Education and New Developments

2020

Edited by

Mafalda Carmo

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

Published by inScience Press, Rua Tomas Ribeiro, 45, 1º D, 1050-225 Lisboa, Portugal

Copyright © 2020 inScience Press

All rights are reserved. Permission is granted for personal and educational use only.
Commercial copying, hiring and lending is prohibited. The whole or part of this publication material cannot be reproduced, reprinted, translated, stored or transmitted, in any form or means, without the written permission of the publisher. The publisher and authors have taken care that the information and recommendations contained herein are accurate and compatible with the generally accepted standards at the time of publication.
The individual essays remain the intellectual properties of the contributors.

ISSN (electronic version): 2184-1489
ISSN (printed version): 2184-044X
ISBN: 978-989-54815-2-1

Legal Deposit: 428062/17
Printed in Lisbon, Portugal by GIMA - Gestão de Imagem Empresarial, Lda.

BRIEF CONTENTS

Foreword v

Organizing and Scientific Committee vii

Keynote Lecture xi

Index of Contents xiii

FOREWORD

This book contains the full text of papers and posters presented at the International Conference on Education and New Developments (END 2020), organized by the World Institute for Advanced Research and Science (W.I.A.R.S.), that this year had to be transformed into a fully Virtual Conference as a result of the Coronavirus (COVID 19) pandemic.

Education, in our contemporary world, is a right since we are born. Every experience has a formative effect on the constitution of the human being, in the way one thinks, feels and acts. One of the most important contributions resides in what and how we learn through the improvement of educational processes, both in formal and informal settings.

The International Conference seeks to provide some answers and explore the processes, actions, challenges and outcomes of learning, teaching and human development. The goal is to offer a worldwide connection between teachers, students, researchers and lecturers, from a wide range of academic fields, interested in exploring and giving their contribution in educational issues. We take pride in having been able to connect and bring together academics, scholars, practitioners and others interested in a field that is fertile in new perspectives, ideas and knowledge.

We counted on an extensive variety of contributors and presenters, which can supplement our view of the human essence and behavior, showing the impact of their different personal, academic and cultural experiences. This is, certainly, one of the reasons we have many nationalities and cultures represented, inspiring multi-disciplinary collaborative links, fomenting intellectual encounter and development.

END 2020 received 459 submissions, from more than 40 different countries, reviewed by a double-blind process. Submissions were prepared to take form of Virtual Presentations and Posters. The conference accepted for presentation 125 submissions (27% acceptance rate), from which, 106 submissions are published in full text in this book.

The conference also includes a keynote presentation from an internationally distinguished researcher, Prof. Dr. Joy Kutaka-Kennedy (Ed. D., Department of Special Education, Sanford College of Education, National University, San Jose Campus, USA), to whom we express our most gratitude.

This conference addressed different categories inside the Education area and papers are expected to fit broadly into one of the named themes and sub-themes. To develop the conference program, we have chosen four main broad-ranging categories, which also covers different interest areas:

• In **TEACHERS AND STUDENTS**: Teachers and Staff training and education; Educational quality and standards; *Curriculum* and Pedagogy; Vocational education and Counseling; Ubiquitous and lifelong learning; Training programs and professional guidance; Teaching and learning relationship; Student affairs (learning, experiences and diversity; Extra-curricular activities; Assessment and measurements in Education.

• In **PROJECTS AND TRENDS**: Pedagogic innovations; Challenges and transformations in Education; Technology in teaching and learning; Distance Education and eLearning; Global and sustainable developments for Education; New learning and teaching models; Multicultural and (inter)cultural communications; Inclusive and Special Education; Rural and indigenous Education; Educational projects.

• In **TEACHING AND LEARNING**: Critical Thinking; Educational foundations; Research and development methodologies; Early childhood and Primary Education; Secondary Education; Higher Education; Science and technology Education; Literacy, languages and Linguistics (TESL/TEFL); Health Education; Religious Education; Sports Education.

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

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

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

Hoping to continue the collaboration in the future,

Respectfully,

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

SCIENTIFIC COMMITTEE

Organizer

World Institute for Advanced Research and Science (WIARS)
www.wiars.org

Conference and Program Chair

Mafalda Carmo
World Institute for Advanced Research and Science (WIARS), Portugal

International Scientific Committee

Aaron R. Deris, Minnesota State University, USA

Abdurrahman Guelbeyaz, Nagasaki University, School of Global Humanities and Social Sciences, Japan

Adrián Ponz Miranda, Zaragoza University, Spain

Ahmad A. Oueini, Lebanese American University, Lebanon

Alan Singer, Hofstra University, USA

Ali Baykal, Bahcesehir University, Turkey

Alice Stephens, Clark Atlanta University, USA

Amir Dirin, Haaga-Helia University of Applied Science, Finland

Ana Conboy, College of Saint Benedict and Saint John's University, USA

Ana-Maria Bercu, Alexandru Ioan Cuza University of Iasi, Romania

Anca Draghici, Politehnica University Timisoara, Romania

Andis Klegeris, University of British Columbia, Canada

Andrea Fiorucci, University of Salento, Italy

Andrea Hathazi, Babes-Bolyai University, Romania

Angela Hovey, Lakehead University, Canada

Angela James, University of KwaZulu-Natal, South Africa

Angela Piu, University of Valle d'Aosta, Italy

Anja María Mackeldey, Colegio Alemán Medellín / Universidad de Antioquia, Colombia

Anne Julia Fett, Martin-Luther-Universität Halle-Wittenberg, Germany

Antoni Kolek, University of Social Sciences, Poland

Aphrodite Ktena, National and Kapodistrian University of Athens, Greece

Aviva Dan, Ohalo Academic Education College, Israel

Beata Maślanka-Wieczorek, Polish-Japanese Academy of Information Technology, Poland

Beatriz Carrasquer Álvarez, Zaragoza University, Spain

Begoña Sampedro, Univesity of Cordoba, Spain

Belkis Tekmen, Baskent University, Turkey

Binnur Yeşilyaprak, Ankara University, Turkey

Çağla Atmaca, Pamukkale University, Turkey

Carolina Bodea Hategan, Babes-Bolyai University, Romania

Celia MacDonnell, University of Rhode Island and Brown University, USA

Cezar Scarlat, University "Politehnica" of Bucharest, Romania

Charalampos Karagiannidis, University of Thessaly, Greece

Charles Elkabas, University of Toronto, Canada

Cheng-Hsuan Li, National Taichung University of Education, Taiwan

Christine Besnard, Glendon College, York University, Canada

Christos Manasis, TEI of Sterea Ellada, Greece

Chun Wu, Mount Marty College, USA

Cory A. Bennett, Idaho State University, USA

Cristiano Luchetti, American University of Sharjah, United Arab Emirates

Dalia Hanna, Ryerson University, Canada

Daniela Pasnicu, Spiru Haret University, Romania

David Aparisi, University of Alicante, Spain

David Nocar, Palacký University in Olomouc, Czech Republic

Deborah Gay Wooldridge, Bowling Green State University, USA

Devorah Eden, Western Galilee College, Israel

Dimitris Dranidis, The University of Sheffield International Faculty, CITY College, Greece

Donata Puntil, King's College London, United Kingdom

Dorina Anca Talas, Babes-Bolyai University, Romania

Douglas Baleshta, Thompson Rivers University, Canada

Elena Polyudova, Defense Language Institute, USA

Ellen Whitford, Georgia Southern University, USA

Francis Stonier, Southwest University, China

Gina Chianese, University of Trieste, Italy

Ginette Roberge, Laurentian University, Canada

Giuditta Alessandrini, Università degli Studi Roma TRE, Italy

Gráinne Ní Dhomhnaill, University College Dublin, Ireland

Gyöngyi Bujdosó, University of Debrecen, Hungary

Harvey Oueijan, Notre Dame University, Lebanon

Hava Vidergor, Gordon Academic College of Education / Arab Academic College of Education, Israel

Helena Skarupská, Tomas Bata University, Czech Republic

Henri Jacobs, Central University of Technology, Free State (CUT), South Africa

Huseyin Bicen, Near East University, Nicosia, Cyprus

Ilijana Čutura, University of Kragujevac, Serbia

Ilona Tandzegolskienė, Vytautas Magnus University, Lithuania

Ina Blau, The Open University of Israel, Israel

Ioana Velica, Babes-Bolyai University, Romania

Ionut Vladescu, University "Petre Andrei" of Iasi, Romania

Jacquelyn Baker-Sennett, Western Washington University, USA

Janaina Cardoso, Rio de Janeiro State University, Brazil

Jeanne Schreurs, Hasselt University, Belgium

Jeannette Jones, Texas Lutheran University, USA

Jiří Pavelka, Tomas Bata University in Zlín, Czech Republic

Jitka Hloušková, University of Pardubice, Czech Republic

Joana Paulin Romanowski, PUCPR - Pontifícia Universidade Católica do Paraná, Brazil

Joanna Paliszkiewicz, Warsaw University of Life Sciences, Poland

Juana Maria Sancho Gil, University of Barcelona, Spain

Judith Szerdahelyi, Western Kentucky University, USA

Julia Haba-Osca, Universitat de Valencia, Spain

Kadi Lukanenok, Tallinn University, Estonia

Karel Němejc, Czech University of Life Sciences Prague, Czech Republic

Karim Moustaghfir, Al Akhawayn University in Ifrane, Morocco

Kateřina Vitásková, Palacký University in Olomouc, Czech Republic

Katerina Kabassi, Technological Educational Institute of the Ionian Islands, Greece

Khondkar R. Islam, George Mason University, USA

Konstantinos Kalemis, National and Kapodistrian University of Athens / National Centre for Local Government and Public Administration, Hellenic Ministry of Education, Greece

Kyparisia Papanikolaou, School of Pedagogical and Technological Education, Greece

Ladário da Silva, Universidade Federal Fluminense (UFF), Brazil

Laura Rio, University of Bologna, Italy

Lazar Stošić, Institute of management and knowledge, Regional coordinator for Republic of Serbia, Macedonia

Leela Ramsook, University of Trinidad and Tobago, Trinidad and Tobago

Lefkothea Kartasidou, University of Macedonia, Greece

Leila Kajee, University of Johannesburg, South Africa

Lina Kaminskienė, Vytautas Magnus University, Lithuania

Lisa Winstead, California State University, Fullerton, USA

Longzhi Yang, Northumbria University, United Kingdom

Loreta Chodzkiene, Vilnius University, Lithuania

Luca Refrigeri, University of Molise, Italy

Lucía Casal de la Fuente, University of Santiago de Compostela, Spain

Luis Gonzaga Roger Castillo, Universidad de Granada (UGR) / Centro de Estudios Bizantinos, Neogriegos y Chipriotas, Spain

Łukasz Tomczyk, Pedagogical University of Cracow, Poland

Luminita Cocarta, Al. I. Cuza University of Iasi, Romania

Maciej Dębski, University of Social Sciences, Poland

Magdalena Mądra-Sawicka, Warsaw University of Life Sciences, Poland

Magdolna Chrappán, University of Debrecen, Hungary

Małgorzata Cieciora, Polish-Japanese Academy of Information Technology, Poland

Marga Vives Barceló, University of the Balearic Islands, Spain

Maria Carme Boqué Torremorell, Ramon Llull University, Spain

Maria Luisa de Natale, Università Cattolica del Sacro Cuore, Italy

Maria Moundridou, School of Pedagogical and Technological Education (ASPETE), Greece

Marko Slavkovic, University of Kragujevac, Serbia

Marta Talavera, University of Valencia, Spain

Maya Wizel, Middlebury College / Kibbutzim College, USA / Israel

Melissa Caspary, Georgia Gwinnett College, USA

Michael Reiner, IMC University of Applied Sciences Krems, Austria

Michele Lemos de Souza, Universidade Federal Fluminense, Brazil

Milan Kubiatko, University of Zilina, Slovakia

Nadir Kolachi, University of Fujairah, United Arab Emirates

Napak-on Sritrakarn, Rajamangala University of Technology Isan, Thailand

Naseer Ahmed, Al Ghurair University, United Arab Emirates

Natalie Lavoie, University of Quebec in Rimousk, Canada

Nazario Zambaldi, Free University of Bolzano, Italy

Nella Mlsová, University of Hradec Králové, Czech Republic

Nilza Costa, University of Aveiro, Portugal

Odeta Merfeldaitė, Mykolas Romeris University, Lithuania

Odette Gabaudan, TU Dublin, Ireland

Olga Chis, Babes Bolyai University, Romania

Oliver Holz, Katholieke Universiteit Leuven, Belgium

Olivier Marty, CNAM, France

Paola Damiani, University of Turin, Italy

Paschalia Patsala, Arts and Humanities Research Council, United Kingdom

Patricia E. Reynolds, University of Mary Washington, USA

Paul Sage, Queen's University, Belfast, United Kingdom

Pavel Brebera, University of Pardubice, Czech Republic

Pavel Kapoun, College of Entrepreneurship and Law, Czech Republic

Paweł Topol, Adam Mickiewicz University in Poznań, Poland

Pedro Perera, Universidad de La Laguna, Spain

Petros Kefalas, University of Sheffield International Faculty, Thessaloniki, Greece

Piotr Pietrzak, Warsaw University of Life Sciences, Poland

Pule Phindane, Central University of Technology, South Africa

Rasa Nedzinskaite, Lithuanian University of Educational Sciences, Lithuania

Remigijus Bubnys, Siauliai University, Lithuania

Richard Walker, University of York, United Kingdom

Roger Nkambou, University of Québec at Montréal, Canada

Rosanna Tammaro, University of Salerno, Italy

Rosemary Papa, Soka University of America, USA

Ryuichi Matsuba, Kumamoto University, Japan

Sam Ramaila, University of Johannesburg, South Africa

Sandra Braun, Mount Royal University, Canada

Seppo Sirkemaa, University of Turku, Finland

Seweryn Spalek, Silesian University of Technology, Poland

Sheryl Williams, Loughborough University, United Kingdom

Silvânia Alves de Carvalho, Universidade Federal Fluminense, Brazil

Silvia Pokrivčáková, Trnava University, Slovakia

Simon Richir, Arts et Metiers Paristech (ENSAM), France

Sinan Olkun, Final International University, Turkey

Stefania Pinnelli, University of Salento, Italy

Stephanie Linek, ZBW - Leibniz Information Centre for Economics, Germany

Susan Scott, Lakehead University, Canada

Suzani Cassiani, Universidade Federal de Santa Catarina, Brazil

Suzie Savvidou, The University of Sheffield International Faculty, CITY College, Greece

Syed Ziaur Rahman, College of Applied Sciences-Ibri, Ministry of Higher Education, Sultanate of Oman, Oman

Tatjana Portnova, Russian Center of the University of Granada, Spain

Tena Velki, Josip Juraj Strossmayer University of Osijek, Croatia

Théodore Njingang Mbadjoin, University Lumière Lyon 2, France

Todd Brower, Western State College of Law, USA

Valentina Haralanova, Linnaeus University, Sweden

Vashti Singh, Education Consultant and Independent Researcher, Trinidad and Tobago

Vassilis Chatzibirros, The University of Sheffield International Faculty, CITY College, Greece

Vicente J. Llorent, University of Cordoba, Spain

Wendy Setlalentoa, Central University of Technology, South Africa

Wiktor Bołkunow, Warsaw School of Economics, Poland

Yogesh Kumar Sharma, Government Shakamdhar PG College, Sambhar Lake, India

Zoltán Rónay, Eötvös Loránd University, Hungary

KEYNOTE LECTURE

NEW POSSIBILITIES IN EDUCATION AT THE NEXUS OF GENERATIONAL CHANGE AND TECHNOLOGICAL INNOVATION

Prof. Dr. Joy Kutaka-Kennedy
(Ed. D.)
Department of Special Education, Sanford College of Education,
National University, San Jose Campus (USA)

Abstract

One thing is certain in life and that is change, something we all experience in big and little ways every day. We all emerged as newborns into families of varying sorts, progressed through a multiplicity of childhoods, and finally achieved and survived teenage years. We began renegotiating our relationship with parents who had their ideas of who we should be and how we should live, which more often than not clashed with our own emerging definition of ourselves in the changing world. Younger generations have struggled with older generations for possibly as long as human history. Each new generation challenged the norms, expectations, and perspectives of their predecessors in light of the latest social, environmental and technological changes that developed. Game-changing innovations have shaped and influenced the context of social evolution as well as cultural revolution. With these generational differences nuanced by ever evolving technological innovations, how can we in higher education best prepare our students to meet the needs of the changing workplace and communities? How do we bridge the gaps between the older-generation academics who grew up using typewriters and the younger generation student body using Facetime, social media and text messaging? Besides becoming more adept and proficient in using technology, which is a crucial step in the right direction, we need to harness more of the vast resources available in online education to offer course work to an increasingly demanding student body who wants instant access, quick responses and on-demand mobility. Online education is here to stay with demand growing each year. We in higher education need to become highly skilled and more effective in meeting students where they are with what they need and want. We must teach and engage them more efficiently and effectively, especially in light of upcoming innovations in augmented and virtual reality, artificial intelligence, and other innovations. Higher education needs to embrace the forces of innovation which will continually impact how people learn, adapt and go forward.

Biography

Prior to entering higher education Dr. Joy Kutaka-Kennedy spent over fifteen years teaching pre-school through high school students in regular education, gifted education, at-risk education, and special education. After earning her doctorate in Special Education, she has taught over fifteen years at the university level, emphasizing special education teacher preparation in academic course work and clinical practice supervision. Having extensive experience with online education, course development and program evaluation, she won Quality Matters recognition for innovative course design and student engagement. She has given numerous national and international presentations on creativity and collaboration in the online venue; individual accountability in online group work; emerging technological trends in higher education; implications of generational differences and technological innovation in higher education; and the future of Artificial Intelligence, machine learning and deep learning in education. Her university faculty responsibilities include course design and assessment oversight, field work supervision, and mentoring new faculty in higher education. Dr. Joy Kutaka-Kennedy serves as an officer of the California Association of Professors of Special Education, completes program reviews for state and national accreditation, and performs editorial reviews for professional publications. She currently is working on designing new curricula to align with new state credentialing standards.

INDEX OF CONTENTS

VIRTUAL PRESENTATIONS

Teachers and Students

Assessing TPACK integration in senior phase science teaching and learning at South African township schools **3**
Hlulani Shilenge, & Sam Ramaila

Music curriculum integration practices - "accountability" as policy translation in professional music training: the case of the tut **8**
Hua Hui Tseng

Factors influencing teachers' inclination to use improvised resources in life sciences classrooms **12**
Mahlatse Ramothwala, & Sam Ramaila

Improving university students' perceptions of peer assessment **16**
Elizabeth Ruiz Esparza Barajas

The affordances of improvised resources in physical sciences classrooms **20**
Koketso Ntladi, & Sam Ramaila

The relationship between teacher-student relationship, self-confidence, and academic achievement in the Chinese context **24**
Tianxue Cui, Qimong Liu, Jian Liu, & Chuang Wang

Mapping disability representation in primary school youth literature **29**
Nikoletta Gulya, & Anikó Fehérvári

The relationship between students' approaches toward learning and academic achievement in the Chinese context **34**
Chuang Wang, Qimong Liu, Jian Liu, & Tianxue Cui

A grounded theoretical study on the influence mechanism of verbal abuse by teachers **39**
Jinnan Li, & Yuheng Zhang

Evaluation in scientific advisors' commentaries as a means to develop students' writing skills **44**
Albina Vodyanitskaya

Czech curricular reform in the rear-view mirror: the case of foreign language learning **48**
Pavel Brebera

Basis of architectural survey between geometry and representation. A first educative approach **53**
Eugenia Comparetto, Martino Pavignano, Ursula Zich, Ornella Bucolo, & Daniela Miron

Creating authentic learning and assessment environments **58**
Katerina Kasimatis, & Theodora Papageorgiou

Design based on ICF The training courses for in-service teachers **63**
Laura Sara Agrati

The use of computer simulations as an intervention to address misconceptions of grade 11 physical sciences learners in South African township schools **68**
James Mphafudi, & Sam Ramaila

Beyond gamification: *Classcraft* as an engagement tool in the teaching of English as a second language **73**
Verónica Membrive, & Madalina Armie

South African grade 11 physical sciences learners' perceptions of scientific inquiry **77**
Rosemary Zunga, & Sam Ramaila

Prospective teachers' coping with mathematical algorithms in a flipped class setting **81**
Ilana Lavy, & Atara Shriki

Exploring South African in-service teachers' baseline knowledge of mathematics: a case of further education and training phase **86**
Sam Ramaila, & Philemon Seloane

Does self-assessment of creativity and its development support the development of creativity? **91**
Atara Shriki, & Ilana Lavy

South African at-risk undergraduate engineering students' perceptions of the remedial intervention designed to enhance their academic performance in mathematics as a key knowledge domain **96**
Sam Ramaila, & Philemon Seloane

Skilling for tomorrow at school: a training project for IVET and technical students' soft skills **100**
Francesco Tommasi, Ioris Franceschinis, Marco Perini, & Giuseppe Tacconi

Pedagogical practices adopted by teachers when using improvised resources in life sciences classrooms **105**
Syamthanda Zondi, & Sam Ramaila

Work ethics of special education teachers in South Korea **108**
HwaChoon Park

CoAstro: @n astronomy condo – teachers´ attitudes and epistemological beliefs towards science in a citizen science project **113**
Ilídio André Costa, Carla Morais, & Mário João P. F. G. Monteiro

Effects of experience-based credit-bearing courses on college students' career adaptability and employment skills in Korea **118**
HwaChoon Park, & Cheonsoo Park

Students in research - experience with research-based teaching **122**
Marcin Fojcik, Martyna K. Fojcik, & Bjarte Pollen

The Chinese experience in promoting teacher professional development in disadvantaged areas **127**
Gong Chen

Pre-service engineer educators learning mathematics: Mapping the lived complexity **131**
Katerina Kasimatis, Andreas Moutsios-Rentzos, Nikolaos Matzakos, Varvara Rozou, & Dionisios Kouloumpis

Evaluation of factors that influence school failure in a group of adolescents in Iasi county **136**
Adriana Albu, Mihaela Vlada, & Florin Dima

The contribution of drama as an alternative teaching approach to refugee students **141**
Kyriaki Chatzikonstantinou

Teachers' preparedness and experiences in teaching meiosis to grade 12 learners in Limpopo province **145**
Thapelo Manaka, & Lydia Mavuru

Value of effective feedback to candidates leads to improving the learning goal **150**
Ann Toler Hilliard, & Renee Foose

TOEIC score prediction according to student's learning performance on university English courses **155**
Yi-Jie Ju, & Cheng-Hsuan Li

Teacher enhancement of interactions in life sciences English-second-language learners classes **159**
Vuyo Kamati, & Lydia Mavuru

Investigating the impact of learn by doing in civil technology class: Students action **164**
Khojane Geoffrey Mokhothu

A 'digital pedagogies'–based learning platform **168**
Matthew Montebello

Historical analysis of students' performance: An age and gender perspective **173**
Silvia B. González-Brambila, Lourdes Sánchez-Guerrero, Beatriz A. González-Beltrán, & Josué Figueroa-González

Improving knowledge transfer in simulation games based on cognitive load theory **178**
Christian Ploder, Thomas Dilger, & Reinhard Bernsteiner

Effect of students that must repeat a course in the distribution and capacity of groups **183**
Lourdes Sánchez-Guerrero, Beatriz A. González-Beltrán, Josué Figueroa-González, & Silvia B. González-Brambila

Projects and Trends

Self-produced videos in flipped classroom for pre-course engineering students, engineering students and nursing students **188**
Joar Sande, Ingvild Leite, & Lars Kyte

Service-learning at university: Addressing social challenges from the education **193**
Elena Mª Díaz-Pareja, Juana Mª Ortega-Tudela, & África Mª Cámara-Estrella

Fostering creativity of students with intellectual disabilities through music listening activities **198**
Marina Wai-yee Wong

Developing domestic students' intercultural competence — a case study: Immersion program of Sichuan University, China **203**
Xianghan Liao

Digitalisation of higher education – teachers and students experience **206**
Marcin Fojcik, & Martyna K. Fojcik

Innovative use of ICT in early years curriculum based on 5E instructional model **211**
Christina Kalaitzi, & Christina Volioti

Augmented reality in intervention with people with autism spectrum disorder: Protocol activities 216
Alba Gilabert Cerdá, Eva García Albaladejo, Elena Pérez Vázquez, Gonzalo Lorenzo Lledó, Asunción Lledó Carreres, & Alejandro Lorenzo Lledó

The contemporary educational agenda _ education and reality 221
Khalid Aada

Differences between traditional and augmented reality teaching 226
Eva García Albaladejo, Alba Gilabert Cerdá, Asunción Lledó Carreres, Gonzalo Lorenzo Lledó, Alejandro Lorenzo Lledó, & Elena Pérez Vázquez

MOOCs for bridging the school - university gap 231
Ilaria Merciai, & Ruth Kerr

Physiotherapist students' perceptions in a gamification project 236
Carolina Jiménez-Sánchez, Pablo Gargallo-Aguaron, María Pilar López-Royo, & Fani Alfaro-Gervon

Is knowledge priceless? A case study on the changing face of education 241
Joanna Peksa, & Faith Dillon-Lee

Catching two birds with one stone - the case of music and programming fundamentals 246
Ilana Lavy

Teaching discourse analysis of the category of subject 251
Marina Fomina

Interdisciplinary innovation camp for nursing and engineering students at WNUAS 256
Eivind Standal Husabø, Dagrun Kyrkjebø, & Joar Sande

Glocality as instrument of cultural policy and its ability to preserve cultural capital 261
Kamo Chilingaryan, & Ekaterina Zvereva

Communication revolutions that marked the history of education. Proverbs in education - theses and paradoxes 266
Cezar Scarlat

Children with vision impairment and multiple disabilities: Issues of communication skills and professionals' challenges 271
Vassilis Argyropoulos, Charikleia Kanari, Andrea Hathazi, Maria Kyriacou, Maria Papazafiri, & Magda Nikolaraizi

Today's higher education at a crossroads: Is the educator's role undergoing a paradigm shift? 276
Cezar Scarlat

Special education teachers: Training and intervention strategies for internet risks of students with intellectual disabilities in Spanish centres 281
Marcos Gómez-Puerta, Esther Chiner, Santiago Mengual-Andrés, & Esther Villegas

Dimensions of students' engagement and self-insight in upper secondary education 286
Peter Grandits

Creating an interactive tool for student communication: Lessons learnt 291
David Cutting, Andrew McDowell, Neil Anderson, Paul Sage, Matthew Collins, & Angela Allen

Evaluation of immersion program from student' perspective in Sichuan University, China **295**
Yu Man

Life in the bonds of social exclusion as a disadvantageous factor of education **299**
Helena Skarupská, & Iva Staňková

Personalized learning in math, throw problem-solving, and the use of ICT **304**
Diana Starja, Nikolina Nikolova, & Bederiana Shyti

Ditch the plastic Trinidad & Tobago: The dynamics of a multi-sectoral school-community partnership **309**
Rowena Kalloo, & Shahiba Ali

Educational and therapeutic benefits of "content-focused accessible e-learning material" for visually impaired university students **314**
Chikako Ota

Teaching and Learning

Analyzing experiences of using effective feedback in the ESL classroom through the use of digital technologies **319**
Roberto Mesén-Hidalgo, & Juan Carlos Sandí-Delgado

The methodology of action research (AR) and the impact on teachers' professional development **324**
Michal Nachshon, & Amira Rom

Impact of maker-space project to provide computer science education to middle school students in the Alabama black belt region **329**
Linda P. Thurston, Martha Escobar, & Mohammed Qazi

334

Does parental involvement really make a difference?
A study with parents of primary school students in urban context
Raquel Barroso, & Diana Dias

Teacher and peer feedback in an EFL writing course: What do students need? **339**
Thanakorn Weerathai, & Ratsawadee Belardo

When it rains while the sun is shining: School climate as an echo of the (future) social climate **344**
Diana Dias, & Raquel Barroso

Digital engines at work: Promoting research skills in students **349**
Olga Suleimanova, Albina Vodyanitskaya, Vera Yaremenko, & Marina Fomina

Old techniques, new competences: Rebuilding historical instruments to teach and learn physics **353**
Ana Paula B. Silva, José Antonio F. Pinto, Samira Arruda Vicente, & Gerson Gonçalves

A systematic literature review of methodologies used for the design of serious games. A comparative analysis **358**
Juan Carlos Sandí Delgado, & Patricia Alejandra Bazán

Investigating factors hindering the implementation of e-learning at Motheo technical and vocational education and training (TVET) college: A case study of the national vocational certificate (NCV) programme **363**
Mmatau Zwane, & Wendy N. Setlalentoa

The effects of drinking and smoking among undergraduates on academic performance and transition to employment **366**
Cheonsoo Park, & HwaChoon Park

The toiling single mother: Does her education attainment level matter in a learner's academic performance? Evidence from some South African high schools **370**
Ruth O. Adesokan, & Alfred H. Makura

An effective method of teaching English tense and aspect through time adverbs **375**
Chikako Takahashi, & Akemi Matsuya

The influence of mother tongue in second language learning in primary school **380**
Pule Phindane

Investigation on teaching critical thinking in English course to young ESL learners in China **385**
Shu Jia

Exploring student teachers' learning strategies and the relationship with academic achievement and demographic variables **389**
Esther Chiner, Marcos Gómez-Puerta, & María Cristina Cardona-Moltó

Nature of science interdisciplinary teaching based on symmetry and the search of invariants **394**
Simone Brasili, & Riccardo Piergallini

An assessment of curriculum-specific learning difficulties in natural sciences within the South African context **399**
Mafor Penn, & Ramnarain Umesh

Visual literacy for the 21st century: the required ability to understand the power of modern images **404**
Bozena Supsakova

A cloud in a cupboard: How to teach modern technologies in a resource-constrained environment **409**
David Cutting, Andrew McDowell, Neil Anderson, Paul Sage, Matthew Collins, & Angela Allen

Early year teachers' understanding and implementation of science process skills **414**
Ayodele Ogegbo, & Umesh Ramnarain

The relevance of leadership styles in the quality of early childhood educators: a multiple cases study **419**
Emilio Rodríguez-Ponce, & Liliana Pedraja-Rejas

Drawing vs. Design: A study on industrial design BSC in Italy **423**
Fausto Brevi, & Flora Gaetani

Development of an animated video for pre- and postoperative learning for osteoarthritis patients **428**
Erik Kylén, Joel Stenholm, & Ann Svensson

Organizational Issues

EHEA international students mobility and transparency **433**
Tijmen Weber, Florentin Popescu, & Roman Iskandaryan

Research on the causes of the "undergraduate migrant worker" phenomenon based on the theory of labor market segmentation **438**
Yuheng Zhang

The evolution of china's private education policy: historical review and path analysis **443**
Yang Li

Teachers' opinions on professional support measures for novice teachers in Latvia **448**
Anda Grinfelde, Inga Vanaga, & Liga Paula

Employer branding as recruitment and retention tool for the universities **453**
Asta Radzevičienė, & Aleksandra Sokolova

Analysis of Chinese policy of tuition-free normal college students: purpose, content and effect **458**
Xue Yuankang

POSTERS

Teachers and Students

Subject teachers and enhancement of students' English proficiency in selected senior six classrooms in Rwanda **465**
Speciose N. Ndimurugero, & Gloriose Mugirase

The effects of local-specialized career experience programs on Korean students' career maturity and community awareness **468**
HwaChoon Park, & JangHoe Ku

Projects and Trends

Active methodologies and aware education for future secondary schools teachers **471**
Consolacion Gil, & Maria Dolores Gil-Montoya

A systematic scoping review on skills variety for vet in the industry 4.0 **474**
Francesco Tommasi, Ioris Franceschinis, Marco Perini, & Riccardo Sartori

Teaching and Learning

ICT competencies of first-year university students **477**
Daiva Rimkuvienė

Eugenics today: An interdisciplinary teaching for higher education **480**
Andreas-Evangelia Spathi, Afroditi Kalemi, Athina Kontostavlaki, Evridiki Efstathiou, & Lefkothea-Vasiliki Andreou

Building integrated pathways to independence for diverse biomedical researchers: project pathways **483**
Maryam Foroozesh, Kathleen Morgan, Marguerite Giguette, Kelly Johanson, & Clair Wilkins-Green

Brain music: introducing research thinking to the secondary education curriculum **486**
Athina Malliou, Spyretta Vaxevanidi, & Lefkothea-Vasiliki Andreou

AUTHOR INDEX **489**