



THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

**18th Annual International Conference on
Information Technology & Computer
Science**

16-19 May 2022, Athens, Greece

Edited by
Panagiotis Petratos & Olga Gkounta

2022

18th Annual International
Conference on Information
Technology & Computer Science
16-19 May 2022, Athens, Greece

Edited by Panagiotis Petratos &
Olga Gkounta

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Preface

This book includes the abstracts of all the papers presented at the *18th Annual International Conference on Information Technology & Computer Science* (16-19 May 2022), organized by the Athens Institute for Education and Research (ATINER).

A full conference program can be found before the relevant abstracts. In accordance with ATINER's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ATINER's many publications only after a blind peer review process.

The purpose of this abstract book is to provide members of ATINER and other academics around the world with a resource through which they can discover colleagues and additional research relevant to their own work. This purpose is in congruence with the overall mission of the association. ATINER was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world can meet to exchange ideas on their research and consider the future developments of their fields of study.

To facilitate the communication, a new references section includes all the abstract books published as part of this conference (Table 1). I invite the readers to access these abstract books –these are available for free– and compare how the themes of the conference have evolved over the years. According to ATINER's mission, the presenters in these conferences are coming from many different countries, presenting various topics.

Table 1. *Publication of Books of Abstracts of Proceedings, 2011-2022*

Year	Papers	Countries	References
2022	68	23	Petratos P and Gkounta O (2022)
2021	36	19	Papanikos (2021)
2020	33	17	Papanikos (2020)
2019	34	13	Papanikos (2019)
2018	24	10	Papanikos (2018)
2017	47	21	Papanikos (2017)
2016	34	12	Papanikos (2016)
2015	33	18	Papanikos (2015)
2014	30	21	Papanikos (2014)
2013	22	16	Papanikos (2013)
2012	26	15	Papanikos (2012)
2011	25	14	Papanikos (2011)

It is our hope that through ATINER's conferences and publications, Athens will become a place where academics and researchers from all over the world can regularly meet to discuss the developments of their disciplines and present their work. Since 1995, ATINER has organized more than 400 international conferences and has published over 200 books. Academically, the institute is organized into 6 divisions and 37 units. Each unit organizes at least one annual conference and undertakes various small and large research projects.

For each of these events, the involvement of multiple parties is crucial. I would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ATINER for putting this conference and its subsequent publications together. Specific individuals are listed after the Editors' Note.

Gregory T. Papanikos
President

Editors' Note

These abstracts provide a vital means to the dissemination of scholarly inquiry in the field of Information Technology & Computer Science. The breadth and depth of research approaches and topics, such as Cybersecurity; Data Analytics; Artificial Intelligence; STEAM and Sciences Education; and many more, represented in this book underscores the diversity of the conference. This diversity is of great value in an increasingly international field.

ATINER's mission is to bring together academics from all corners of the world in order to engage with each other, brainstorm, exchange ideas, be inspired by one another, and once they are back in their institutions and countries to implement what they have acquired. The 18th Annual International Conference on Information Technology & Computer Science accomplished this goal by bringing together academics and scholars from 23 different countries (Albania, Brazil, Bulgaria, Cyprus, Finland, France, Germany, Hong Kong, India, Israel, Italy, Japan, Kenya, Philippines, Poland, Portugal, South Africa, Sweden, Switzerland, Turkey, UAE, UK, and USA), which brought in the conference the perspectives of many different country approaches and realities in the field.

Publishing this book can help that spirit of engaged scholarship continue into the future. With our joint efforts, the next editions of this conference will be even better. We hope that this abstract book as a whole will be both of interest and of value to the reading audience.

Panagiotis Petratos & Olga Gkounta
Editors

**18th Annual International Conference on Information
Technology & Computer Science, 16-19 May 2022, Athens,
Greece**

Organizing & Scientific Committee

All ATINER's conferences are organized by the Academic Council. This conference has been organized with the assistance of the following academic members of ATINER, who contributed by reviewing the submitted abstracts and papers.

1. Gregory T. Papanikos, President, ATINER & Honorary Professor, University of Stirling, U.K.
2. Panagiotis Petratos, Vice President of Administration and ICT, ATINER & Fellow, Institution of Engineering and Technology & Professor, Department of Computer Information Systems, California State University, Stanislaus, USA.
3. Abdel-Badeeh M. Salem, Professor, Ain Shams University, Egypt.

FINAL CONFERENCE PROGRAM

18th Annual International Conference on Information Technology &
Computer Science, 16-19 May 2022, Athens, Greece

PROGRAM

Monday 16 May 2022

09.00-09.30
Registration

09:30-10:00
Opening and Welcoming Remarks:

- **Gregory T. Papanikos**, President, ATINER
 - **John Spiridakis**, Co-Editor, Athens Journal of Education & Professor, St. John University, USA.
-

10:00-12:00 TIME SLOT 1 - MORNING PRESENTATIONS

Coordinator: Olga Gkounta, Researcher, ATINER

1. **Tarek Saadawi**, Professor, City University of New York, USA.
Title: Cyberattacks Protection and Challenges.
 2. **Nada Matta**, Professor, University of Technology of Troyes, France.
Nour Matta, PhD Student, University of Technology of Troyes, France.
Title: Evolution Discovery in Textual Data.
 3. **Kosmas Pipyros**, Senior Lecturer, CTL Eurocollege, Cyprus.
Sotiroula Liasidou, Assistant Professor, Cyprus University of Technology, Cyprus.
Title: Hotels' Cybersecurity Risks Assessment: Proposing a New Cybersecurity Framework.
 4. **Mihail Mateev**, Assistant Professor, University of Architecture, Civil Engineering and Geodesy, Bulgaria.
Title: Creating Modern Data Lake Automated Workloads for Big Environmental Projects.
 5. **Thomas Fehlmann**, Senior Researcher, Euro Project Office, Switzerland.
Title: The World Formula.
-

12:00-13:30 TIME SLOT 2 – NOON PRESENTATIONS

Time Slot 2a Coordinator: Leticja Gusho , Associate Professor, Tirana University, Albania	Time Slot 2b Coordinator: Olga Gkounta , Researcher, ATINER
<ol style="list-style-type: none"> Mervyn Wighting, Professor, Regent University, USA. <i>Title: Measuring Relationships between Children and their Teachers.</i> Cheryl McCarthy, Professor, Flagler College, USA. <i>Title: A Flipped College Classroom Approach to Facilitate Spanish Oral Language Skills.</i> Adrienne Coleman, Director of Equity and Inclusion, Illinois Mathematics and Science Academy, USA. <i>Title: A Path towards Advancing Educational Equity and Excellence.</i> Daniel Bosmans, Lecturer, University of Teacher Education – BEJUNE, Switzerland. Vincent Fivaz, Deputy Headteacher, Cercle Scolaire Le Locle, Switzerland. Françoise Casciotta, Headteacher, Cercle Scolaire Le Locle Cercle Scolaire Le Locle, Switzerland. <i>Title: The Autonomous Acquisition of Transversal Competencies by Primary School Children through the Use of Pedagogical Scenarios.</i> 	<ol style="list-style-type: none"> Nick Linardopoulos, Associate Professor, Rutgers University, USA. <i>Title: Reimagining the Basic Communication Course for the Post-COVID-19 Environment.</i> Randa Bou-Mehdi, Senior Instructor, American University of Sharjah, UAE. <i>Title: Shifting from Hybrid back to “Traditional”: University Students’ Attitudes towards the Different Modes of Teaching and Learning.</i> Lalitha Jawahar, Lecturer, Fatima College of Health Sciences, UAE. <i>Title: Student Preparedness to Transition to E-Learning during COVID-19 in the UAE from Learner Perspectives at a Health Science College. (Monday)</i> Natoya Thompson, Lecturer, Fatima College of Health Science, UAE. <i>Title: Student Academic Performance before COVID-19 and after Using Distance Learning in English at a Health Sciences College in the Middle East.</i>

13:30-15:00 TIME SLOT 3 – NOON PRESENTATIONS

Time Slot 3a Coordinator: Rosa Jimenez , Associate Professor, University of San Francisco, USA.	Time Slot 3b Coordinator: Olga Gkounta , Researcher, ATINER
<ol style="list-style-type: none"> George Kamberelis, Professor, Western Colorado University, USA. <i>Title: Interest-Based, Purpose-Driven, Responsive Literacy Learning and Teaching.</i> Karren Timmermans, Professor, Pacific University, USA. <i>Title: Vision & Reading Readiness.</i> Lena Bostrom, Professor, Mid Sweden University, Sweden. Goran Bostedt, Associate Professor, Mid Sweden University, Sweden. <i>Title: Students Study Motivation – A Question for All Actors in Daily Work in School.</i> Naomi Kruger-Arram, Lecturer, Michlalah Jerusalem Teachers’ College and Hebrew University Jerusalem, Israel. <i>Title: Our Inner Note-Taker – How we Search for Information in Previously-Read Texts.</i> 	<ol style="list-style-type: none"> Erik Hedlund, Associate Professor, Swedish Defence University, Sweden. <i>Title: An Education Model for Producing Officers with Ambidextrous Competences and Skills.</i> Fernanda Yamamoto, Postdoctoral Researcher, University of São Paulo, Brazil. <i>Title: Professional Development of Teachers of Integrated Technical/Vocational Training in Secondary School.</i> Sara Dias-Trindade, Teacher, University of Coimbra, Portugal. <i>Title: Technologies and Digital Competences in Portuguese Education: History of their Integration in Pedagogical Practices since the Beginning of the 20th Century.</i>

15:00-16:30
Lunch

16:30-18:30 TIME SLOT 4 – AFTERNOON PRESENTATIONS

Time Slot 4a Coordinator: Kostas Spyropoulos	Time Slot 4b Coordinator: Olga Gkounta, Researcher, ATINER
<ol style="list-style-type: none"> 1. Besmira Lahi, Chair, University of New York in Tirana, Albania. <i>Title: Students' Mental Health and Wellbeing While Living in Pandemics in Albania.</i> 2. Melpomeni Papadopoulou, Associate Professor, University of Tours, France. <i>Title: E-Learning in Adults Education: The Approach of "Integrative" Distance.</i> 3. Nurit Chamo, Head, Levinsky College of Education, Israel. <i>Title: When VUCA Met the Principal Education Programme During COVID-19.</i> 4. Liat Biberman-Shalev, Lecturer, Levinsky College of Education, Israel. <i>Title: Activating Research Project for Coping with Crisis in the Context of Teacher Education.</i> 5. Keitha Burnett, Coordinator, Gulliver Preparatory School, USA. <i>Title: The Power of Purposeful Portfolios in Social Science: An Inclusive Approach to Comprehensive Teaching.</i> 6. Carolyn King, Programme Leader; Religion, Culture & Society (BA & MA Courses), University of Central Lancashire, UK. <i>Title: Religion, Culture & Society: the Key to Understanding Diversity.</i> 	<ol style="list-style-type: none"> 1. Norbert Tusnio, Lecturer, The Main School of Fire Service, Poland <i>Title: Analysis of Capability of Air Pollution Monitoring from an Unmanned Aircraft.</i> 2. Florian Pramme, Research Assistant, Ostfalia University of Applied Science, Germany. <i>Title: Accelerating Production Code through Code Analysis and High-Level Synthesis Using FPGA.</i> 3. Suzan Yesil, PhD Candidate, Texas Tech University, USA. <i>Title: The Role of Parental Involvement as A Psychosocial Protective Factor As Well As An Intervention In Pre/Peri/Post COVID-19 Pandemic Traumatic Stress Recovery In University Students.</i> 4. Paulette Hebert, Professor, Oklahoma State University, USA. <i>Title: Considering the Vocabulary of Internationalization: A Content Analysis across Academic Units at One University.</i> 5. Stephen Wanger, Associate Professor and Don and Cathey Humphreys Endowed Chair, School of International Studies, Oklahoma State University, USA. Tong Wu, PhD Candidate, Oklahoma State University, USA. <i>Title: Higher Education and the Tensions Between Globalism, Nationalism and Nativism: The Pendulum Swinging.</i>

21:00-23:00
Greek Night

Tuesday 17 May 2022

08:00-11:00 TIME SLOT 5 – MORNING PRESENTATIONS

Time Slot 5a Coordinator: Kostas Spyropoulos	Time Slot 5b Coordinator: Olga Gkounta, Researcher, ATINER
<ol style="list-style-type: none"> Eva Anderl, Professor, Munich University of Applied Sciences, Germany. <i>Title: Fostering IT Competencies in Business Students through IT-Based Business Development Projects.</i> Maria Rosaria D’Acierno Canonici, Associate Professor, Parthenope University of Naples, Italy. <i>Title: Music and Art: Two Underestimated Disciplines.</i> Elize Vos, Associate Professor, Northwest University, South Africa. <i>Title: The Newspaper as a Multimodal Tool in Developing Self-Directed Reading.</i> Deon Vos, Senior Lecturer, North West University, South Africa. <i>Title: The Influence and Value of Technology in the Education Systems of South Africa and Russia.</i> Lydia Komodromou, PhD Student, University of Cyprus, Cyprus. <i>Title: The Application of Differentiated Teaching and Learning: Potential Challenges and Obstacles.</i> Indrit Enesi, Professor, Polytechnic University of Tirana, Albania. <i>Title: Evaluation of the 3D Reconstruction Performance of Objects in Meshroom: A Case Study.</i> 	<p>Old and New-An Educational Urban Walk The urban walk ticket is not included as part of your registration fee. It includes transportation costs and the cost to enter the Parthenon and the other monuments on the Acropolis Hill. The urban walk tour includes the broader area of Athens. Among other sites, it includes: Zappion, Syntagma Square, Temple of Olympian Zeus, Ancient Roman Agora and on Acropolis Hill: the Propylaea, the Temple of Athena Nike, the Erechtheion, and the Parthenon. The program of the tour may be adjusted, if there is a need beyond our control. This is a private event organized by ATINER exclusively for the conference participants. Some participants have videotaped the event. Click here for an example.</p>

11:00-13:00 TIME SLOT 6 – MORNING PRESENTATIONS

Time Slot 6a Coordinator: Olga Gkounta, Researcher, ATINER	Time Slot 6b Coordinator: Nick Linardopoulos, Associate Professor, Rutgers University, USA.
<ol style="list-style-type: none"> Chevelle Hall, Associate Professor, Virginia State University, USA, Willis Walter, Dean, College of Education, Virginia State University, USA. Aaron Livingston, Graduate Coordinator, Grambling State University, USA. <i>Title: Educational Justice for All.</i> Tania Hossain, Professor, Waseda University, Japan. <i>Title: Denial of Education for Rohingya Refugee Children in Bangladesh.</i> Jean Berlie, Researcher, Education University of Hong Kong (EdUHK), Hong Kong. 	<ol style="list-style-type: none"> Irina Falls, Professor, University of North Carolina, USA. <i>Title: Why Early Childhood Educators’ Beliefs and Attitudes about Teaching Science Matter.</i> Anat Abramovich, Lecturer, Gordon Academic College, Israel. <i>Title: Development of an Online Climate Change Course to Change Environmental Behavior and Commitment in Pre-Service Teachers.</i>

<p>Title: Evolution of Higher Education in China, COVID-19 and Globalization and its Impact on China's HE.</p> <p>4. Mariann Kuusivuori, Lecturer, Södertörn University, Sweden. Eva Farjsjo, Lecturer, Södertörn University, Sweden. Title: <i>Qualitative and Qualitative Analysis of Mathematical Bishop's Activities in Kindergarten's Prospective Teachers' Field-Report Observations.</i></p>	
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13:00-14:30 TIME SLOT 7 - NOON PRESENTATIONS

Time Slot 7a Coordinator: Olga Gkounta, Researcher, ATINER	Time Slot 7b Coordinator: Konstantinos Manolidis
<p>1. Kristi Julian, Professor, Middle Tennessee State University, USA. Vickie Harden, Associate Professor, Middle Tennessee State University, USA. Title: <i>An Holistic Approach to Interdisciplinary Learning among Social Work and Design Students.</i></p> <p>2. Andrea Schroeder, Administrative Director, Centre for Teaching Development and Innovation, Bonn-Rhein-Sieg University of Applied Sciences, Germany. Kristi Julian, Professor, Middle Tennessee State University, USA. Title: <i>Design Student Understanding of Global Context and Practice: An Interdisciplinary Project Based Approach to Learning.</i></p> <p>3. Yeşim Bulca, Associate Professor, Hacettepe University, Turkey. Title: <i>The Effect of Inquiry-Based Learning Model on Physical Health Related Fitness Knowledge Levels and Attitudes of Middle School Students</i></p> <p>4. Angelina Lumbré, Teacher, San Mateo Senior High School, Philippines Title: <i>Relationships among Mathematics Teachers' van Hiele Levels, Teaching Styles and Students' Achievement in Geometry.</i></p>	<p>1. Niclas Lindstrom, Associate Professor, Umeå University, Sweden. Lars Samuelsson, Associate Professor, Umeå University, Sweden. Title: <i>Three Approaches of How to Address Controversial Issues in Education.</i></p> <p>2. Ali Sakkal, Associate Professor, Wake Forest University, USA. Title: <i>Connecting Hand & Mind: Makerspaces for Inspired Teaching & Learning.</i></p> <p>3. Sagufta Sahin, Assistant Professor, University of Gour Banga, India. Title: <i>Gandhi's Intellectual Inspiration the Panacea for All Social Evils in Indian Context.</i></p> <p>4. Alistair Martin-Smith, Retired Professor, New York University, USA. Title: <i>Quantum Drama as Theatrum Mundi.</i></p> <p>5. Celeste Joy Matias, Researcher, Miriam College, Philippines. Title: <i>Being Female and At-risk in Mathematics: A Phenomenological Study.</i></p>

14:30-16:00

Lunch

16:00-18:00 TIME SLOT 8 - AFTERNOON PRESENTATIONS

Time Slot 8a Coordinator: Olga Gkounta, Researcher, ATINER	Time Slot 8b Coordinator: Konstantinos Manolidis
<ol style="list-style-type: none"> Kobi Assoulin, Senior Lecturer, Oranim College of Education, Israel. <i>Title: Education and Multiculturalism: The Way Illuminating Some Blind Spots within Taylor's Concept of Recognition and Kymlicka's Concept of Multiculturalism Affect Multicultural Education.</i> Mark Melton, Associate Professor, Northeastern Illinois University, USA. <i>Title: Supporting Students with Autism: Strategic Approaches for Enhancing Communication, Socialization and the Effective Use of Relationships in School Settings.</i> Meredith Drees, Chair, Department of Religion and Philosophy, Kansas Wesleyan University, USA. Alexander Botz, Research Assistant, Kansas Wesleyan University, USA. <i>Title: The Discipline of Dialogue: Discovering Student Empowerment through Conversation.</i> Joseph Oluwale, Professor, Montclair State University, USA. <i>Title: Truth Matters: Race-Conscious Measures in Schools and the Parents Involved Case.</i> Rebecca Renee Herrera, Teacher, The American University of Ras Al Khaimah, UAE. <i>Title: Teacher Planning Templates: Helpful Tool or Waste of Time? A Comparative Analysis of the Perceptions Novice And Experienced Teachers in the UAE and USA.</i> Troy Herrera, Teacher, The American University of Ras Al Khaimah, UAE. <i>Title: Examining the Role of Job Satisfaction in Length of Stay among Expatriates: A Case Study of Public-School Teachers in Ras Al Khaimah, United Arab Emirates.</i> 	<ol style="list-style-type: none"> Sobitha Samaranayake, Associate Professor, University of Wisconsin - Whitewater, USA. <i>Title: Dependency Visualization Tool for Decision Support Systems.</i> Janet Jarvis, Academic Leader, University of KwaZulu-Natal, South Africa. <i>Title: Crossing Disciplinary (and Contextual) Boundaries: Empathetic-Reflective-Dialogical Restorying - A Teaching-Learning Strategy in Higher Education.</i> Hannele Laaksonen, Principal Lecturer, Tampere University of Applied Sciences, Finland. <i>Title: Fun Human Resource Management Experiences and Learning from Them.</i> Orpha Ongiti, Dean of Postgraduate Studies and Director of Research, Africa Nazarene University, Kenya. <i>Title: Talent through Higher Education in Kenya: A Case of Universities in Nairobi City.</i> Ghina Kalaji, Master of Education, American University in Dubai, UAE. <i>Title: Gifted and Talented Programs for High School Students in the UAE.</i> Miranda Enesi, Lecturer, Polytechnic University of Tirana, Albania. <i>Title: An Analysis of English Writing Errors of Freshman Students' Essays (The Case of Aleksandër Moisiu University).</i>

18:00-19:30 TIME SLOT 9 - AFTERNOON PRESENTATIONS

Coordinator: Olga Gkounta, Researcher, ATINER

- Holly Manaseri**, Associate Professor, University of Hawaii at Manoa, USA.
Title: Social Justice Leadership: DisCrit in Action.
- Teresa Perkins**, Assistant Professor, Doane University, USA.
Title: US Public School Principals' Job Satisfaction: A Comparison by Region and Gender, School Location, School Level.
- Richard Surrency**, Superintendent, Putnam County School District, USA.
Title: Lead Your Way Out of a Crisis, Rather than Only Manage Your Way Out.
- Ann Davis**, Retired Clinical Associate Professor, The University of North Carolina at Greensboro, USA.
David Taylor, PhD Student, The University of North Carolina at Greensboro, USA.

Title: Superintendents Perceived Professional Development Needs in Rural America: A Qualitative Study.

20:00-21:30

Greek Home-Made Dinner (includes the traditional Greek household hospitality and quality)

Wednesday 18 May 2022
Educational Islands Cruise

Thursday 19 May 2022
Delphi Tour

Anat Abramovich

Lecturer, Gordon Academic College, Israel

&

Sophie Shauli

Lecturer, Gordon Academic College, Israel

Development of an Online Climate Change Course to Change Environmental Behavior and Commitment in Pre-Service Teachers

Global warming is one of the most urgent issues facing governments and individuals alike. The sixth Climate Report (2021) by the Intergovernmental Panel on Climate Change (IPCC) estimates that humanity is responsible for greenhouse gas emissions into the atmosphere and its resulting global climate change. Pre-service teachers (PST), tomorrow's educators, should spearhead the battle against global warming. This study describes an online global warming course for PST covering the cognitive, metacognitive and social-emotional dimensions involved. Drawing on the literature revealing the complexity of behavioral change, we designed ways for PST to engage personally in environmental behavior (EB) to impact EB in families, friends, and students. Thirty-six science and communication pre-service teachers enrolled in an academic college in northern Israel took part. The aim was to evaluate the participants' EB commitment and change during and after the intervention. Using a mixed methods approach, pre- and post- online questionnaires consisting of four main parts were administered: climate change content knowledge (correct/incorrect), awareness of climate change issues (Likert Type scale), daily EB that can influence global warming (Likert Type scale), and an open-ended question on international efforts to reduce greenhouse gas emissions. The post questionnaire included two other open-ended questions: (1) Describe one EB that changed during your participation in the course; (2) Describe EB steps you have taken to encourage climate change in family, friends, and your students. The qualitative analysis of the open-ended questions revealed three categories: (1) Habit-dependent and unexplained behavior, (2) Broadly explained behavior based on "general care" for the environment, (3) Specifically explained behavior motivated by arguments about the complexity of environmental problems and explicit willingness to act to protect the environment. The preliminary results indicated that in the private sphere, the PST were more likely to act than in the public sphere, e.g., when asked to choose one statement that represented their behavior, PST chose various behaviors in the

private sphere (e.g., separating waste, using public transportation). Their justifications for their behavior were habit-dependent or based on general care for the environment.

The participants' learning curves, knowledge, attitudes, and EB will also be presented. Methodologically, this study describes an empirical research tool that can be applied to test knowledge, attitudes, and behavior related to climate change, and an online climate change course and can be used with different types of learners.

Eva Anderl

Professor, Munich University of Applied Sciences, Germany

Jessica Slamka

Professor, Munich University of Applied Sciences, Germany

Christian Greiner

Professor, Munich University of Applied Sciences, Germany

Felix Hopfl

Lecturer, Munich University of Applied Sciences, Germany

Harald Seitz

Lecturer, Munich University of Applied Sciences, Germany

&

Sophie Botz

Master Student, Munich University of Applied Sciences, Germany

Fostering IT Competencies in Business Students through IT-Based Business Development Projects

Computational thinking abilities have become an important skill for future employees (Tsai et al., 2019). Especially business students need to understand the basics of information technology (IT) and how to communicate with programmers, designers and developers in order to be able to compete successfully in a high-tech world (KeyStone MBA Studies, 2016).

Inspired by the “From Teaching to Learning” approach (Barr and Tagg, 1995), the authors investigate how group-based project work can be used to foster students’ acquisition of IT competencies in a business context. For this purpose, in an undergraduate class on introduction to information systems and programming at a large German University of Applied Sciences, the mode of examination was changed from a written exam to an IT-based business development project. Groups of five students were asked to identify an existing business demand and develop a potential solution based on IT and implement a prototype using Microsoft VBA as a programming language. Project results were delivered in a final presentation including a demonstration of the prototype. To investigate the effects of this form of learning and examination, students were asked to submit a written reflection on the project.

174 self-reflections were analyzed using qualitative content analysis (Kuckartz, 2014). The analysis reveals three core topics which not only promote the acquisition of IT competencies as such but further enhance complementary professional and personal competencies: *teamwork*, *learning behavior* and *learning outcomes*.

Students consciously planned their *group work* and reflected on it afterwards, describing mutual support, the division of tasks, and time management as success factors.

Furthermore, the project induced a both structured and self-organized *learning behavior*. Students made use of concepts presented in class such as the structure chart in order to reach their goal in a structured manner. They used a broad range of sources for knowledge acquisition, including (internet) research, lecture notes and video tutorials, thus demonstrating information literacy. Overall, the “learning by doing” approach was perceived as highly effective by the students.

The *learning outcomes* are only partly related to IT and programming. Many students described that they had learned the usage of tools (mainly VBA and Excel) and have gained a better understanding of IT, its complexity, and its practical relevance. However, another noticeable part of the learning outcomes was *creativity* in the sense of creative ideas and knowledge of design principles. Along with other mentions such as deepening the business knowledge, learning how to cope with failures and training discipline and ambition, this represents a wide spectrum of positive learning outcomes. Several students explicitly mentioned high *self-efficacy*: “Every time I solved a task, my motivation grew steadily. As if by magic, a positive feedback circle emerged, which in turn naturally increased the self-efficacy of each individual group member and of the group as a whole.” To follow up on this outcome, the authors conducted a quantitative survey using an adaptation of the Computer Programming Self-Efficacy Scale (Tsai et al., 2019) among 73 participants of the class, indicating high levels of programming self-efficacy.

Given the mainly qualitative approach of this study, the results are only partly generalizable. However, they provide a clear indication that an IT-based business development project is a suitable tool for developing IT competencies with learning outcomes that go far beyond basic programming skills.

Kobi Assoulin

Senior Lecturer, Oranim College of Education, Israel

**Education and Multiculturalism:
The Way Illuminating Some Blind Spots within Taylor's
Concept of Recognition and Kymlicka's Concept of
Multiculturalism Affect Multicultural Education**

The two main justifications that have been offered for multiculturalism are the communitarian argument and the argument from autonomy. In this article, I will argue that although the two arguments reach similar conclusions, investigation of the foundations of the communitarian argument and the argument from autonomy reveals a different educational approach to multiculturalism from that which we might have intuitively concluded if we took only the bottom line of these arguments into account. That is, although one might suppose that multiculturalism suggests an educational approach wherein each culture withdraws into itself, I argue in this paper that the opposite is the case.

This article, then, will review the communitarian argument and the argument from autonomy, and afterward critically assess the implications of the presumptions of these arguments, which I refer to as the “blind spots”, and the way these “blind spots” affect the question of multiculturalism in the educational sphere.

In the section addressing “blind spots” the article will develop two points:

The communitarian position is based mainly on the view of recognition as a demand made by persons living within marginalized communities, toward the other dominate communities within the state. The article will show the degree to which this demand entails various capabilities and practices that require a complex and dynamic view of recognition that cannot merely be satisfied by a demand for recognition by those persons, based on its being a right, but also require the subject to develop significant autonomous skills before he or she can make a legitimate demand of recognition. These skills cannot be exercised within the public sphere. Following this, I will show that there are blind spots also in the justification from autonomy. Like the communitarian argument, the justification from autonomy implies that there are prerequisite capabilities and practices necessary for autonomy to function in support of a well-lived life (in the Aristotelian sense), and like in the communitarian argument, these capabilities and practices cannot be exercised in the context of the public sphere.

Finally, I will argue that only in education can these blind spots be appropriately addressed. This is because the educational space is autonomous in the sense that it has a different understanding of the way the right to personal autonomy should function within the educational sphere. A culture that demands political multiculturalism as an ideal in the public sphere, is closer to ideals of negative freedom, neutrality, and tolerance, and has difficulty accepting perfectionistic-autonomous practices (empathy, dialogicity, exposure, critical thinking) as regulative ideals for the sphere, in contrast, the educational sphere is from the outset defined as such.

Jean Berlie

Researcher, Education University of Hong Kong (EdUHK), Hong Kong

Evolution of Higher Education in China, COVID-19 and Globalization and its Impact on China's HE

The extraordinary progresses of China's higher education were done in a very short time, in twenty years (1990-2010). The reforms *gaige kaifang* of President Deng Xiaoping during the period 1978-1997 are essential to understand China's fantastic current development and success of Higher Education (HE).

At present the Belt and Road Initiative (BRI) has connection with Chinese policies for international cooperation in higher education. The most explicit *Education Action Plan for the BRI* was issued by China's Ministry of Education in 2016 with cooperation in Higher Education in the BRI countries. Advancing BRI policies includes making BRI better known and winning support for the realization of BRI projects in Higher Education. A similar role can be played by education diplomacy with both 'education for diplomacy', and 'diplomacy for education' processes being relevant. (Ingrid d'Hooghe 2021).

In 2021, despite the COVID-19 in a time of tertiary education and globalization, many students want to come to Beijing or other famous Chinese universities. China at present receives 500,000 international students per year and nearly 59,000 HE foreign students received a scholarship in 2017. Higher Education in China is the largest in the world. By May 2017, there were 2,914 colleges and universities, with over 20 million students enrolled in mainland China. In January 2021, Beijing Language and Culture University has 9,056 International students, the University of International Business and Economics has 8,555 students, Peking University 7,793 and Shanghai Jiaotong University 7,412 International students.

The first universities in China are Tsinghua which is the 16th in the world, the second, Peking University is classified 18th by the same Subject Ratings in the World University Rankings.

The University of Hong Kong – normally not part of the mainland HE – is the 30th, the 50th is Shanghai Jiaotong University and the 88th in the world is the University of Science and Technology.

The important number of Master and PhD scholarships offered by the Ministry of Education of China continues to be significant. Liking or not liking it. China has 525 Confucius Institutes and 1113 Confucius Classrooms around the world. In total 154 Confucius Institutes and 149 Classrooms are located in 54 BRI countries.

It is suggested that higher educational institutions in China should develop more flexible approaches with focus on different groups of students and comprehensive policy, elsewhere structural reforms in education are better to ensure improved educational outcomes.

Liat Biberman-Shalev

Lecturer, Levinsky College of Education, Israel

Orit Broza

Head of Elementary School Training Program, Levinsky College of
Education, Israel

&

Dorit Patkin

Dean, Faculty of Education, Levinsky College of Education, Israel

Activating Research Project for Coping with Crisis in the Context of Teacher Education

Before the outburst of the COVID-19 pandemic, teacher education institutions around the world used to prepare teachers for face-to-face teaching and social interactions learning. As a result, when lockdowns were enforced, one could not find theoretical and empirical knowledge, supplementary material, and information about teaching, learning and, obviously, teacher education in this reality of world crisis and social distancing. This lack of crucial information acted as a barrier for teacher educators to cope with the crisis and the new reality it brought with.

We, at the Faculty of Education in a well-known and established teacher education college in Israel, felt the need for documenting our challenges and obstacles in teacher training during the crisis. Thus, we decided to design a faculty's research project which was aimed to (a) develop and provide practical knowledge and evidence about teacher education in a time of pandemic; and (b) help faculty's staff to cope with an uncertain and a new reality of teacher education. In this respect, we invited heads of departments, lecturers, and pedagogical instructors to share their experiences, thoughts, challenges, and successes by conducting empirical research and reflections and to share them in a faculty's anthology. Coping with the crisis through sharing was one of this research project's significant priorities. 31 faculty members from a variety of teacher training programs (pre-school to high school and M.A. programs) took part in the project which resulted in 16 research papers and reflections.

The anthology which is the tangible product of the research project assimilates an organizational auto-ethnographic methodology (Boyle & Parry, 2007). This method allows us exploring the narrative of teacher education in a time of crisis. In other words, to understand the options, as well as the unresolved challenges that the COVID-19 pandemic has brought into the faculty as a whole organization. The empirical research and reflections in the anthology illustrate the effects of the lockdowns

and the shift to online teaching and learning on students, teachers, principals, pre-service teachers, and teacher educators. Therefore, this research project tended to be a part of Flores' (2020) notion, adding a tier and sharing a wide perspective of teacher education in a time of crisis.

We found that the research project enabled the faculty's staff: (a) to continue to collaborate with each other and thus to preserve social relationships in time of lockdowns; (b) to find in their empirical and reflective writing a spot of stability and a lighthouse for continuing their professional work; (c) to learn from each other through sharing; and (d) to support each other and to find out that "we are all sailing in the same boat trying to navigate the best we can".

Our presentation will present the process and the aims of this unique research project as well as its main product. Moreover, we wish to discuss the contribution of this project to the faculty's staff as well as to the global community of teacher educators.

Daniel Bosmans

Lecturer, University of Teacher Education - BEJUNE, France

Vincent Fivaz

Deputy Headteacher, Cercle Scolaire Le Locle, Switzerland

&

Françoise Casciotta

Headteacher, Cercle Scolaire Le Locle Cercle Scolaire Le Locle,
Switzerland

The Autonomous Acquisition of Transversal Competencies by Primary School Children through the Use of Pedagogical Scenarios

This project aims at getting a better understanding of how the teacher can support the acquisition of transversal competencies (collaboration, creativity and reflection) when children aged between 4 and 9 take part in an activity designed to promote autonomous or self-regulatory learning. There is a need to map out the teacher's professional actions when endeavouring to scaffold autonomous learning, taking into account the tensions coming to the fore between teacher's interventions and autonomous learning. How can the teacher ensure that the task is completed without interrupting the creative, collaborative and reflective dynamics within the group? How can they support learning becoming progressively more autonomous in each group? How is the flexible classroom organized to promote self-regulatory learning?

This research builds on the concepts of expansive learning developed by Engeström (1987) and his triangular model of collaborative activity stemming from his work on cultural-historical activity theory (CHAT). Data is analysed using the 6 sub-phases of the self-regulation learning model developed by Zimmerman & Campillo (2003).

It is a collaborative research project based on Desgagné's procedure (2007) as the researcher, teachers and children all work together at every stage of the study, i.e., the planning of observed lessons, the delivery of those lessons filmed by both the researcher and children, the co-analysis of data with the teachers, and the final drafting of pedagogical scenarios by teachers in the UK and the trialing of these by teachers in Switzerland. These scenarios are built with the purpose of promoting the development of transversal capacities in children at primary school level when engaging in various subjects: L1/L2, Sciences, Maths, and Physical Education. These subjects are matched with one or two transversal capacities and with approaches currently applied to the teaching of these disciplines. Each of these scenarios are

thus underpinned by our research and can be used practically in the primary classroom to develop transversal competencies through autonomous learning.

Lena Bostrom

Professor, Mid Sweden University, Sweden

&

Goran Bostedt

Associate Professor, Mid Sweden, University Sweden

Students Study Motivation - A Question for All Actors in Daily Work in School

Students' study motivation is a major international problem. So also in Sweden where about 25% of students leave upper secondary school without complete grades and the proportion of dropouts is high. In other words, the throughput is low. The main explanation for the perceived low throughput is that 53% of the students feel that they have low study motivation (Sveriges Elevkårer & Lärarnas Riksförbund, 2015). The most important ways to increase study motivation are a) good interaction between teachers and students and b) access to student health. In order to analyze a lack of study motivation as a cause of low throughput in upper secondary school, a perspective is thus required that not only focuses on the individual student but also takes into account the entire school and classroom situation. The starting point in this study is therefore that study motivation is about transaction (Perry et al., 2006). Study motivation should not be understood only as an individual trait, but that it is about negotiations of meaning in the social interaction. According to Perry et al. (2006) there are strong links between motivation and a) communicated expectations b) clear feedback on results, c) interaction between teacher and student and between students, d) positive climate and e) teacher leadership.

This study is based on ten individual interviews with lead teachers and principal, nine group interviews with teachers and nine group interviews with students, a total of about 120 persons. The focus of the interviews was what motivated students to study and what demotivated them. The empirical material was then analyzed with a thematic content analysis for the four groups. Subsequently, comparative analyzes were performed between the four groups. Experiences of the four groups about what can increase students' study motivation in upper secondary school and the reason/explanation for any low study motivation largely show a complex interplay between results and motivation. The crucial difference turned out to be the principals' perceptions compared with the other three groups. Although principals have a student perspective, their perceptions were of a more general nature. Differences between students and teachers are that the former

emphasizes the teacher's competence while students are more interested in a just teacher as a person. Concerning lead teachers who have a mission to lead development work in schools, no groundbreaking views emerged. To support students' study motivation, a much greater understanding of phenomena among the staff is needed. Our recommendation is to focus on a broad front on all actors in school and listen to and take into account students' voices. In this study, we cannot see the requesting link according to the transactional perspective.

Randa Bou-Mehdi

Senior Instructor, American University of Sharjah, UAE

**Shifting from Hybrid back to “Traditional”:
University Students’ Attitudes towards the Different
Modes of Teaching and Learning**

With the sudden shift to online learning in March 2020 due to the outbreak of COVID-19, many teachers found themselves thrown into the realm of online teaching with minimal experience and almost no knowledge of how to make the best out of this change for students. The recent developments have led students to experience online lessons, hybrid lessons, and then return back to the “traditional” mode of teaching and learning within a relatively short period of time. This paper shares the results of a survey that investigates the attitudes of 100 freshmen and junior level students towards the different modes of teaching and learning that were offered by the courses that they were enrolled in at an American institution in the United Arab Emirates. The survey reveals the challenges faced by students in online and hybrid classes, and highlights the perceived advantages and lessons learned from their limitations.

Yeşim Bulca

Associate Professor, Hacettepe University, Turkey

The Effect of Inquiry-Based Learning Model on Physical Health Related Fitness Knowledge Levels and Attitudes of Middle School Students

A new middle school Physical Education (PE) program was launched in 2012 in Turkey, in which the development of health related physical fitness is one of the most important goals. The purpose of the present study was to investigate the effects of inquiry-based learning model on physical health related fitness knowledge levels and attitudes in fifth grade students during eight -week health related programs. 106 children from fifth grade aged 10 to 11 years participated in the study. The experimental group consisted of 62 children who participated in the program held one day a week for a 60-minute session, which was allotted for the Physical Education in the school. The control group (n=44) participated in the routine Physical Education program in the curriculum. One week before and after the study, a physical fitness knowledge test and attitudes scale was employed in order to assess the subjects and controls. It is planned to use the analysis of variance (ANOVA) technique in order to determine whether there is a difference in terms of learning process after implementation of the students in the experimental group, in which inquiry-based teaching was applied, and the students in the control group, who were taught routine physical education lessons. The significance value (p) in the test in the post-test scores section used for experimental and control purposes in the experimental study can be reviewed. Analysis of variance (ANOVA) is used. The results showed that inquiry-based learning has positive effects on students' attitude to health related fitness lesson and their physical health related fitness knowledge success.

Keitha Burnett

Coordinator, Gulliver Preparatory School, USA

The Power of Purposeful Portfolios in Social Science: An Inclusive Approach to Comprehensive Teaching

Many social science educators find it increasingly difficult to have class discussions/debates without being offensive to someone, particularly in government. It has become commonplace in secondary schools, colleges, and universities where students scrutinize educators' comments or lessons as racist, misogynistic, or biased. Many of these complaints may have credibility, but it has had a chilling effect on academic expression. The increase of political polarization with the over-reliance on social media has driven multiple wedges in what used to be part of healthy classroom discussions.

Educators must move away from traditional methods of teaching that are primarily teacher-centered, such as lectures and exams, to a more student-centered, inquiry-driven classroom. Advocates of student-centered pedagogy generally proceed from the constructivist position that maintains that learners construct their understandings through their actions and experiences on the world (Mascolo, 2009). The key to any successful transition to a student-centered approach is planning, formulating appropriate questions, aligning standards focusing on the larger picture, creating opportunities for presentations, and a time for student reflection. The stated measures should not stifle questioning in the classroom. Still, they should increase the appropriate level of inquiry since the students formulate their questions within the boundaries of the standards.

Portfolios traditionally are used in the visual arts as an assessment and evaluation tool, but they have become increasingly used in various settings and disciplines. Still, there have been conceptual issues and empirical evidence (Davies and LeMahieu, 2003). Students naturally have an affinity to their visual arts productions. Through trial and error, I have identified eight key components for a social science portfolio: personal profile, philosophy of government, journal entries, observations, current events, multi-media presentations, research, and reflections driven by a theme or issue selected by the student.

For the first semester of the 2021-2022 school year, I required 50+ students to develop a government portfolio. The students attend a private non-religious college preparatory school in a suburban city. It took approximately three weeks of orientation to ensure that all students understood the concept of a portfolio and could create and

develop one effectively. The effectiveness of the portfolio will be measured using a comparison group, surveys, and field notes.

Nurit Chamo

Head, Levinsky College of Education, Israel

When VUCA Met the Principal Education Programme during COVID-19

A substantial body of research knowledge and scholarship in education highlights issues of policy formation and implementations from a variety of conceptual positions. Examples of these different perspectives can be found in the way the world of VUCA -volatile, uncertain, complex, ambiguous- challenges core curriculum. In this qualitative research it is a top-down pre-service school principals curriculum. Such one subject to a regulatory outline underpinned by a set of principles and standards, as well as by a solid rationale. It is clear that the COVID-19 pandemic frames itself as an extreme case of VUCA. It has global and far-reaching implications for all areas of life. This gives rise to the question of the validity, duration, feasibility, boundaries, and interpretation of a pre-formulated curriculum from theory to practice. This does not imply only the various and natural transformations of the curriculum, from the national level and up to the actual teaching and learning processes. This also refers to guiding perceptions and principles. Gates et al. (2020) explored the use of State-Level policy levers to promote principals' quality. They illustrated the importance of state regulation concerning authorization of support and constant examination of education programs, for the purpose of ensuring high-quality education processes of pre-service principals.

Thus, the questions this research asked are: What kind of meetings points were explored between the VUCA world and the pre-service principal preparation program, during the COVID-19 Pandemic? What does it mean?

Data were collected from the explicit core curriculum as well as the flexible, changing, and growing curriculum within a group of 25 pre-service principals and 4 members of the teaching staff, using research tools in a qualitative-interpretive approach throughout one education year, from October 2020 until June 2021, on the background of three pandemic waves.

Meeting points addressed four major facets of the curriculum: the first one meet the question of volatility vs vision second one refers to uncertainty vs understanding in regard to the profile of the practicum, third one addressed the characteristics of complexity vs clarity & context in regard to participants needs and the forth highlights

dimensions of time, space and sequence organization, and therefore refers to ambiguity vs agility.

In each of these varied transitions, foci defined were identified as omission, as well as foci identified as learning opportunities and in-depth observation of the program and its components and, hence, a potential of change and growth, as well as an identity-shaping process. A reference made to the meeting point between the curriculum decision-making process and the identity-shaping process exposed three key foci of strength: engagement in identity and identity awareness, ethics of alliance, and leadership.

Adrienne Coleman

Director of Equity and Inclusion, Illinois Mathematics and Science
Academy, USA

A Path towards Advancing Educational Equity and Excellence

According to the Midwest and Plains Equity Assistance Center, “educational equity is when educational policies, practices, interactions, and resources, are representative of, constructed by, and responsive to all people such that each individual has access to, can participate, and make progress in high-quality learning experiences that empower them towards self-determination and reduces disparities in outcomes regardless of individual characteristics and cultural identities.” The Danielson Framework, which has equity at the heart of it, encourages teachers to strive for excellence, but “a commitment to excellence is not complete without a commitment to equity.” Each student deserves access to world-class teaching and learning environments that promote joyful inquiry, intellectual rigor, and reflection. However, the assurance of great teaching for every student has proven difficult to achieve in both policy and practice. The National Association of Diversity Officers in Higher Education (NADOHE) states that a fundamental commitment to inclusive excellence embedded throughout educational institutions is critical to their health and functioning. Inclusive excellence starts at the highest level of administrative authority, is expressed prominently in institutional missions and strategic plans, and is supported through meaningful allocations of fiscal, human, and physical resources. NADOHE suggests that education leaders should embody and demonstrate the critical values of equity, diversity, and inclusion, and should enable entire campus communities to access and articulate the contributions of and the rewards gained from an inclusive learning and working environment. This same diversity, equity and inclusion trend is evident on the global level. The United Nations Educational, Scientific and Cultural Organization (UNESCO) is the United Nations’ specialized agency for education that provides global and regional leadership in education. UNESCO states “education is a basic human right and the foundation on which to build peace and drive sustainable development”. In fact, Sustainable Development Goal 4 calls for countries to “ensure inclusive and equitable quality education, and promote lifelong learning opportunities for all”.

Considering this national and global equity focused call to action, the Illinois Mathematics and Science Academy (IMSA) engaged in a process to institutionalize and operationalize Equity and Excellence to

address educational inequities. This process included creating an educational case for engaging in Equity and Excellence, policy development, capacity building to engage in equity work, an inclusive and comprehensive data collection methodology, data meaning making, as well as an equity and excellence plan and scorecard development. Thus, this presentation will provide participants with an understanding of educational equity, share tools to assist educational institutions in drafting data-informed equity and excellence policy/ plans, as well as provide a framework to score and measure progress in advancing equity. It will further share how to approach equity and excellence in an inclusive manner, as well as how to confront any resistance that may arise from educational institutions prioritizing this work.

Maria Rosaria D'Acierno Canonici

Associate Professor, Parthenope University of Naples, Italy

Music and Art: Two Underestimated Disciplines

This study was suggested by the tragic event associated to the CORONA virus, which gave us a great lesson: the importance of arts to help our mind, our soul, and our economic growth, too. During the lockdown, music and visual arts seemed the only means to gather people, to share emotions and to fill in the isolation of our life, so to achieve a kind of new energy. Now, that the world seems to face a new era, theatre, cinema, art exhibitions and concerts occupy a large space to improve culture and economy. In Italy the Istituto Comprensivo in Monteforte Irpino has planned a special session for young kids and teenagers offering them the chance to study a musical instrument during the school hours. I'm observing these students' cognitive development with tests in order to compare them with those of the students following the regular curriculum.

Ancient Greece (Plato, Pythagoras, Aristotle) considered art and music the founding disciplines of their education. Music was associated to mathematics and poetry; theater to the art of speaking, and painting and drawing to the social aspect of society. Because the Greeks were an advanced civilization, neighboring countries adapted their teachings as their own. On the contrary, in our western school curricula, art in general does not seem to be much appreciated; it still has a Cinderella role. As educators, we have to revive art and music at any age, since not only they increase academic performance, rather they provide creative energy stimulating the future production of films, plays, designs, fashion, thus linking school and future professions. Most importantly, they arise the students' desire to learn. This desire will help them to live an active life full of projects; projects which will help them to face all the problems of their life with a serene spirit. There is also evidence that arts and music keep youths out of trouble, alcohol and drug abuse.

Ann Davis

Retired Clinical Associate Professor, The University of North Carolina
at Greensboro, USA

&

David Taylor

PhD Student, The University of North Carolina at Greensboro, USA

Superintendents Perceived Professional Development Needs in Rural America: A Qualitative Study

School systems are complex organizations that have governmental, public, and moral mandates to prepare students to be successful in the ever-changing global society (Kahlenberg & Janey, 2017). At the forefront of this complex organization is the superintendent. The superintendent sets the direction and tone within a school system while responding to the often-competing demands of the local school board, administrators, teachers, parents, students, and members of the community. The superintendent must also attend to and focus on issues related to teaching and learning. After all, the primary purpose of schools is to impact student learning. The superintendency is a demanding job that requires staying abreast of current research and best leadership practices. The superintendent must know his/her strengths and weaknesses while continually striving to grow personally and professionally. Ongoing high-quality professional development can aid the superintendent in examining his/her leadership to better meet fluctuating student needs as they prepare for the challenges of a technologically advanced global society. This qualitative study examined the perceptions of professional development needs of superintendents as leaders of a complex organization in rural schools. The study gives voice to 12 superintendents who serve rural America students. Face-to-face interviews were completed to collect data for the study. The data collected were analyzed and common themes surfaced to demonstrate the professional development topics, preferred delivery methods, and the support structures superintendents use to meet their professional development needs. Results from the analysis show that superintendents need professional development on tactical, managerial, and leadership development. Superintendents generally choose what professional development activities in which to participate with few barriers that are not self-imposed. Superintendents are willing to use a range of delivery vehicles to receive professional development but overwhelmingly prefer face-to-face delivery. Three general themes emerged from the data. Superintendents feel strongly that mentorship

and networking are critical support structures and most felt the principalship was a vital experience to succeed as a superintendent. The study concludes with recommendations and a “how to” blueprint to best meet the professional development needs of superintendents in each stage/tier of their development. The professional development blueprint provides a nexus of support for superintendents and gives direction to partners: state government official and policymakers, higher education, state and national organization, and corporate providers.

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&

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Technologies and Digital Competences in Portuguese Education: History of their Integration in Pedagogical Practices since the Beginning of the 20th Century

Technology applied in the educational context is not a recent reality and should be considered from past experiences, so that the understanding of it does not remain hostage to the episodic technological novelty. With the introduction of Digital Technology (DT) in schools, new realities have been built and different challenges have been posed regarding the development of teaching and learning environments enriched with the digital. In this sense, networked learning and the potential of digital technologies have brought new and stimulating challenges for the whole school community. One of the main challenges relates to the need to design new learning scenarios using digital technologies, social networks and virtual environments, being fundamental that teachers acquire digital skills that allow them to use these technologies effectively. However, it is also relevant to understand the forms of dissemination or the eventual difficulty of this dissemination, in a contemporary vision of the use and appropriation of Technology by Education and the way in which the evolution of Technology has deeply influenced the techniques of teaching and learning. This study aims to analyse the evolutionary context of the introduction of technology in Portuguese schools, from the beginning of the 20th century to the present day, and to identify the digital skills of Portuguese teachers at different educational levels. The analysis, qualitative and quantitative in nature, allowed us to conclude that technologies had a slow diffusion in Portuguese schools, because of the scarcity of resources and residual investment in teacher training, giving the use of technology in school a more irregular and playful character rather than truly integrated in pedagogical practices to promote the quality of learning. Although in recent years there has been still some conservatism in the use of technology, very focused on its instrumental use, there have been more practices with pedagogical intent and more focused on the active participation of students, also noting the growing importance of teacher training in this field of digital technologies, with the aim of making teachers more competent and fluent in the

pedagogical use of digital. Furthermore, the study focused on the teachers' perception of their digital competencies in three dimensions: the teachers' professional and pedagogical competencies and the students' competencies from the DigCompEdu framework and the self-assessment questionnaire of digital competencies built from the same framework - DigCompEdu CheckIn. The analysis of the answers obtained in this questionnaire (collected from the participation of 434 teachers of Basic and Secondary Education and 118 of Higher Education) showed that teachers need to increase their levels of digital proficiency through specific training, since they present, globally, a moderate level of digital proficiency - level B1 -Integrators- being the areas 4 - Evaluation - and 6 - Digital empowerment of students, the ones that present the greatest weaknesses.

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The Discipline of Dialogue: Discovering Student Empowerment through Conversation

Over the past 30 years, versions of the “Socrates Café” have become part of an international movement to promote civil, philosophical discussion. In this paper, we will focus on the Socrates Café as a pedagogical method, and we shall argue that when students are evaluated on their ability to lead inclusive dialogue, the Socrates Café becomes a place for people to discuss important topics peacefully, and rationally, in such a way that promotes understanding.

We shall use the term, “Socrates Café,” to refer to the practice described by Christopher Phillips in *The Socrates Café: A Fresh Taste of Philosophy*. Our version of the Socrates Café involves a gathering of students and faculty who exchange thoughtful ideas while embracing the central theme that we learn more when we practice dialogue with others. This process encourages students to become more engaged with one another, empowering them to exchange and explore ideas, as well as form their own lines of inquiry.

The Socrates Café motivates the creation of reason-based views, informed by both independent and guided exploration of material prior to discussion. This exploration fosters the organic creation of arguments by the students with limited instructor intervention. This allows students to learn through experience that intellectual courage, entertaining opposing views, and thinking critically as a team are more effective than mere debate or posturing. Students are evaluated on their ability to lead inclusive dialogue, where everyone is required to contribute meaningfully to the discussion. This approach motivates students to help one another succeed. In our experience, a group of peers in a classroom that has developed a sense of community, collectively striving to make progress in answering powerful and controversial questions, can be a most powerful teacher.

This paper examines ways in which meaningful discussion of important topics can become an identity-exploring, and character-developing aspect of pedagogy. We consider how the Socrates Café cultivates many aspects of an ancient Greek virtue theory of ethics, and

we shall argue that when students explore their identities through dialogue, they receive validation and are empowered to seek an appropriate harmony between their most basic beliefs and how they lead their lives. The café, specifically through the process of the Socratic Elenchus, exposes our shared need to define ourselves through examining our thoughts and actions. Examining the question “Why?” in detail through dialogue with peers, forces us to look beyond ourselves. This emphasis on looking at the interaction of ideas, actions, and values causes recognition that others share this need to define purpose. With this in mind, we shall suggest that the process of Socratic dialogue in the Café promotes a shift in focus from individual selves to values, and, in this way, carries us to contemplate “the other.” In doing so, it promotes diversity, equity, and inclusion.

Ultimately, we shall show that recovering the discipline of dialogue in an inclusive and collaborative way, through a reinvigoration of ancient Greek philosophical ideas, allows it to be more effective and empowering than has been appreciated in recent times.

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&

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Evaluation of the 3D Reconstruction Performance of Objects in Meshroom: A Case Study

3D reconstruction of objects is with interest nowadays, mainly in production industry. The field of photogrammetry realizes the 3D reconstruction of objects through 2D photos. Different software, free or non-free exist, providing different quality and performance. Accurate 3D reconstruction is important in cloning objects, especially in the industry of spare parts or in the production of prostheses in medicine, etc. Determining accurately the sizes of the object, especially those with complex geometric shapes is very important in the 3D printing process. The purpose of this paper is the analysis of the accuracy of 3D reconstruction of objects against the number of its photos and the time evaluation of this process. The 3D reconstruction will be performed by free software Meshroom, measurement will be done in MeshLab. Experimental results show that quality and performance of 3D reconstruction depends on the number of photos of the object, concluding in finding the optimal balance between these parameters.

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&

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An Analysis of English Writing Errors of Freshman Students' Essays (The Case of Aleksandër Moisiu University)

One of the most important elements of English language is the writing skill. It is a competence which human beings are not born with, on the contrary, it is learned with practice and experience. In this respect, the focus must be on the hard work of English teachers who deal painstakingly with the four skills, emphasizing writing, by means of comments, advice, explanations etc. In Albanian Educational system foreign languages are given a considerable space. In high school students study up to two foreign languages. In Aleksandër Moisiu University, apart from the courses that are related to the students's profile of study, a specific importance is given to English Language as well which helps to enhance their English Language competences. This leads us to believe that students' progress in English is satisfactory; however, this is not always the case with all the skills. Even though students are very good at listening and speaking, when it comes to writing, many of them have serious problems, which are noticed while analysing their written work. In this respect, this study aims to explore and analyse students' errors through the procedure of error analysis. More specifically, a sample of 100 short essays of our freshmen students from different branches of study have been analysed. This article analyses the types of errors and their frequency of occurrence in English language writing. Based on the research analysis, it was concluded that the mechanical errors, verb tense errors, preposition errors and to some degree article errors ,resulted to be more problematic than the other categories. The importance of identifying and analyzing errors is to give teachers and English lecturers feedback on the effectiveness of their teaching techniques, information on what is to be reviewed and further notice on what parts of the syllabus need modification. Making errors is an essential part of learning and English teachers should view them from the perspective of improving their teaching approaches and techniques.

Irina Falls

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Why Early Childhood Educators' Beliefs and Attitudes about Teaching Science Matter

Although early science learning opportunities shape an individual's understanding of how scientific knowledge is developed, how it is used, and ultimately places her/him in the community of users and producers of scientific knowledge has been repeatedly stressed, they have been largely neglected in preschool and elementary curricula (Early et al. 2010; Greenfield et al. 2009; Nayfeld et al. 2011; Saçkes et al. 2011). More specifically, teachers of preschoolers and kindergarteners teach science concepts and skills only once or twice per week. They devote only about 1% to 11% of classroom time to science activities, typically not effectively utilizing available science resources because they target mostly life science concepts at the exclusion of other science domains (Early et al. 2010; Saçkes 2014; Saçkes et al. 2011; Tu 2006).

Teachers' attitudes and beliefs toward teaching play a critical role in their classroom practice but very little is known about those of early childhood educators (Pendergast, Lieberman-Betz, & Vail, 2015). This study is exploring the attitudes and beliefs of preschool and kindergarten teachers about science teaching. Using the Preschool Teacher Attitudes and Beliefs toward Science Teaching questionnaire (P-TABS), data was collected from 26 preschool teachers and data were analyzed according to the three main factors: Teacher Comfort, Child Benefit, and Challenges. All teachers were from a rural region in South Eastern US and their classrooms had a high percentage of minority population (Black and Latino). The findings suggested that the majority of teachers (86.5) recognize the benefits of providing opportunities for children to learn science inquiry and science concepts but show inadequacy and anxiety towards their own science knowledge and ability to support children's scientific learning (72%). Future research should examine the impact of professional development and/or improvement of teacher preparation programs on science teaching in early childhood education.

Thomas Fehlmann

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The World Formula

The World Formula is an abstract schema for solving most kind of problems that are encountered in life. It is expressed by

$$\mathbf{y} = \mathbf{A}\mathbf{x}$$

\mathbf{y} is what we want to achieve, \mathbf{A} is the system, or method, that we think is useful for solving the problem, \mathbf{x} is the unknown input needed that, applying \mathbf{A} to \mathbf{x} , yields something that is sufficiently close to what we want to achieve \mathbf{y} . Thus, finding a method \mathbf{A}' and a solution \mathbf{x}' such that $\mathbf{A}'\mathbf{x}' \cong \mathbf{y}$, or $\|\mathbf{A}'\mathbf{x}' - \mathbf{y}\| < \varepsilon$ where ε is sufficiently small, is what is needed to solve the world formula. $\|\mathbf{A}'\mathbf{x}' - \mathbf{y}\|$ is called the *Convergence Gap*. The functions \mathbf{A} are called *Transfer Functions*. Solutions do not always exists; this depends on the transfer function.

In signal theory, transfer functions relate the output or response of a system such as a filter circuit to the input or stimulus. The output is usually known but the input is not. A well-known example of such a function is the transfer of analog signals into a digital representation. The *Fast Fourier Transform* algorithm can solve this specific example of the world formula fast enough to constitute the base of today's internet, presenting information in audio and video formats.

In case the system consists of a linear vector space spanned by base vectors describing output, and base vectors describing input, the Eigenvector method is the method of choice to find the solution \mathbf{x} . A solution can be user requirements, usually expressed by user stories, that meet customer needs, or suitable test stories that effectively test these user stories. Such systems can be cascaded.

The Eigenvector method for linear functions between vector spaces makes calculating a solution \mathbf{x} easy. Thus, the method is suitable for teaching students who are interested in the foundations of technics. However, the system \mathbf{A} must meet certain conditions to make the Eigenvector method applicable. And calculating the Eigenvector, even if existing and applicable, is possible only by numerical methods. The *Theorem of Perron-Frobenius* defines these conditions.

In this paper, focus is laid upon explaining how to teach the Eigenvector method to students, or anyone that might make use of it. Solving the equation $\mathbf{y} = \mathbf{A}\mathbf{x}$ is most useful in many disciplines including economics and environmental protection. The world formula

and their applications impact many aspects of life, including Big Data analytics and Artificial Intelligence.

Chevelle Hall

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Aaron Livingston

Graduate Coordinator, Grambling State University, USA

&

Willis Walter

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Educational Justice for All

Educational Justice is a concept that promotes educational opportunity for all students. Educational Justice addresses the global achievement gaps regarding minority students, gender differences, low-income students, students learning English and students with disabilities. This presentation focuses on the American Educational System and its impact on the world. The researchers will elucidate the problems in education, the groups affected by the problems, why the problems should be solved and recognizing when the problems are solved. The aims of this presentation include the equity and equality of education in k-12 schools, higher education and community/educational based participation programs such as sports.

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Hebatalla Nazmy

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Bott Piper

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Alyssa Oates

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&

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Considering the Vocabulary of Internationalization: A Content Analysis across Academic Units at One University

Employers report they value global experiences in their employees. Global awareness, global competencies, and global experiences are encouraged at many universities including in the strategic plan of one American University. "Core Goals" articulated in this University's plan declare a key element of "Student Success" is to be "a student development model that...broadens their horizons through... international travel, service, and study." Under the goal of "Community Engagement," the Plan suggests the university "proudly message ...contributions made... globally...through service and engagement." While this plan is specific to one University, it is emblematic of many institutions both within and external to academe. In the current study, the researchers sought to determine specifically how global awareness, competencies, and experiences were encouraged in faculty members and students across the institution. Adopting a content analysis approach, researchers in two college units of the university accessed departmental and college documents utilizing the terms: "global", "international" and "foreign." A spectrum of official documents was analyzed, including Reappointment, Promotion, and Tenure standards at both departmental level and college levels, and selected materials, as well as digitized collections. The analysis revealed a significant variation of the use of the "vocabulary of internationalization" across documents. The researchers concluded that additional effort should be devoted to standardizing approaches to global issues.

Erik Hedlund

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An Education Model for Producing Officers with Ambidextrous Competences and Skills

Officer education has a long tradition of being primarily a vocational education focused on training in knowledge and skills that can be used here and now. The content of officer education has mainly been based on the profession's overall and proven experience. Rapid technological development, globalization, new threats such as terrorist attacks, hybrid warfare and gray zone issues, refugee issues, and the effects of climate change have meant that officer education needed to be reformed in order to provide knowledge and skills to deal with the unknown in a VUCA world. The goal is to create officer education that will produce officers with ambidextrous competences and skills, who have the knowledge to take up their positions immediately after training, but which also provides them with the knowledge and skills to prepare them for the unknown, lifelong learning, and gives them the ability to handle a rapidly changing environment.

Rebecca Renee Herrera

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**Teacher Planning Templates:
Helpful Tool or Waste of Time?
A Comparative Analysis of the Perceptions Novice and
Experienced Teachers in the UAE and USA**

The United Arab Emirates hires many teachers from abroad to work in their schools. Flying these teachers from their home country to the UAE, expending hours of work in processing requisite documentations, and subsequently transitioning them into the school system is a very costly endeavor. One way to save on expenses is to retain the teachers who are hired. A key factor in determining whether or not to remain in the UAE, for an expatriate teacher, may be their level of job satisfaction. Job satisfaction may play a critical role in determining their length of stay. Expatriate teachers may encounter challenges with managing the culture shock associate with being in a new country and being away from their friends and family back home. Considering the factors that motivate expatriate teachers to remain in the UAE is an important endeavor, as many schools in both the public and private sectors rely heavily on such teachers to provide a high quality learning experience for students across the country. As such, this study aims to discern how motivational factors such as job satisfaction effect the length of stay of expatriate teachers in the UAE.

Troy Herrera

Teacher, The American University of Ras Al Khaimah, UAE

**Examining the Role of Job Satisfaction in Length of Stay
among Expatriates: A Case Study of Public-School Teachers
in Ras Al Khaimah, United Arab Emirates**

The United Arab Emirates hires many teachers from abroad to work in their schools. Flying these teachers from their home country to the UAE, expending hours of work in processing requisite documentations, and subsequently transitioning them into the school system is a very costly endeavor. One way to save on expenses is to retain the teachers who are hired. A key factor in determining whether or not to remain in the UAE, for an expatriate teacher, may be their level of job satisfaction. Job satisfaction may play a critical role in determining their length of stay. Expatriate teachers may encounter challenges with managing the culture shock associate with being in a new country and being away from their friends and family back home. Considering the factors that motivate expatriate teachers to remain in the UAE is an important endeavor, as many schools in both the public and private sectors rely heavily on such teachers to provide a high quality learning experience for students across the country. As such, this study aims to discern how motivational factors such as job satisfaction effect the length of stay of expatriate teachers in the UAE.

Tania Hossain

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Denial of Education for Rohingya Refugee Children in Bangladesh

Rohingya in Myanmar are not considered to be citizens by the Myanmar Government and live in a condition of statelessness. Bangladesh has been the preferred destination for the majority of asylum-seeking Rohingyas, because of the initial recognition of their humanitarian needs. Rohingya population first arrived in Bangladesh in 1978, and got registered in 1991. Along with the registered Rohingya 713,000 Rohingyas arrived in Cox's Bazar, Bangladesh in August 2017 and in early May 2018, because of the genocide. This is one of the biggest Rohingya camps in the world. Many researchers are concerned about Rohingya children and their mental health. Very few of them dealt with the education and human right issues.

Rohingya children are not allowed to leave the camp and also are not allowed to enter into the local schools. They are facing educational and social discrimination. Education minister Dr. Dipu Moni mentioned that the Rohingya people in Bangladesh should be educated in their mother tongue which is mostly Burmese or Urdu. In Bangladesh, most of the public-school use Bengali as a medium of instruction and teach English as one the compulsory subject. Bengali, Burmese, and Urdu- all have different language scripts and these languages are completely different from each other. UN Special Rapporteur mentioned that Rohingya would not go back to their country soon. So, if the Rohingyas are educated in their own language which is not Bangla then Bangladesh will get a huge number of the unskilled population who would not be able to work in Bangladesh because of their language and education reasons. This research will focus on the current educational situation of Rohingya refugees in Bangladesh, with special emphasis on language and education policy and practice.

The purpose of this research is to describe and examine the present educational situation of Rohingya children in Bangladesh. The emphasis will be on the medium of instructions in terms of language use in the non-formal camp classrooms. It will focus on policy planners' views, teachers' views, and classroom observation and also will use historical data and recent newspapers. It is expected that the result will be an in-depth picture of challenges facing the Rohingya children in an educational context. This research will provide to the researchers inside

from the Rohingya camp of Bangladesh regarding the language and education policy of Rohingya children and also help them to understand the complexities and difficulties that exist in the educational system in Bangladesh. Results suggest that Bangladesh should allow humanitarian agencies to implement an appropriate education response and ensure that Rohingya children can access an accredited, certified education.

Janet Jarvis

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Crossing Disciplinary (and Contextual) Boundaries: Empathetic-Reflective-Dialogical Restorying - A Teaching- Learning Strategy in Higher Education

This paper presents Empathetic-Reflective-Dialogical Restorying as a teaching-learning strategy which can be employed to facilitate trans-disciplinary boundary talk. Both self-dialogue and self-narrative are used to create open space stories. This provides a platform for restorying as Bachelor of Education Honours in Social Sciences in Education students, at a South African Higher Education Institution, engage in the space *between*, *across* and *beyond* academic disciplines. Three small-scale research projects conducted with three different student cohorts (2017 – 2019) have shown that this strategy has been effective in engaging students in trans-disciplinary dialogue. Human Rights in Education can provide a framework for trans-disciplinary boundary talk as a possible way to create cohesion among the multiple disciplines embedded within the Social Sciences in Education. The first cohort (2017) focused on gender (in)equality and the second (2018), on the right to bodily self-determination. In 2019 the same teaching-learning strategy was employed to cross not only disciplinary boundaries, but also geographical/contextual boundaries. The 2019 South African cohort of students, together with students in a Norwegian context, engaged with one another focusing on what constitutes good teaching practice. Restorying takes place as students engage in a safe space in Communities in Conversation, Communities in Dialogue and Communities for Transformation. This created cohesion among both academics and students in the Social Sciences in Education. Students expressed the view that employing this teaching-learning strategy has the potential to be transformative for both the individual and indeed, for the classroom and possibly also for the greater society. This paper argues for the inclusion of Empathetic-Reflective-Dialogical Restorying in Higher Education teaching-learning contexts.

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Student Preparedness to Transition to E-Learning during COVID-19 in the UAE from Learner Perspectives at a Health Science College

The 2020 COVID-19 crisis, officially declared a pandemic by the World Health Organisation (WHO) on 11 March 2020, had a major impact across several sectors, education being no exception. Globally, the pandemic resulted in a mandatory shift from traditional face-to-face education methods to electronic learning (E-learning) and teaching. The targeted educational institution is situated in the Middle East. This study highlights the preparedness for E-learning from students' perspectives, given the impact of the dramatic changes to learning methods following the COVID-19 outbreak.

The study population comprised a convenience sample of 94 female university students at a Health Science college in the Middle East. All participants were nursing students who had transitioned from face-to-face on sight learning to E-learning due to the pandemic. 96% were between 18-24 years old, and 80% were first- or second-year students. Although the target was to recruit more participants, only 94 could be identified as the study was conducted during lockdown.

Due to the sudden to E-learning, a descriptive approach was adopted for this research. A mixed method approach was used for this research. Revised McVay Readiness for E-Learning Questionnaire was used to collect data as this tool had been tested by Smith, Murphy, and Mahoney for validity and reliability. Both open-ended and closed questions were added to the instrument to match the needs of this research, and the questionnaire was distributed electronically. Participants received the questionnaire link via email and submitted their responses electronically. All participants were provided with an information sheet that explained what the study was about. They were given the option to withdraw from submitting the survey at any point in time if they didn't feel comfortable continuing with it.

Various data analyses were conducted using several descriptive and other epidemiological techniques. STATA20 was used to code and analyse quantitative data and reported as descriptive statistics. Content analysis was conducted to study and analyse qualitative data. Open-ended questionnaire responses were grouped by themes and further segregated in sub-groups.

87% of the participants had no previous E-learning experience until COVID-19 pandemic broke out, however, 55% of participants reported that they were prepared for the transition to E-learning most of the time. 42% of the participants stated that the quality of E-learning was equal to face-to-face learning during most of the class time. 15% indicated that E-learning was not effective enough to keep the learners engaged, while 43% considered both modes of learning comparable in terms of efficacy. Several students reported poor and lagging transmission as a major challenge. Over half of the participants reported discomfort in online written communication with their peers and instructors. Time management was highlighted as another major challenge by 64% of the participants as their instructors were not physically around. Participants reported lack of privacy as another major concern posed by E-learning. They also reported the usage of the camera as tiring and distracting during online exams.

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&

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A Holistic Approach to Interdisciplinary Learning among Social Work and Design Students

From the framework of general systems theory, two distinct fields of study were bridged to form an interdisciplinary learning experience. Students in Residential Design and Social Work were partnered to form a consultation team that addressed aspects of evidence-based practices related to improving the quality of life for individuals and families with specific health-related limitations or conditions. The authors developed the course content and project to bridge the learning process between bachelor and master level students as well as provide an experiential opportunity to test skills in real-life settings. Using student-to-student educational consultations, the master-level social work students worked with bachelor-level design students to develop a residential house design. Each team worked from an interdisciplinary approach, developing knowledge about the roles and responsibilities of their peers as they move into professional careers. In addition to assigned roles as residential designers and social workers, students were assigned roles as researchers to complete research related to the needs of each case, and the local, regional, and national policies that might assist or restrict the work of the design team. An additional team of master-level social workers developed a video training on general systems theory. This was provided to both disciplines to bridge the two groups, forming a common foundation for their work.

This project promoted an interdisciplinary learning environment using case scenarios and peer-to-peer learning. The experiential process provided a robust learning opportunity readily translated to real-world professional experiences (Carvalho & Santos, 2020; Rosenbloom & Nemec, 2021; Topping & Ehly, 1998).

Ghina Kalaji

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Gifted and Talented Programs for High School Students in the UAE

The purpose of this research is to explore the influence of high school gifted and talented (GT) programs on students' self-concept from the students' perspectives in the UAE. A qualitative, exploratory, interview-based study was employed to answer the following question: How gifted and talented programs influence students' self-concept? Ten GT students from grades 8-12 were purposefully selected from three different GT programs in UAE schools. Data were collected using semi-structured interviews. Analysis revealed that students exhibited positive self-concept in three dimensions: general, academic, and social. The GT programs in the UAE seem to influence students' self-concept positively by nurturing their strengths, valuing their efforts, developing their skills, and emphasizing their future roles in the community, while the Big-Fish-Little-Pond Effect seem to be absent due to contextual reasons.

George Kamberelis

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Interest-Based, Purpose-Driven, Responsive Literacy Learning and Teaching

Most current approaches to supporting children's literacy learning (especially children who have been identified as "struggling readers/writers") are highly structured, teacher-driven, divorced from children's interests and desires, and not especially motivating or engaging. Despite this trend, highly effective literacy instruction seems to require both knowledge of strategic literacy learning and knowledge of relationship building. For five years, we developed and studied what we are now calling an interest-based, purpose-driven, responsive approach to literacy learning and teaching. This approach emerged from the haunting sense that, because literacy learning and teaching are complex, dynamic, affect-laden, and relationship-dependent, there might be more effective ways to work with children who experience difficulties learning to read and write. Despite being trained in skills-focused, assessment-driven clinical practice, we came to realize that this approach discouraged relationship building and disrupted engaged learning. In response, we encouraged children to select their activities and projects, and we embedded instruction and assessment within these activities and projects. We also focused on children's affective investments, the developing relationships between tutors and tutees, and how the "work" done in each tutoring session was related to these developing relationships.

Seventeen tutor/tutee dyads participated in the study. Dyads typically met weekly for between one and two years (with exceptions for school breaks, illnesses, etc.). All tutoring sessions were audio- or video-recorded. All artifacts produced by tutees were collected. We closely examined the entire set of interactions between each tutor and tutee looking for instances of interactional harmony and instances of interactional dissonance. We also mapped trajectories of literacy learning and development for each tutee.

Findings from this research demonstrated that our approach was very effective. Tutees carried out many spectacular projects (e.g., e-cookbooks, Minecraft realms, iMovies, screenplays, fictional stories, and information books on topics of interest). Additionally, their literacy learning improved tremendously; in fact, many tutees demonstrated several years of growth in a single year. Tutors surpassed themselves too, gaining many valuable insights about the constitutive connections

between relationship building and strategy instruction. Findings also suggested powerful ways to embed “as needed” skills instruction on key dimensions of literacy (e.g., decoding, spelling, grammar, vocabulary, fluency comprehension) within meaningful and authentic literate activity directly related to children’s interests and goals. Finally, findings suggested the importance of providing tutors not only with increased knowledge of effective literacy strategies but also strategies for building microcultures of care where relationships are viewed as just as important as learning and development, perhaps even a prerequisite for learning and development.

Based on these findings, we conclude that it makes good instructional sense to attend to children’s interests and purposes when designing literacy instruction and to engage in improvisational, responsive teaching rather than highly structured, pre-planned, teacher-driven practice.

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**Religion, Culture & Society:
The Key to Understanding Diversity**

Britain can certainly claim to be a pluralistic, democratic society hosting a population as diverse in 'race' and ethnicity as it is in faith, belief systems and cultural traditions. Therefore, it is crucial that different communities within pluralistic Britain not only understand each other's belief systems, practices and cultural traditions, but also accept and support difference. In accomplishing this aim, it is equally vital that the youth are educated about the diversified and multi-faceted nature of the society they live in and global humanity around them. A central tenant of Religious Education (RE) is engaging in critical and evaluative analysis of different faith systems and cultural heritages. Through studying RE, we can begin to appreciate and understand not only traditional heritage, values and cultural practices, but also the nature of religion and belief systems in direct relation to humanity and human development. This phenomenon applies historically to the development of social and cultural settings worldwide but also underpins the acquisition of knowledge and the meaning of law, sociology, politics, economics, education, philosophy, art, literature etc. Basically, Religious Education provides excellent preparation for real life engagement living and working in a pluralistic society and an ever growing global community. Further, RE informs past, present and future understandings of difference and developments globally and gives us an insight to current events that affect the global community; for example, the 2018 insurgencies in Thailand, the Syrian refugee crises and asylum seekers escaping the near genocide in Sudan.

Accordingly, RE is part of the National Curriculum in England and Wales and therefore compulsory for students in primary and secondary state funded schools. However, RE is not compulsory at General Certificate of Secondary Education (GCSE) Level like other Humanities subjects such as History or Geography. This is a direct consequence of Government reforms including the introduction of the English

Baccalaureate¹ (EBacc), which push students towards Science, Technology, Economics, Math (STEM) subjects. The Baccalaureate is a rather deplorable mechanism to measure education in league tables. The exclusion of RE from the EBacc is having extreme and damaging effects. Not only does this foster a real lack of awareness of valuing difference, but also lack of awareness of how to support diversity and why community cohesion is important. RE engages with inter-faith and inter-cultural dialogue, without it the youth are prevented from truly understanding and appreciating multicultural societies or global events.

I would argue the short-sighted reform brought about by the previous coalition government and supported by the current government undermines policies such as community cohesion, social inclusion, multicultural value of difference etc. and instead fuels ignorance, mistrust, division, intolerance, fear and social unrest. Religious Education ensures students learn about different ways of life locally, nationally and internationally, generating genuine understanding of Other – and we need it in our schools!

¹The English Baccalaureate (EBacc) is a performance measure for students in secondary schools who achieve a Grade C or higher in core STEM subjects

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&

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The Application of Differentiated Teaching and Learning: Potential Challenges and Obstacles

The content of this paper is part of a research conducted in Cyprus during the period December 2017-June 2020. The survey involved 419 primary school teachers. The main goal was to investigate the role of teachers (Koutselini, 2014) and the potential obstacles in the application of Differentiated Teaching-Learning (DTL) in mixed – readiness classrooms. Twenty teachers were observed (ten trainees and ten non-trainees in DTL), during their teaching practice at regular intervals. They took part in relevant interviews. At the same time, with 399 other teachers, they completed a questionnaire. The motivations and disincentives for participating in them and their basic training needs were identified. The trainees evaluated the training programs they attended on a Likert scale 1-5 (Papanastasiou & Papanastasiou, 2005). The non-trainers pointed out the reasons for their non-participation in the training programs. The SPSSv.21 program was used for the quantitative analysis and the inductive method for the qualitative analysis. It was concluded that they need substantial professional development for knowledge updating (Koutselini & Pyrgiotakis, 2015). Also, It seemed that the organizers of training programs should organize effective training programs.

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Our Inner Note-Taker - How we Search for Information in Previously-Read Texts

Do our brains “map” a text, or take notes, while we’re reading? What guides us when we return to the text to search for information? Do efficient readers search for information differently than weak readers?

I have explored what people do when they search for information in a long previously-read text. This activity is performed by most readers on a regular basis, for work, studies, and leisure. Yet it has hardly been explored in the existing body of research on reading and memory.

Adult participants were given a long narrative non-fiction text to read. A few days later, they were given reading comprehension style questions. While the readers were answering the questions, they were engaged in a Think Aloud protocol, explaining how they were searching for the information needed to answer the questions. Thematic Analysis was used to evaluate their answers and explore themes that would reveal effective search strategies.

The findings and analysis revealed fascinating insights into chunking, skim/scan and the use of schema in memory. More importantly, a new, apparently heretofore unreported reading phenomenon has been uncovered. It's being called "peripheral processing" and is opening up a new dimension in how we perceive reading and memory.

There are promising indications that efficient readers employ more effective search and memory strategies - both conscious and unconscious - to look for information in texts, than their weaker counterparts. The intention is to formulate practicable suggestions and strategies for both weak readers and educators to utilize.

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Qualitative and Qualitative Analysis of Mathematical Bishop's Activities in Kindergarten's Prospective Teachers' Field-Report Observations

To develop kindergarten's children knowledge of mathematics, prospective teacher students require pedagogical content knowledge (PCK) about Bishop's mathematical activities: counting, locating, measuring, designing, playing and explaining (Bishop, A.J., 1988). Students need the knowledge in teaching and learning mathematics to interpret mathematical situations, to identify ways of enhancing children's learning of mathematics. The purpose of this study is a systematical survey of field-report observations made by three cohorts of our prospective teacher students of three consecutive semesters in a teaching and learning course "Kindergarten's Mathematics". The observations had to be focused on opportunities for Bishop's activities in observed kindergarten environments. In planning the study and analyzing it's results we laid emphasis on Action Research Theory. The concept of PCK was analyzed here from three points of view: (1) students perceiving mathematical situations in which kindergarten's children engage; (2) students' interpretations of possibilities for using Bishop's mathematical activities; and 3) how student's observations vary depending on our formulation of their observational exercise. For evaluation of our results, we have chosen three gradational levels of how deep prospective teacher students described in their field-reports mathematical situations for Bishop's activities from the point of view of whether the students: a) did not see a possibility (es) for some of these six activities; b) just mentioned possibilities for one or the other activity in their observation; or c) gave a wider presentation of teaching and learning ideas in connection with one or the other Bishop's activity, which they observed. We have collected students' field-report observations from three consecutive semesters for an anonymous analysis. Each cohort had four groups of prospective teachers of about

20 students per group. We have chosen to analyze about 180 field-report observations which included 60 randomly chosen students from each cohort. The only difference between the three cohorts was the described variation in how detailed the instructions to students were given from us: cohort 1) prospective teachers did not receive an explicit formulation to observe Bishop's activities, they were simply instructed to observe the means by which children's mathematical knowledge was developed, at the observed kindergarten; cohort 2) we orally specified to students that they should look for and report for Bishop's activities; and finally for cohort 3) we specified in writing that students should specifically look for and report for Bishop's activities. These differences in formulation of the field-report purpose could influence prospective teachers' understanding and interpretation the purpose of the exercise. None of other components of the course have been varied between three cohorts. We will present the statistical analysis of the comparison of results of field-report observations for cohorts 1, 2 and 3. The results will indicate students' PCK about Bishop's activities and how their observations depended on our formulation of the observational exercise. The results will give us the grounds for deciding how we can improve the course's presentation, it's layout and how we can help our students to improve their PCK outcome.

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&

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Fun Human Resource Management Experiences and Learning from Them

The attractiveness of nursing has been severely tested during the pandemic at Finland and that is why it is important to develop and support well-being at work in work communities. The use of humor in the work community can lighten the atmosphere and support well-being at work. Not everyone understands all kinds of humor and it is not even possible, but the positive use of humor can be practiced in a free and confidential atmosphere. The appropriate use of humor at work can be learned through everyday observations. Everyday learning takes place through reflection, experimentation and learning from co-workers and supervisors.

The purpose was to describe the fun human resource management experiences of professionals who studying social and health management at the University of Applied Sciences and what they have learned from them. The data consists of 34 narratives collected in 2016–2017 from professionals studying management of healthcare and social services at a University of Applied Sciences. The data were analyzed through inductive content analysis.

The results of the study included two categories: the strengthening of community and social capital, and management that increases well-being at work. Participants understood humor as an important part of increasing well-being at work. Overall, the study suggests that, the use of positive humor can be recommended to supervisors in the social and health fields. Fun human resource management experiences and learning from them, was often experienced outside of actual working hours at a leisure event organized by the employer. From this it can be concluded that work communities also need joint activities organized by the employer outside the actual working hours.

Positive use of humor is seen to increase many positive things that have an impact on well-being at work and staying at work.

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Students' Mental Health and Wellbeing While Living in Pandemics in Albania

This work represents a qualitative research design conducted during Fall 2021 when universities were about to open for students and the academic year to continue physically in campus. The research objectives consisted in: (i) Identification of the major stressors of students in Albania during COVID-19. (ii) Analysis of how academic issues are related with students' wellbeing and priorities and (iii) Identification of the support systems students use and would use in times of related difficulties. The research questions of the study are as the following: Which are the major stressors of Albanian students during COVID-19? How are academic issues related with students' wellbeing and other priorities? How vulnerable are students to be helped and supported in times of crises? The method of study used was the semi-structured interview administered to 25 Albanian students from different majors and universities in the Albania. Thematic analysis of the data provided results reporting that students' psychological wellbeing had been compromised during the pandemic and was associated with relevant stressful reactions such as eating and sleeping disturbances, social anxiety, generalized anxiety and continuous worries and fear related to school, career, finances, social connections and the future. Students reported to have had a higher academic performance which is not always in line with the level of knowledge acquired. Referring to our data, students have developed coping strategies generally coming from experience and learning from others, however, evidence regarding the effectivity of these coping strategies is still questionable. In times of crises and difficulties, students have the tendency not to ask for support or professional help. Findings show that students have a constructive scientific approach regarding COVID-19 vaccination but they are angry about making vaccines mandatory.

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Reimagining the Basic Communication Course for the Post-COVID-19 Environment

This paper will analyze the learning outcomes of a redesigned basic communication course offered in a hyflex large lecture format during the 2021-2022 academic year in response to the post-COVID-19 environment. Specifically, this study focuses on how the principles of effective course design were used to offer this course for this unique format, the specific learning outcomes compared to the previous versions of the course and the student experience. Based on the lessons learned from this study, the paper offers recommendation regarding the relevance and utility of this specific format as well as the need for faculty and technology resources.

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Three Approaches of How to Address Controversial Issues in Education

A recurring idea in the educational debate is that we live in a time of polarization, where people hold radically different beliefs, which makes it difficult for us to communicate with each other (e.g., Noddings & Brooks, 2017; Lukianoff & Haidt, 2018; Boghossian & Lindsey, 2019). It is, however, the teachers' responsibility to address the *controversial issues* that tend to divide individuals or groups. Such issues may, for example, include moral dilemmas, extremism, terrorism, politics and religion (e.g., Moore & Kyser, 2014; Sjöborg, 2015; McDonough, 2016; Revell & Christopher, 2021).

There is no generally accepted definition of *controversial issues* in the research literature. Most definitions, however, contain what we describe as emotional, cognitive and evaluative elements. Hence, controversial issues are matters about which individuals or groups tend to get upset and disagree, about which individuals or groups tend to hold conflicting explanations, and about which individuals or groups create solutions based on different values (e.g., Cooling, 2012; Hand, 2008; Ljunggren et al., 2015; Stradling, 1984; Lindström & Sullivan, 2021). Which aspects of controversial issues researchers emphasize seem to rely on a variety of factors, however, we argue that it depends on how they perceive the principal aim of education.

In this paper, we will provide a division of three educational approaches to controversial issues, which are prevalent in the research literature and among teachers in their pedagogical practices. If the principal aim of education is:

- that students should develop without being disturbed by unsettling or threatening content, it is important that the teachers can create safe learning environments, which is characteristic of an emotional perspective of controversial issues (see: Stradling, 1984; Hickey, 2016; Cush, 2007; Lukianoff & Haidt, 2018).
- to develop the students' ability to think and act rationally, they should be provided with opportunities to review arguments from different points of view and learn how to make well-

grounded assessments, which is characteristic of a cognitive perspective of controversial issues (see: Hand, 2008; Boghossian & Lindsay, 2019).

- to contribute to the pupils' ability to feel empathy, look beyond people's differences and work for a fair community, they must be exposed to specific personal stories that can facilitate their understanding of others (see: Stradling, 1984; Cooling, 2012; Noddings & Brooks, 2017).

In this paper, we will provide examples of these positions and discuss to which extent they are attainable and valuable ends to strive against in an educational practice.

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Relationships among Mathematics Teachers' van Hiele Levels, Teaching Styles and Students' Achievement in Geometry

This study investigated the relationship among teachers' van Hiele levels, teachers' teaching styles, and students' achievement in geometry. Using non-experimental quantitative correlational design, the van Hiele levels and teaching styles of 30 grade 9 mathematics teachers were correlated with their students' achievement in geometry.

The results of the Chi-Square Test showed that there is not enough evidence to identify a significant association between the teachers' van Hiele level and teaching style based on clusters. The ANOVA results revealed a significant difference between teachers' van Hiele levels and students' achievement. Post hoc comparisons showed that the difference is between the achievement of students whose teachers are operating at level 5 in the van Hiele level than those students whose teachers are operating at level 2. For this result, a substantial effect size was computed at 0.6429 or 64.29%. Goodman and Kruskal's gamma test showed a weak positive correlation between teachers' van Hiele level and students' achievement which was statistically significant. However, the association between teachers' teaching styles and students' achievement showed no significant difference when the teaching styles by clusters made by Grasha was used. However, in another analysis based on highest mean score of teaching style of teachers and students' achievement, the results indicated significant effect. The estimated omega squared ($\omega^2 = 0.39$) indicated that approximately 39% of the total variance in students' achievement is attributable to difference between the teaching styles based on highest mean scores. Post hoc comparisons using Games-Howell test indicated that students whose teachers have high mean score on Expert style have a significantly higher achievement than students whose teachers have high mean score on Formal Authority style. Those students whose teachers have high mean score on combination of teaching style have significantly higher achievement than those students whose teachers have high mean score

on Formal Authority style. However, Goodman and Kruskal's gamma test showed no correlation between teaching style and students' achievement.

This study highlights that it is important to capitalize on teachers' van Hiele level of geometric thinking as it has a greater influence on student achievement compared to teaching style. Developing teachers' geometric thinking ability at the expected levels in order to improve students' achievement may require trainings, further studies, or curriculum improvement for pre-service teachers. Moreover, investigation on content areas other than geometry while determining which grade level has student achievement started to decline is recommended.

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Social Justice Leadership: DisCrit in Action

In the literature on training social justice leaders, one finds consistent suggestions for necessary skills and attitudes (Capper, Frattura, & Keyes, 2008; Frattura & Capper, 2007; Theoharis, 2009). These attributes include democratic participation of all stakeholders, clear vision of equitably including all learners, and systematic analysis of enabling and disabling organizational structures. Whereas students with disabilities are consistently identified as one of the subgroups of students who should be fully included, the central role of ableism per se has not yet been addressed. The emerging DisCrit literature (Annamma, Connor, & Ferri, 2016) explores the ways in which disability is raced and race is disabled in education. DisCrit not only seeks to destabilize ableism and normalcy, but also to recognize how deeply racialized are the conventional definitions of normal and deviant, both in terms of learning behaviors (Mendoza, Paguyo, & Gutiérrez, 2016) and social-emotional behaviors, most often centered on compliance (Broderick & Leonardo, 2016). However, none of these works address the particular role of school leaders in these practices.

Shields (2018) offers a critical approach to transformative school leadership, provoking leaders across the nation to rise against the inequities within their institutions. Shields argues that leaders must adopt a transformative leadership approach, a critical, socially aware, and equity-driven method. That method highlights the harmful effect that homogeneity and its normalization can have on intellectual communities, including the othering and exclusion that result from this perpetuation of elitism and privilege.

This presentation will extend this conversation by applying a DisCrit amendment to Shields' (2018) framework to unpack the ontological and epistemological assumptions in oppressive schooling structures. This work illustrates that Shields' (2018) tenets for transformative leadership present a helpful matrix for laying out how to apply the anti-racist and anti-ableist ontological and epistemological reframing necessary to dismantle education and reimagine schooling communities that are inclusive. Into those tenets, we also weave Mackey's Indigenous ethical framework that foregrounds relationship as a primary condition of being, and the epistemological principle that "despite differences, all belief systems are valued and allowed without forcing those systems on others" (2015, p. 167). In conclusion, there will

be a discussion of how to apply this framework to leadership preparation to develop and strengthen ethical and moral competencies necessary to push back against the ableist and racist rhetoric seeking to discredit inclusive, affirming, and welcoming school environments.

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Quantum Drama as *Theatrum Mundi*

Our understanding of the application of quantum theatre principles to educational settings is addressed in the author's paper "Quantum Drama: Transforming Consciousness through Narrative and Roleplay." The possibilities inherent in an approach to theatre performance are provided by new developments in our understanding of quantum physics. Paul Johnson has demonstrated that "quantum mechanics can be used to develop an analytical framework for writing about live performance (Johnson 2012, 185). "Quantum Drama as *Theatrum Mundi*" asks the questions: "What would theatre look and feel like if we could expand our sensory perception to perceive the macrocosmic universe as both a waves and particles?"; and "How to we encourage this quantum perception of theatre in actors and in audiences?"

Recent experiments in quantum physics have demonstrated that our consciousness can effect changes in reality (Radin 2016). How, then, can quantum consciousness help us create theatrical worlds that can communicate with audiences? Dance, music and ritual have often been employed in theatre to help create experiences that may seem inexplicable to actors and audiences in a classical physics-based view of reality.

Key principles of quantum physics that can influence performance are uncertainty, non-locality and the time-space continuum. In the microscopic world, uncertainty exists since scientists cannot determine the speed and the location of an electron at the same time. Uncertainty manifests in theatre when we refrain from judgment. Coleridge's "suspension of disbelief" speaks to our ability to suspend judgment to appreciate the supernatural character of poetry. Similarly, we are encouraged to suspend judgment in Keats' notion of negative capability, which occurs "when a man is capable of being in uncertainties, mysteries and doubts without any irritable reaching after fact and reason. In quantum physics, the theory of retrocausality suggests that effects can precede their causes, and a later event can affect an earlier one. An example of retrocausality is the play *Incendies* (*Scorched*) by Wajdi Mouawad. We examine the performance of a devised play, *Wings*, based loosely on Euripides' *Iphigenia in Tauris*, codirected and performed at the Theatre of Apollo and Dionysos in Athens.

Quantum theatre principles have widespread implications for arts education in schools and communities, especially the reliance on the judgments of ability provided by standardized testing. When quantum theatre principles are adapted to educational settings, there will be an increase in mindfulness, creativity, and learner-directed education. This paper will also share insights gained from performances of Shakespeare plays with young audiences, examined with a quantum theatre lens. The paper concludes with a set of guidelines for directing a quantum theatre production with young people.

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Creating Modern Data Lake Automated Workloads for Big Environmental Projects

Data Lakes provide a modern approach to persist data with heterogenous structure for different types of analysis. It offers centralized repository that allows to store all structured and unstructured data at any scale.

Big environmental projects nowadays include data from different sources, that need to be approved, managed, processed and later shared for specific analysis. Data Lake automation flows offer one modern approach to manage data in similar solutions. This technology can be used from any kind of big organization: government, non-profit or commercial.

This paper demonstrates a methodology how to build modern repository and implement automation flows to approve, process, analyze and share data for big environmental projects. In the research are included real life cases, demonstrated with prototypes using Azure Data Lake and automated flows with Microsoft Power Platform and Azure Data Factory.

Automation flows include cloud workloads as well as Robotic process automation (RPA) flows that enables engineers and non-coders alike to automate processes and tasks across desktop and web applications.

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&

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Being Female and At-risk in Mathematics: A Phenomenological Study

The poor performance of learners in mathematics has been widely investigated across cultures. While many students find the subject difficult and demanding to a certain degree, the at-risk learners experienced how it was to struggle and fail in that course in grades nine and ten. Their year-end failing grades highlight their lack of proficiency in mathematics. However, it does not paint a full picture of how they faced the challenges in learning the subject, as rich descriptions cannot be deduced from quantitative values and studies. This study aimed to provide a description of the lived experiences of eight female at-risk high school learners, particularly on how they coped with the difficulties in learning mathematics. The descriptive phenomenological method was used to explore the “whatness” of an at-risk learner from the lens of those who experienced the phenomenon of being female at-risk high school learners in mathematics. Being at-risk learners whose encounters with success in mathematics was minimal, they made use of different coping strategies. Two themes emerged from the narratives: maladaptive coping strategies and adaptive coping strategies. On one hand, the maladaptive coping strategies, withdrawal of efforts and blame, allowed the learners to protect themselves from the source of their pain. On the other hand, the adaptive coping strategies focused on how the at-risk learners addressed the source of their pain. The meaning units under adaptive coping strategies highlight how the learners attempted to bridge the gaps in their mathematical skills and knowledge.

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&

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Evolution Discovery in Textual Data

In the Knowledge Engineering field, Bruno Bachimont introduced knowledge as the meaning assigned to a symbol in a particular context. His definition is based on Saussure's semiotic representation of knowledge that relates an activity to a specific symbol. These definitions show the necessity of context in assigning meaning and identifying the activity. Knowledge discovery aims at identifying knowledge from several sources and representing it as ontologies and knowledge bases. For instance, to extract knowledge from textual data, most approaches break texts into sentences and analyze each sentence individually which limits the Knowledge Discovery from documents. Most of these techniques do not consider the context of the knowledge production, as activities and domain environments. Our approach aims to provide context-awareness to enhance knowledge discovery in texts. One of the most important dimensions of the context in the context-awareness field is temporality and evolution detection. Some researchers have studied temporality in news articles focusing on the past, present, and future forms of verbs along with the speed nature of the verbs. Other used event semantics to identify the spatiotemporal aspect of the events identified within a sentence or are based on vectorizing approaches. Some studies focus on the evolution between multiple texts through time to evaluate the changes by comparing topics and word frequency. In the context-awareness field, the evolution of the context can be distributed in multiple categories: static or dynamic, discrete or continuous. It is also related to a specific time. Our challenge is to identify the nature of the evolution in texts while identifying those multiple characteristics. While some texts are used to narrate multiple events, others are used to inform, describe, argue... In the context-awareness perspective, narrative texts are considered as dynamic while descriptive texts are more static. Our purpose is to identify and represent the evolution to improve knowledge discovery based on identifying and analyzing semantic relations in this type of text. We use then pattern matching and semantic relation extraction algorithms for identifying contextual elements and their relation. But our focus is studying the temporal elements in the text and identify the

evolutions in states and events. We aim to identify events, descriptions, causality using verbs and connectors. We also classify the purpose of the text and provide an appropriate representation of the extracted information. We use temporal connectors along with temporal elements such as dates in order to provide a rich structured evolution representation. Other than identifying the evolution within the same text we aim to compare the identified Knowledge between multiple related texts. Our definition of related text is based on the identified domains, actors, objects, locations and temporality which are the different dimensions of the context. Related Texts are texts with common dimensions and we aim to identify the evolution of knowledge regarding the evolution of the context. Our approach is validated in the industrial marketing domain.

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A Flipped College Classroom Approach to Facilitate Spanish Oral Language Skills

Research indicates that a common problem found in foreign language classrooms is the reluctance to speak. Many reasons have been shown to contribute to this including the fear of speaking in front of others, low language proficiency, negative evaluation, lack of confidence and preparation and the fear of making mistakes (Hamouda, 2013; Graham, J. 2006).

Additional research has continuously shown that classroom participation has been shown to increase the student achievement (Liu, 2005). However, teachers have a tendency to emphasize more traditional approaches to foreign language learning that involves rote memorization and student participation only when they are called upon (Hamouda, 2013). Therefore, it is incumbent upon educators to facilitate more oral participation in order to bridge the gap between content production and oral use of language to increase overall student achievement.

To this end, the present study sought to investigate the effectiveness of a modified instructional technique with goal of targeted classroom time devoted to small group application of language. Approximately 70 undergraduate students enrolled in three different sections of Spanish 1 at a small private college in Florida, United States, were engaged in a curricular technique in which a flipped classroom approach was used. The researchers set expectations and emphasized genuine reasons for the students to speak in the target language. This collaboration between two different disciplines: Foreign Language and Education serves as a model to enhance pedagogy and content.

In the Spanish courses, students completed homework on content, grammar, and vocabulary outside of the regular class and then were expected to use their skills and demonstrate orally their competency with teacher direction and peer groups. The communicative approach used stressed the importance of using meaningful language. Grammar focus in the classroom results in failure to produce proficient speakers mainly because students become focused on memorizing rules that might be hard to figure out. This is not to say, grammar is not

important. Grammar provides the structure needed for language structure and must happen outside of class with online classroom assignments, reading the chapter and written compositions that will lead to speaking. The objective of this research, therefore, was to provide evidence that students can become better language learners by leaving behind traditional grammar-based teaching methods.

Assessment components of students' performance included video analysis, teacher observation of self-confidence, skill growth in fluency, pronunciation, vocabulary and contents. Qualtrics software was used at midterm and end of course to show student progress on all of these variables and reflection and modification of the practice is documented. Preliminary results indicate that students preferred this method over traditional lecture on grammar and content and were more confident in speaking during class time.

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Supporting Students with Autism: Strategic Approaches for Enhancing Communication, Socialization and the Effective Use of Relationships in School Settings

The number of school-aged students diagnosed with autism spectrum disorder (ASD) has risen exponentially over the last two decades. According the Centers for Disease Control (CDC), the most recent estimate is that one out of every 59 children, or 16.8 per 1,000, have some form of autism. Students with ASD present unique challenges considering their deficits in communication, socialization, and the effective use of relationships. Teachers report the need for more training and support in serving students with autism, particularly in the areas of communication and socialization.

This need is more pronounced given the practice of placing students in general education settings (inclusion) with teachers who have no special education training or prior experience with the students they are receiving into their classrooms. Implementing evidence-based interventions that effectively support students with ASD is set forth in the Individualized Education Plan (IEP) and must be carried out by professionals with the requisite skills to enact that plan. The absence of appropriate intervention by teachers serves to diminish the opportunities for students on the spectrum to reach their full potential. This paper sets forth a plan for practical, evidence-based approaches that utilize relationship-based strategies to support the optimal development of students on the autism spectrum.

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**Truth Matters:
Race-Conscious Measures in Schools and the Parents
Involved Case**

When the United States Supreme Court decided the much-anticipated *Parents Involved in Community Schools v. Seattle School District No. 1* case, the media frenzy was instantaneous with various commentators and reporters stating that the Court had in fact banned all uses of race in public schools. The sad reality is that those news pieces were probably the only information and understanding most school administrators and teachers would ever get on the case. In fact, the author has found that a number of school administrators have this misperception of the decision, fueling a growing hesitancy to implement any race-conscious measures in their schools. Many of the media reports relied on Chief Justice Roberts' statement quoting *Brown v. Board of Education* to say that "[t]he way to stop discrimination on the basis of race is to stop discriminating on the basis of race." (p. 2768). Some of the news media outlets reported this statement as the holding of the Court, while in actuality this was merely a part of the plurality opinion written by Chief Justice Roberts. This presentation examines the *Parents Involved* decision. The author's analysis reveals that the use of race-conscious measures in public schools is not all unconstitutional. School districts can use race-conscious measures if they comply with certain principles. This article is a considerable outgrowth of the work the author presented at Stanford Law School. The author hopes to help clear up the widespread misperception among academics and practitioners that *Parents Involved* rendered race-conscious measures absolutely unconstitutional. In addition, academics would profoundly benefit from the information we present in educating their students on how to constitutionally implement race-conscious measures.

The purpose of this presentation is to examine the continued constitutionality of voluntary race-conscious measures in schools, in light of the *Parents Involved* decision. The author uses traditional legal analysis and an extensive literature review as its mode of inquiry. Primary and secondary sources of data and legal precedents at federal and state levels, including concurring and dissenting opinions have been collected and analyzed to determine the constitutional implications of *Parents Involved* for voluntary race-conscious measures. The author also analyzes various issues of first impression

pertinent to race-conscious measures identified from the constitutional inquiry. *Parents Involved* as a landmark case in public school racial jurisprudence provides new legal and policy guidance for schools seeking to implement or continue the voluntary race-conscious measures.

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Talent through Higher Education in Kenya: A Case of Universities in Nairobi City

Talent development is a strategic process of changing an organization and people within it through formal and informal curriculum. Thus, most organizations are becoming more vibrant in developing and managing talent, especially among the young people in order to attain and maintain a competitive advantage within the vastly growing labor market. Currently, universities across the globe are placing a lot of emphasis on talent development as a means of nurturing future leaders by introducing academic courses that are in line with talent development and management. This paper analyzed various strategies that are being employed by universities in Kenya to identify, develop, and connect young talents with the labor market globally. The study targeted the 21 Universities (both private and public) operating within the Nairobi City CBD and its environs. The study, guided by the human capital theory applied a mixed method approach (quantitative and qualitative) to collect and analyze data. Four universities (3 private and 1 public) were selected through purposive sampling, while random and stratified sampling were applied to select the respondents. Quantitative and qualitative data were collected from 151 students and four Deans of students through questionnaires and interviews. SPSS was applied to analyze quantitative data, while qualitative data was analyzed thematically. The study revealed that: majority (86.5%) of the students know their talents though hardly identified, developed and connected to the labor market by the university; universities do not currently have any strategies in place to support students in talent identification and development. This study will be used to inform universities on strategies that can be employed in higher education institutions to identify, develop and connect talent with the global labor market.

Melpomeni Papadopoulou

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E-Learning in Adults Education: The Approach of “Integrative” Distance

This communication is part of a long process aiming the evaluation of the integration and the impact that have digital technologies in the educational system. In particular, the empirical research that is presented aims to identify best practices for integrating new technologies in adults' education, while taking into account the specific characteristics of this public.

Adults' education is an ongoing and vital process that does not only include a few hours of teaching. As a result, the experiences lived by adults must be supported by the trainer so that they become a source of learning. The study is based on the context of open and distance learning, which aims to take into account the moments lived by the individuals so that they give meaning to their personal, professional, training and even existential experiences.

Based on a mixed analysis (qualitative and quantitative) of the transcripts of the seven interviews with adults' trainers, it seeks to understand the open and distance learning engineering that can be proposed in this context. The results highlight four main approaches to the support that can be provided by the trainer in distance: (1) didactic support in order to integrate the course contents, (2) support in order to give meaning to the experiences lived outside of the training environment, (3) support in order to integrate the pace and rhythm of the training but also (4) the use of the digital tools.

Teresa Perkins

Assistant Professor, Doane University, USA

US Public School Principals' Job Satisfaction: A Comparison by Region and Gender, School Location, School Level

This study examines United States public school principals' job satisfaction by region and the context factors of principals' gender, school level and school location. This study identifies significant context factors that make a difference to principal job satisfaction for all public schools in the United States. This is the first comprehensive research of US public school principals' job satisfaction by region and by region with specific independent variables tied to contextual relevance. Findings have implications for principal retention, professional development action plans for principals, school continuous improvement plans and higher education preparation for aspiring principals. Fundamentally, this study calls for educational leadership stakeholders to include principals' job satisfaction as an essential element of such systemic foci.

Educational research clearly posits principals support student achievement and teacher effectiveness; this study's exploration is timely, relevant, and necessary. A sample of US public school principals is from the 2015-16 National Teachers and Principals Survey (NTPS) principal data collected by the National Center for Education Statistics (NCES). This study applies one-way ANOVA to compare principal job satisfaction between the four regions and then applies two-way ANOVA to further compare principal job satisfaction by region and one of the three context factors (gender, school level, school location).

Kosmas Pipyros

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&

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Hotels' Cybersecurity Risks Assessment: Proposing a New Cybersecurity Framework

Information and Communication Technologies (ICTs) are reshaping the traditional business methods and processes in the hospitality industry. However, despite their effectiveness, these emerging digital technologies ignite several cybersecurity challenges. Malicious hackers exploit daily system and human vulnerabilities and perpetrate malware campaigns, email phishing frauds and social engineering scams to steal hotels valuable information assets and to impact customers data privacy and integrity. The aim of this research is to emphasize the importance of cybersecurity in the hospitality industry and to propose a particular cybersecurity framework of best practices and techniques to prevent cyber-attacks in hotels. The study's aim is fulfilled through semi-structured interviews to hotel information technology managers. The interviews content enables the retrieval of real case information on cybersecurity incidents and identifies hotel's security vulnerabilities. Furthermore, through the analysis, a new cybersecurity framework of best practices and techniques is proposed. The framework will help hospitality managers to better understand cyber risks, to raise cybersecurity awareness, to minimize cyber threats and to prevent any malicious attacks and data exposure. In conclusion, research findings provide a holistic approach for cybersecurity in the hospitality industry and can be used as a reference point for the development of a future cybersecurity strategy.

Florian Pramme

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Accelerating Production Code through Code Analysis and High-Level Synthesis Using FPGA

Over the last 40 to 50 years, it seemed that improvements in computer performance were increasing at an unstoppable rate. Moore's Law was an early observation that the number of transistors in a CPU doubles every 18 months. In turn, it is becoming increasingly difficult to cool new chips as more power is concentrated into a smaller area. This led to a stagnation in the increase of clock frequencies for new chips, which represented a large part of the improvement in CPU performance. Later, to increase performance even further, the goal was to bundle multiple processing cores on a single chip to distribute the power across the chip and consequently enable better cooling. But not only the thermal conditions, also the design and the composition of the transistors prevent a further increase of the clock in today's processors. A circumstance that leads to dark silicon - unused silicon that is not used constantly or not at its full frequency. When this trend also leveled off, research focused on the use of accelerators. So-called application-specific integrated circuits (ASICs) implement the accelerator as permanent, customized accelerator hardware in silicon. Another, far more flexible method of creating accelerators is to use Field Programmable Gate Arrays (FPGAs), which can be reprogrammed and reconfigured. Within application development for heterogeneous systems, one of the biggest challenges is that a developer not only develops the software, but also has to develop the hardware. This requires knowledge of software and hardware development, which increases development costs and reduces productivity compared to software development alone. FAST (FPGA-based acceleration of software toolkit) implements a semi-automatic synthesis of multi-iterative loops within C/Cpp codes for an FPGA. A multi-iterative loop is a hotspot in a numeric code that is repeated many times and in which a significant portion of the code's execution time is spent. For many codes, it is sufficient to accelerate only their hotspots, but not the large remainder of the numeric code, to reduce overall execution times. In our project, we developed a set of criteria and a methodology to identify which hotspots in a given C/Cpp code are suitable for swapping and synthesis. This is done by static and dynamic source code analyses as well as by a dependency analysis. After identifying suitable hotspots, the corresponding code fragments are semi-

automatically transformed from C/Cpp into synthesizable SystemC for any target FPGA. Essentially, FAST is a new combination of configurable computing, automatic loop parallelization, and semi-automatic FPGA synthesis using high-level-synthesis. As a result, our methodology and toolchain enables numerical code execution significantly faster than with a traditional Intel, AMD, IBM or ARM processor core. In this paper, we address FPGAs that are used as multifunctional accelerators, discuss various methods of programming FPGAs using high-level synthesis that are integrated into heterogeneous platforms. We highlight myths, misconceptions and pitfalls and identify ways for software developers to accelerate their applications without having to draw on years of hardware development experience.

Tarek Saadawi

Professor, City University of New York, USA

Cyberattacks Protection and Challenges

Data breaches are security incidents where confidential information is leaked or stolen from a system without the knowledge or authorization of the system's owner. The cybersecurity industry for the last five years has been dealing with the evolution of internal and external cyber threats.

In this talk we will survey some of the highlighted cyberattacks over the last few years. A discussion will be presented on the different types of cyberattacks, and how can we classify these attackers. We will go through the current solutions to the security challenges from link encryption to end-to-end encryption, from information in transit using network protocols to how you can keep the intruder out of your network. A discussion of intrusion detection systems (IDS) and the research conducted addressing IDS will be presented. A blockchain architecture for co-operative intrusion detection system and its performance will be presented.

Sagufta Sahin

Assistant Professor, University of Gour Banga, India

&

Jayanta Mete

Professor University of Kalyani, India

Gandhi's Intellectual Inspiration the Panacea for All Social Evils in Indian Context

Indian Education System contains a vast historical background. In British India, the aims of education were changed. Macaulay's Education policy was launched not for the development of people's cognitive development, but only to generate literate people who can serve for British India. Like Gandhi ji there were many educated Indians who strongly opposed the Indian Education system. Education plays a vital role in the well-being of any country. The track to human development can only possible through education. Gandhi ji aimed at all-round development of human personality. Mainly he focused on education which leads to development of physical, mental, social & spiritual power in the child. Gandhi, the father of our nation, provides two pillars of his philosophy i.e. truth and nonviolence. The main objectives of this article are to represent the Gandhism and Ram Rajya which is very essential to rebuild and rectify the present social conflict and incompatibility. Gandhiji believed that once Independence arrived we should build a new society with new concept and perspective. In post-colonial India, Ram Rajya as a concept was first put forward by Mahatma Gandhi. The term has practical, philosophical and utopian aspect. After 74 years of Independence due to the incessant desire to classify each of us as a member of some racial, cultural or ethnic grouping destroying the social harmony and creating communal unrest in India. As India is a secular one, with heterogeneous mixture of all communities and diversities the citizen have to believe on Ram Rajya and practice its principles. This article is a content analysis to reminisce the actual idea and concept of Ram Rajya, which is not at all Hinduism, but the kingdom of God. There is no other God than the one God of Truth and righteousness. It envisages a society in which virtue, morality and justice will be the core ideals. Every individual including Government should keep in mind and take inspiration from this ideal to create a harmonious, well ordered where people respect each other and justice, equality, fraternity inculcate in its true sense.

Ali Sakkal

Associate Professor, Wake Forest University, USA

Connecting Hand & Mind: Makerspaces for Inspired Teaching & Learning

Metacognitive approaches to student learning in the classroom have long been linked to the educational discourse regarding democratizing the classroom (Dewey, 1938), engaging students in authentic and joyful inquiry (Jackson, 1992), and deep versus surface learning (Brown, Collins, and Duguid, 1989).

Part of authenticity and agency in learning must draw on the ideas of students as makers (Thomas & Brown, 2009) or value-creating persons (Apple, 1990). As Bransford, Brown, & Cocking (2000) assert, too many classrooms are not student centered enough, with talking in schools being “impersonal and expository, without any reference to personal or social intentions or experiences” (p. 135). Buchmann (1987) makes a similar realization, though more directly, stating of language use, “abstraction can impede communication” (p. 188). The strict nature of traditional classrooms, with little connection to the practices of the unscripted world outside, removes the elements of genuine discovery that empower students.

The discourses of normal schooling come into question when the roles of teacher and student equalize, as both become legitimate producers of knowledge. McLaren (2003) cites Henry Giroux’s distinctions of micro and macro objectives that create the educational environments to reexamine not just student schema and knowledge, but the relationships at the foundation of knowledge creation. Giroux’s micro objectives are the purposefully constructed content-specific forms of inquiry commonly seen in schools. Beyond just limiting the scope of content, they also help establish the role of teacher as the arbiter of knowledge and discourse. On the other hand, macro objectives connect the content to the “norms, values, and structural relationships of the wider society” (Giroux, as cited in McLaren, 2003, p. 195). Here, the focus is on the relationships between the means and ends—the whys that question and deepen knowledge schema while testing the established relationships of teacher and student.

Research at the university level shows that active versus traditional learning environments can increase participation and are more inspirational for students (Park & Choi, 2014). Furthermore, incorporating design-based principles into learning environments helps focus on many brain-based methods of learning such as group learning,

linking outdoor spaces, increasing rich-simulating environments, flexible learning, and personalization (Lackney, 2007. Nair, Fielding, & Lackney, 2009). The modern realities of the active classroom and workplace acknowledge that learning by doing can unlock more diverse and deeper learning, as this study aims to investigate.

Given these pedagogical frameworks and approaches, this study investigated how students learn within the context of hands-on experiential learning setting of a makerspace. Participants included approximately fifty undergraduate students enrolled in a Learning & Cognitive Science course offered through the Education Department. Foundational learning psychology topics and innovative learning space design were grouped with activities utilizing design software and maker tools (3D-printing, laser cutting, vinyl cutting, and other crafts) with the aim of helping students better understand and gain confidence in approaching creative projects, reduce student anxiety around conducting creative projects, and apply experiential learning approaches to course content. In particular, students were tasked with reimagining, creating, and presenting their prototypes for future learning spaces.

Sobitha Samaranayake

Associate Professor, University of Wisconsin - Whitewater, USA

Dependency Visualization Tool for Decision Support Systems

Large scale and long-term projects often consist of subtasks linked to each other with certain dependencies that need to be completed. Dependency evaluation and visualization tools can help identifying project bottlenecks, prioritizing tasks, and planning resource allocation. Hence, visualization tools can improve the efficiency of project interdependency management by dynamically displaying the project constraints and task dependencies. Most of the dependency visualization tools that are being used in the industry are designed to manage internal dependencies and task dependencies. In this work, we introduce an online tool for creating and maintaining visualizations of logical dependencies and preferential dependencies. The proposed online tool can be used with any process that is defined in terms of completing a well-defined logical sequence of activities that must be completed in order to reach a specific target, such as project planning, or with any process that can be completed by different sequences of activities, such as college degree planning (due to elective courses) or interest-aligned career planning.

Andrea Schroeder

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&

Kristi Julian

Professor, Middle Tennessee State University, USA

Design Student Understanding of Global Context and Practice: An Interdisciplinary Project Based Approach to Learning

For this project, undergraduate interior design students were paired with mentors from Germany, Canada, and Kenya. The design students researched factors to consider when starting a business in a foreign country resulting in a presentation. Students researched factors such as business laws and practices, banking, and taxation, political climate, foreign investment, etc. and then interviewed their assigned mentors from the disciplines of interior design, entrepreneurship, law, and business management. The aim of this project was to help students understand how social, economic, cultural, and physical contexts inform interior design. Another goal was to aid students in understanding how regional and global contexts and applications such as practice collaboration, labor, and materials sourcing may affect design practice.

This project provided exposure to other cultures as well as the global context of business and design. This teaching tool was used to help students become experiential and independent learners and then share their knowledge with their peers. The aim was to examine whether peer learning is effective in active and shared learning in team dynamics. The instructional approach was used to help students become actively engaged in their own learning process and explored the concepts covered in their lectures, reflections, and mentor engagement (Carvalho & Santos, 2020; Rosenbloom & Nemec, 2021; Topping & Ehly, 1998, Zaccagnini & Verenikina, 2013).

Richard Surrency
Superintendent, Putnam County School District, USA

Lead Your Way Out of a Crisis, Rather than Only Manage Your Way Out

Educational leaders at both the school and district levels have faced with a crisis during their career. A crisis can be a one time event or a long-term sustained event that takes place over years. A district school superintendent and leadership director from Florida will discuss the merits of using transformative leadership to overcome long-term crises. The presenters will show a leader will manage a short-term crisis using existing protocols. However, when a long-term crisis develops like a systemic decline in student achievement or a gradual reduction in district funds, the leader must use a different approach to create a sense of urgency among staff and stakeholders to address the problem. The presenters provide a backdrop of 5 lessons learned with historic examples to show how educational leaders can address both short-term and long-term crises. Short video clips of school principals will illustrate transformative leadership in practice. The presenters will engage the audience with the opportunity to share their experiences dealing with crises.

Natoya Thompson

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Student Academic Performance before COVID-19 and after Using Distance Learning in English at a Health Sciences College in the Middle East

The Educational world came to a halt in 2020 because of the COVID-19 pandemic; the world transitioned to distance learning to maintain the learning continuity. This research reports on studying students' achievement in three different learning modes. The learning objectives, course content, and pedagogical approaches were the same; however, the mode of instruction was not the same. Students' grades were collected at the end of the semester. The first semester was taught face-to-face (semester 1), blended (Semester 2), and online (Semester 3).

The participants in this study were a convenience sample of 671 students enrolled in an online, blended, and face-to-face English writing course at a targeted institution in the Middle East. The participants were young women from a particular gulf country between 18 and 25 years. The participants were selected based on criteria, and all were undergraduate students enrolled in a specialized health science degree course. The course was scheduled by the General Education Department at the college and included three instructional components. Each participant was enrolled in a section of the course that was delivered in an online, blended, or face-to-face format.

The data collection for this study was from September 2019 through July 2020. Class and section numbers were used to confirm whether each student was enrolled in the course's online, blended, or face-to-face version. The researchers collected grades for all participants in the different sections of the course at the end of each semester. One instrument was used to collect the data to answer the research question. The data collection instrument included data from instructors' grade reports, which were used to address the (RQ). This research included one independent variable and one dependent variable. The independent variable was the type of instruction. There were three levels of the independent variable: online, blended, and face-to-face instruction. Each level was represented by a group of undergraduate students who received that type of instruction. Comparisons were then made between the students' performances in the different groups, as measured by the dependent variable: course grade. Descriptive statistics were computed using the Statistical Package for the Social Sciences (SPSS) version (v21.0).

The results suggest that both the blended and face-to-face groups did not perform as well as the online groups. Nonetheless, it was also observed that the range of scores was very significant for the face-to-face group, with the difference being 80, which is substantial. Likewise, the range for the blended group was 81. In contrast, the online group's range difference was only 49, which implies that there was a larger spread in the face-to-face group than in the online group. Nevertheless, this variability trend is not proved by the SDs, which indicates that the online group had greater variability ($SD = 3.05$) than the face-to-face group ($SD = 2.86$).

Karren Timmermans
Professor, Pacific University, USA

Vision & Reading Readiness

Readers may be able to identify when they cannot see the text written at a distance or when the material projected to a screen is out of focus. Or they may find text written on a page to be blurry. Unless prompted or given the opportunity to express when text is not clear to them, children may assume that the blurry text they see is “normal” or just the same as what everyone else sees. Sight issues such as blurriness may be corrected with corrective lenses. However, there are other aspects of vision and oculomotor eye movements that may go virtually unnoticed by teachers, parents, and children. Beyond word recognition, automaticity and comprehension, oculomotor deficiencies can cause the most experienced, as well as inexperienced, reader problems. Three main indicators of oculomotor deficiencies are tracking problem, binocular coordination, and convergence insufficiency. I address the fundamentals of vision function and its relationship to literacy and literacy development: what our eyes do as we read, how our eyes contribute to reading success, and how oculomotor deficiencies can impact reading. I also consider ways to help children sharpen their visual accuracy to enhance their reading and writing skills.

Norbert Tusnio

Lecturer, The Main School of Fire Service, Poland

Augustyn Chwaleba

Retired Professor, USA

Piotr Majdak

Free Artist, Poland

&

Paul Chominski

Sr. Technical Director, RF Systems at MaxLinear, Inc., USA

Analysis of Capability of Air Pollution Monitoring from an Unmanned Aircraft

Satellite monitoring systems can be used for remote monitoring of the atmosphere over a given area but they do not provide information on the state of pollution at a given time. Additional information could only be obtained after several days. Measurements from an aircraft may be obtained almost at real-time and in different geometries – vertical and horizontal. The future of this type of monitoring is remote-controlled unmanned aerial vehicles (airplanes, helicopters and balloons tethered), equipped with telemetric monitoring.

Deon Vos

Senior Lecturer, North West University, South Africa

&

Niconette Maree

Student, North West University, South Africa

The Influence and Value of Technology in the Education Systems of South Africa and Russia

The aim of this study was to identify the influence of technology on the education systems (Basic education and Higher education) of South Africa and Russia. In researching different aspects that have an impact on technology and add to the value thereof, in not only education but the classroom as well, it was determined that these two education systems experienced some of the same challenges but also were influenced by different factors. The study has brought to light the importance of technology, and by identifying key skills and factors, it contributes to education. Some of these skills and factors are alternative means of education, creativity, aids in research, higher-order cognitive thinking skills, technological skills and economic growth.

Moreover, the study created an opportunity to highlight differences and similarities in the purpose of technology, the access to and distribution thereof, the implementation thereof in classrooms and the challenges in terms of implementing them successfully. By using a comparative method, the researchers had the opportunity to identify gaps in the research for future studies, methods for the implementation of technology and universal challenges, such as the digital divide.

This study has provided ample evidence of the value that technology adds if successfully implemented and how much value it can bring towards an education system. This is also the reason why an education system of any country should assure the sustainability of the implementation of technology in the system. It is important that the education systems of both South Africa and Russia proceed to directly identify and address gaps in their approaches to implementing technology. It is also important for these countries to release more relevant data and policies regarding this topic, specifically in education. Although the role of the BRICS organisation is identified as the STI (science and technology innovation) initiative, there are no clear indicators in policy documents or references to technology in education. Moreover, looking specifically at the BRICS countries, it is clear that they have made strides in addressing such challenges as stipulated in the literature. To conclude, this research can be used to

further address the challenges and limitations that were identified in the study in order to assess the future impact of technology on an education system.

Elize Vos

Associate Professor, Northwest University, South Africa

The Newspaper as a Multimodal Tool in Developing Self-Directed Reading

Research, completed in 2020 with a specific group of Grade 4 Afrikaans Home Language learners at a private school in Gauteng Province (South Africa), will be discussed in this paper.

In the light of the poor reading situation in South Africa, several studies show that reading is an important skill to meet the demands of the 21st century.

In this qualitative research within the interpretivist research paradigm, a literature study highlighted the newspaper as a multimodal tool as well as the importance of reading strategies in developing self-directed readers. The relationships between self-directed learning and self-directed reading, as well as between self-directed reading and independent reading, were defined. To determine whether these learners were able to read, understand and use the newspaper, the researcher examined their developmental stages.

A document and thematic analysis were done of international assessment bodies' reports which examines learner's literacy, namely the Progress in International Reading Literacy's report (PIRLS) and the Teaching and Learning International Survey report (TALIS). From this, it is clear that the reading situation in South Africa is abysmal despite efforts by the state for improvement such as the National Curriculum and Assessment Policy Statement (DBE 2011); the National Reading Strategy Document and the Read to Lead Campaign (DBE 2015, 2019); as well as the Nal'ibali Campaign (Nal'ibali 2019).

The research contribution is firstly the proof that the progressive teaching of reading strategies in a lesson series, according to the constructivist teaching-learning theory, empowered a group of Grade 4 Afrikaans Home Language learners to read various newspaper texts with comprehension that ultimately contributed to self-directed reading. Secondly, guidelines have been compiled for Grade 4 Afrikaans Home Language Teachers, in which it is shown how the newspaper can be used as a multimodal tool to help learners develop into self-directed readers.

Stephen Wanger

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&

Tong Wu

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Higher Education and the Tensions between Globalism, Nationalism and Nativism: The Pendulum Swinging

In recent decades, globalization was perceived as a constant force moving the world toward the future (James, 2009). Propelled by innovations that brought nations closer together—from the telegraph, railroads, jet aircraft, fiber optics, to the internet—nations sought to benefit by facilitating collaboration and integration (Samuelson, 2019). Current global events, however, question the sustainability of this narrative. Two responses to globalization are gaining significant traction across the globe: nationalism and nativism.

Global higher education is caught in this uncertainty. For example, the once celebrated process of higher education globalization through regional integration has either stalled, evolved, or is now viewed with suspicion. The Bologna Process, which was once seen as a model for an innovative approach to higher education worth exporting to other parts of the world (Alemu, 2019; Khelfaoui, 2009), is now questioned and reviewed in terms not only of commitment to implementation and harmonization (Vögtle, 2019) but also perceived unwanted and unforeseen consequences (Wihlborg, 2019).

This paper explores the emerging implications for higher education of the escalating tensions between globalism, nationalism, and nativism. For the sake of the study, *globalism* is defined as the ideal that the proper sphere for addressing educational, cultural and commercial issues is the world as a single unit. Consequently, *globalization* is defined as the processes—whether intentional or unintentional—through which this ideal is advanced. *Nationalism* is defined as the ideal that the proper sphere for addressing the same issues is one's nation. And *nativism* is defined as the ideal that one's group—whether based on race, ethnicity, socioeconomic status, religion, gender, indigenous heritage, or another identity—is the proper sphere for addressing these issues.

The study analyzed extensive literature—both peer-reviewed and popular—related to the interplay of the three ideals. Relevant literature

that appeared across the globe over the last five years (2016-2021) was analyzed using document analysis and thematic analysis.

The analysis revealed impacts within, across and beyond higher education institutions. Within, institutions are implementing policies that delay or impede globalization. This includes multiple aspects of institutional internationalization, the development of curricula and intercultural competencies, and the status of innovation (including technology, ideas, the diffusion of innovation, creativity, and intellectual property). Across, the interplay is inhibiting trans-institutional collaboration. This includes student and faculty mobility, transnational agreements, international dual degree programs, and branch campuses. Beyond, the interplay of the ideals is impacting global higher education contexts. This includes the Bologna Process and other regional initiatives [the African Union (AU), the Gulf Cooperation Council (GCC) region, ENLACES in Latin America and the Caribbean, and the Association of Southeast Asian Nations (ASEAN)], quality assurance, and agencies such as the World Bank, OECD, the International Monetary Fund, and multi-national foundations.

Consequently, the status and future of global higher education are caught within the swinging of the pendulum between globalism, nationalism and nativism. The intent of this paper is thus to engender dialogue—regarding the interplay of these ideals within the realm of higher education—that will facilitate greater awareness and subsequent exploration.

Mervyn Wighting
Professor, Regent University, USA

Measuring Relationships between Children and their Teachers

This presentation will describe research being conducted to measure the relationships between middle school children in the USA and their teachers.

Previous research by the presenter has determined that building relationships with the children in each class is one of the most effective teaching strategies, especially for first year teachers. To continue this line of research a current study is measuring the sense of community among four classes of children.

The sense of community among all four classes will be measured using a standardized instrument. The teachers of two of the classes will subsequently attend professional development on the theme of building relationships, the other two teachers will not. Following this intervention all four classes will be re-measured to determine whether there are any significant differences in the sense of community across all four classes.

Fernanda Yamamoto

Postdoctoral Researcher, University of São Paulo, Brazil

Professional Development of Teachers of Integrated Technical/Vocational Training in Secondary School

This work investigates the professional development of the teaching of high school teachers who work at a course integrated by area of knowledge and vocational education in the area of information technology. The idea is to understand the learning paths of these teachers, based on analysis of their perceptions about their experiences, life stories, and professional development. To perform the study, we considered the theoretical framework on learning and teacher training by authors such as Mizukami, Schön, Freire, and Nóvoa, and especially the ideas of pedagogical content knowledge (Shulman), specialized content knowledge for teaching (Ball et al.) and the ways of teaching and learning. With a qualitative nature, the investigation had the participation of ten teachers with diverse areas of knowledge in the region of São Paulo. The discussions with them touched on a series of pedagogical themes, for the purpose of delineating the themes that guide the narratives. These narratives explored the learning itinerary of the profession, such as knowledge, beliefs, reflections, feelings, and experiences, to address the central question: How can the professional development of teachers of integrated technical/vocational training in secondary school be characterized from their perceptions? The analysis illustrates the learning trajectories, supported by references previous to teaching activity, as well as professional development in practice and the need for continuous in-service training and well managed school conditions.

Suzan Yesil

PhD Candidate, Texas Tech University, USA

The Role of Parental Involvement in COVID-19 Pandemic Trauma Recovery in Undergraduate University Student

This study will explore university students' perceptions of 1) university students' COVID-19 trauma experiences, and 2) the effect of parental involvement in university students' pandemic-related trauma recovery. The study will employ a qualitative case study research approach and focus groups to collect and analyze data thematically. The study population will be undergraduate students in a university campus in Texas. The study will contribute to theory and advocacy on the importance of involving parents to support university students who have experienced trauma and address mental health-related systemic deficiencies that affect students' educational experiences and exacerbate inequities in America's higher learning institutions.

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