning contexts. Well-designed and structured work-integrated learning is beneficial to the student, the academic institution, the employer and the community. Graduate employability is a complex concept, one which has expanded in recent years to encapsulate a diverse range of skills, attributes, and other measures including active citizenship. Continued improvement of methodologies in teaching and learning is key to the development of any society. It is therefore essential to governments for devising strategies to compete with the rising global competition in times of economic uncertainty. But progress cannot be created in a vacuum. It requires connected efforts, cross-border discussions and vigorous assessments. Thus it is important to highlight forward thinking and future-driven strategies for smooth transitioning from education to the labour market and identify factors impeding skills performance.
WIL is significant in exposing undergraduates to the required employability skills to function effectively in their chosen profession. This poses a challenge to higher education to design and deliver curriculums that meet these expectations. This paper discusses key points that include creating a culture that fosters partnerships between higher education and industry, designing curriculum which is responsive to the needs of both community and industry, as well as reviewing key graduate and labour market data to inform long term employability strategies. Covid-19 has impacted WIL, remote WIL experiences and the contribution that has been made to enhance employability outcomes for graduates now and post Covid.

Keywords: Curriculum design, employability, skills development, partnership, work integrated learning.

SCHOOL LEADERSHIP DURING COVID-19: EMOTIONALLY INTELLIGENT CRISIS MANAGEMENT

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Abstract
The COVID-19 pandemic presented rapid, unpredictable shifts in education, which had rippling effects on school leaders' responsibilities. In the early stages of the pandemic, school leaders throughout the United States, and the rest of the world made the strategic decision to transition to remote learning in adherence to CDC guidelines. This decision presented critical and immediate challenges for school leaders to manage their institutions. Emotional intelligence (EI) is well documented in the literature as a contributor to leadership effectiveness. We considered the novelty of the pandemic and the myriad of changes that accompanied it. To this end, we conducted a qualitative study to learn how emotionally intelligent school administrators leveraged EI in their daily leadership during the Covid-19 pandemic. A sample of eight emotionally intelligent K-12 principals from a larger study on school leadership across North Carolina was selected for analysis. We utilized Goleman's emotional intelligence model to frame

our analysis of principals' emotionally intelligent leadership. Four coders analyzed semi-structured interviews through a series of open coding followed by axial coding techniques. The findings revealed that emotionally intelligent school principals across North Carolina generally displayed key emotional competencies that supported self-awareness, self-management, social awareness, and relationship management. In their crisis leadership during the pandemic, the principals attended most to relationship management. Given that EI is known to positively impact school leadership, these findings can help us understand how it works in practice to lead schools during difficult times. This work adds a US perspective to current education conversations that aim to unpack the COVID-19 experience, by providing practical knowledge from principals rated high in EI. Our work has implications for professional development and principal preparation programs as they forge forward to prepare principals for these unpredictable experiences.

DIGITAL TRANSFORMATION OF UNIVERSIDADE DE SÃO PAULO: FROM FACE-TO-FACE TO VIRTUAL LESSON

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Abstract
Online learning has been around for a while, but it's never been more important than it was in 2020 and 2021. While many students have been able to complete their degree requirements, the pandemic has presented new challenges for educators, students, and administrators alike. E-Aulas (Virtual Lesson in Portuguese) is a platform that helps teachers, students, and colleges adapt to the new challenges presented by COVID-19. The platform helped the management of the Universidade de São Paulo (USP) undergo a process of digital transformation to offer online classes for students. USP has served students since 1934 and is a leading educational institution in Brazil.
The platform, which enabled professors to upload, with automatic metadata generation, registration, storing, and streaming video lessons, was implemented in 2012 with the aim of serving professors and students at USP. This platform, developed by a research group at the USP Polytechnic School, is currently managed by the pro-rectory of undergraduate studies. It can be used to support new teaching methodologies such as Flipped Classroom or Blended Learning, or for students to review face-to-face recorded lessons or as supplemental material for teacher' classes. Before the pandemic, there were several e-Aulas users who used the platform on a regular basis. However, during the pandemic, this number increased dramatically.
During the period 2020-2021, there were an average of 1.030 videos published per month, and 91.660 new users. There were as well 95 million hits during this same period, that is an average of 7 million accesses per month. E-Aulas has helped USP to make the transition to remote learning much easier. Therefore, it's clear that E-Aulas has been an invaluable resource for teachers who had to adapt their lessons to accommodate remote learning during the pandemic. In this case study we'll look at how E-Aulas helped USP navigate COVID-19 and still modernize the teacher methodology, enabling the use of learning active methodologies, by providing a safe way for educators to teach classes online while still maintaining high quality standards and student engagement levels.

INTENTIONAL SCHOOL LEADERSHIP IN UNCERTAIN TIMES

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Abstract

In this study of elementary and secondary school administrators, interviews were conducted to determine effective strategies before, during, and after online learning during the pandemic. California public schools began whole school online learning during March 2020 and most schools returned to in person learning one year later in 2021. Challenges during online learning included providing sufficient technology to all students, the online learning platform, and academic rigor. When students returned to school one year later many students suffered academically and socially. School leaders were required to refocus and plan accordingly. Administrators shared their strategies and philosophy for success in times of continued uncertainty.

Keywords: Administrators, pandemic, California, online learning, strategies.

WORKSHOPS

TEACHERS AND STUDENTS

EXCESSIVE ENTITLEMENT: WHAT IS IT? WHY IS IT IMPORTANT TO MIRROR IT?

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Abstract
Purpose, background and key points: This workshop introduces the notion of "excessive entitlement" to provoke the participants to examine how entitled feelings are triggered in the discursive context of their practice. Excessive entitlement is expecting reward in excess of what one deserves hindering people from taking responsibility for their own actions, learning and change. This is a theme that has received scant attention in literature on teaching and teacher education although it is a very potent force that needs to be reckoned with (Ratnam & Craig, 2021). Feelings of entitlement among teachers and faculty make them hold rigidly to 'inherited script' and constrain the development of the kind of flexibility needed to respond to the emergent futuristic needs of learners in this globally and technologically disruptive era.
Methodology and outcome: Through thought provoking episodes and questions the workshop invites participants to uncover and name the sources of oppression that they experience in the workplace, sometimes as victims and at other times, as perpetrators of it and how excessive entitlement begets undesirable work behavior such as competitiveness, selfishness and aggression hampering relationships and health of the institution. This process is meant to bring to consciousness the presence of excessive entitlement in the self and others, its pernicious influence on social relationships, learning and wellbeing in the workplace and consider ways in which this malignant issue can be addressed.
Participants: 30-40 teachers, teacher educators, school administrators and company human resource managers.

Keywords: *Excessive entitlement, malignant issue, discursive context, teacher education, institutional health.*

References

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HOW TO DEVELOP DIGITAL CITIZENSHIP EDUCATION? – A WORKSHOP FOR FOREIGN LANGUAGE EDUCATORS

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Abstract
Digital Citizenship Education (DCE) has emerged as an international priority. As a result, we aim to propose a workshop on implementing teaching and learning practices and developing DCE in Foreign Language Learning (FLL) classrooms.
The workshop is an opportunity to develop the participants' digital literacy by putting in evidence the importance of oriented educational practices and the creation of unit plans and pedagogical resources for the development of DCE in FL education.

In addition, it seeks to discuss the concept of DCE and share practices, methodologies and resources to improve professionals' knowledge. The participants will be able to empower younger citizens to participate actively and responsibly in a digital society and to foster their skills of using digital technologies effectively and critically.

The workshop would consist of a 45-minute session, divided into three parts:

- a brief introduction to the concept of DCE in FLL and an overview of the activities of the workshop (10 minutes);

- group-work in which the participants analyse teaching units developed by the authors, within an Erasmus+ project, to be used in FLL classrooms for different school levels, following specific guidelines (20 minutes);

- presentation and discussion of the analysis of the teaching units by each group (15 minutes).

The workshop addresses in-service and pre-service teachers, as well as teacher trainers or researchers. It is designed in a flexible and context-sensitive way to enable participants from diverse educational contexts in different countries to attend. The number of participants should be limited to 25.

Keywords: Digital citizenship, education, foreign languages, teaching, pedagogical resources.

PROJECTS AND TRENDS

CAPOEIRA'S CONTRIBUTION TO ETHNIC, CULTURAL AND EDUCATIONAL ISSUES

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Abstract
In Brazil, Capoeira is present in the country's history, culture, education and in the schooling process. Today, it is part of the national heritage, integrates the formal Physical Education curriculum of the public network of the State of São Paulo (CEF-SP), of private schools, is an extracurricular activity in several schools and is present at the university as a content of Physical Education courses. School Physical Education was conceived in the treatment of culture related to bodily aspects that manifest themselves in different ways: games and games, gymnastics, dances, sports and fights. In this way, Capoeira was listed as the content of Physical Education classes, acquiring new pedagogical contours and methodological treatments. Thus, this proposal aims to work strategies for dealing with different contents that make up the universe of Capoeira as a content of school Physical Education. In the didactic part, strategies, methods and styles of teaching, playful characteristics, as well as the posture in the teaching process will be addressed. In this sense, we had as a starting point the understanding of Capoeira based on commonly discussed topics, which allowed us to establish the following axes of work: Historicity, Specific Movement, Musicality, Play, Body Language. Once the axes of work were determined, we experienced the organization and systematization of these contents, based on activities and teaching dynamics. Thus, it is expected to promote strategies that make possible the treatment of Capoeira as a content of school Physical Education in the international scenario, thus configuring a rich pedagogical process, based on a plural and liberating education.

Keywords: Capoeira, scholar physical education, teaching practice, educational issues.

AUTHOR INDEX