

International Conference on
Information Communication
Technologies in Education

ICICTE 2019



Conference
Programme

4-6 July,
Chania Crete, Greece

A welcome from the organisers

On behalf of the organisers of ICICTE 2019, I would like to bid you all welcome to Minoa Palace Resort on the gorgeous island of Crete for the International Conference on ICT in Education 2019. This conference, now in its 19th year, has proved resilient because of its wide ranging programme, examining multiple aspects of the challenges that using different technologies in education bring with them.

ICICTE has gone from strength to strength because of its scientific excellence, its great networking capabilities, its excellent social calendar... all contribute towards it having been around for this long. Along the years ICICTE has gathered a core group of dedicated participants... the conference family... that have spurred it on into ever more excellent directions. And each new participant that it adds to its roll call quickly falls into place as one of the family – because it is a conference based on the need to explore, to know, to understand and, ultimately, to provide solutions.

We look forward to welcoming our Keynote Speakers, who this year both come from one of the conference's main sponsors, the Commonwealth Centre for Connected learning, Professor John-Peter Portelli from the University of Toronto, and Dr Alex Grech, from the University of Malta. Both are absolute experts in their field. Professor Portelli will talk about social justice in education... an area that is so close to the humans that are the learners, that it is sometimes forgotten, lost behind the glitz of technology. Dr Grech's expertise in Blockchain technology use in education is well known, and it is a subject that has come up quite extensively in recent ICICTEs.

Their keynote presentations will instigate an inspiring discussion among ICICTE delegates, particularly in our

Philosophers' Café session on the Saturday afternoon of the conference – an opportunity to have a much more detailed and wide-ranging discussion with keynote and delegates.

As always, we must offer our heartfelt thanks to all of those who make this conference a success. In particular these include our Conference Director Nancy Pyriani. ICICTE would not be even remotely feasible without her tireless work. She deals not only with the indispensable logistics, but also is the face of the conference to our many delegates. This year she has also taken on the job of registrar. Nancy is both the mind and heart of ICICTE. There would not be this annual get-together of friends without her.

Thanks also go to Conference Manager George Sarrigeorgiou for all his help at the front desk of the conference and generally helping out with anything and everything, and to Marie Louise Kold, both for her photography, and for the unique pieces of artwork that she creates each year for the conference awards. These are unique and special pieces, giving added value to ICICTE – where else would you get original pieces of art from an internationally renowned artist for awards! Thanks too to Litsa Varonis for her sterling work on the proceedings.

I would also like to thank our sponsors, The Commonwealth Centre for Connected Learning, Solent University of Southampton and the Faculty of Public Administration, University of Ljubljana, And specifically to Alex Grech, Chris Barlow and Aleksander Aristovnik.

Once again I look forward to a great ICICTE event, and to meeting you all over the course of the conference.

Görg Mallia

On behalf of the Steering Committee,
ICICTE 2019, Crete



ICICTE 2019 Steering Committee

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A class photo of some of the delegates that attended ICICTE 2018 in Crete



ICICTE 2019 Programme

Thursday – July, 4

09:00 – 10:00

Registration

Athina Lobby

10:00 – 11:30

Opening Ceremonies and Keynote Address

Hall Athina

Welcome and Introduction of the Keynote Speaker: *Dr Ġorġ Mallia*, Chair of the Communications Committee and Communications Coordinator, Head of the Media and Communications Department, Faculty of Media and Knowledge Sciences, University of Malta, MALTA

Keynote Address:

CONNECTED LEARNING AND SOCIAL JUSTICE EDUCATION IN NEOLIBERAL TIMES: CHALLENGES AND POSSIBILITIES

Professor John-Peter Portelli
Professor in the Department of Social Justice Education and co-director of the Centre for Leadership and Diversity, OISE, University of Toronto, Canada.

We are living in the midst of a robust neoliberal context that privileges excessive individualism and competition, narrow views of accountability, standardization, and democracy defined as a dangerous form of license that privileges those that traditionally have been privileged. Building on research in Canada and Malta, this presentation will identify the challenges that educators who promote and actualize Connected Learning from a Social Justice Education perspective face. It will be

argued that neoliberalism is the new form of colonialism. The presentation will also make suggestions about how to deal with these challenges on the basis of “the ethics of subversion.”

11:30 – 12:00 – Coffee

Athina Lobby

12:00 – 13:30

Concurrent Sessions 1-2

Plenary Session 1: Rethinking the Practice of Teaching

Hall Athina

Moderator: Dr Chris Barlow, Solent University, United Kingdom of America

ICT IN TEACHER EDUCATION:
EDUCAMPS AND PEER LEARNING
Sólveig Jakobsdóttir, University of Iceland, Iceland

Educamp is an event where participants share possibilities of software tools and network with each other. This method has been used at the University of Iceland from 2014 to the present in a course on Information Communication Technologies (ICT) for undergraduate teacher students who are earning a B.Ed. degree. They submitted reflections about their contributions and experiences. Most rated the educamp as interesting/fun and felt they had learned much. Participants enjoy and learn from the educamp method to reflect and think about using ICT in education. The method can be recommended as a way to increase ICT competences of teacher students.

PEDAGOGICAL SIMULATION AS A TOOL FOR PROFESSIONAL DEVELOPMENT AMONG INTERNS IN TEACHING

Zuhaira Najjar, Wafa Zidan, & Roseland Da'eem, The Arab Academic College For Education In Israel-Haifa, Israel

This study was carried out in a mixed approach of qualitative and quantitative methodology in order to examine the satisfaction of intern-teachers with a simulation-based learning method. It presents participants' perceptions regarding a simulation workshop's contribution to the professional development of beginning teachers. Findings indicate remarkable satisfaction of the participants with the simulation-based learning method. They perceive the simulation as an effective learning method that contributes to acquiring communication skills and assists in conflict resolution and analysis of classroom scenarios. It contributes to their professional development and, therefore, they suggested an increase in their participation in the simulation workshops during their internship process.

IN SEARCH OF ONLINE LEARNING 3.0 IN HIGHER EDUCATION—THE ROLE OF THEORY-BASED PROCESS EVALUATION

Monica Liljeström, Hanna Paulin, & Carina Holmgren, Umeå University, Sweden

In this paper, a model for theory-based process evaluation in online learning is suggested and discussed in relation to its potential as a tool to reveal strengths and weaknesses in a current online module in a fully online course in Educational Science Education. The suggested focal points at this stage of the process evaluation plan are based on socio-cultural outlooks on learning and guided by theory-based process evaluation theory. The evaluation model will be tested for the first time in autumn 2019.

MULTIMODAL CARTOGRAPHIC MAPPING: ECOPEDEGOGICAL SPACES IN THE EVOLVING AUSTRALIAN TECH ENVIRONMENT

Katherine Bates, University of Technology Sydney Broadway, Australia

This paper describes the design and implementation of a project that involved embodied outdoor experiences for mapping Country using ICT. The project was undertaken by preservice teachers learning about the Geography sub-strand within the Humanities and Social Sciences Australian curriculum as part of the Bachelor of Education, Primary - Aboriginal and Torres Strait Islander Education Program. Results indicate that immersive learning experiences can be embedded authentically with technology to collect and present data. Findings also suggest that pre-teachers can benefit from outdoor experiences utilizing ICT to develop their understanding of symbiotic relationships between technology and immersion pedagogies in teaching practices.

Plenary Session 2: Advancing a Culture of Innovation: Online, Blended, and Virtual

Hall Ariadne

Moderator: Dr Marcie Boucouvalas, Professor Emerita, Virginia Tech, United States of America

EVALUATION OF AN E-LEARNING COURSE IN MOODLE IN COMPARISON TO A TRADITIONAL LESSON

Heidi Schuhbauer, Technische Hochschule Nürnberg Georg Simon Ohm, Germany

A Moodle course was used in an e-learning unit to compare undergraduate students' outcomes to those in a traditional lesson. A traditional teaching unit was presented for a parallel

control group. After the lessons, the students performed the same exercises. Afterwards, the learning success of the students was compared. In addition to the quiz assessment, the students were asked about their personal impressions in a questionnaire. The result of the quiz was that the group with the traditional lesson achieved results that were slightly better than those of the e-learning group. The evaluation revealed that the students' opinions about the e-learning course differ more than the opinions about the traditional unit.

PREDICTING PERFORMANCE AND ANALYZING STUDENTS' BEHAVIOR FROM COMPUTER-GENERATED LOG FILES IN MOODLE

Lan Umek, Damijana Keržič, Nina Tomažević, & Aleksander Aristovnik, University of Ljubljana, Faculty of Public Administration, Slovenia

This paper presents the results of the investigation into whether the student's behavior in the e-classroom in terms of action logs correlates with their academic performance. The empirical research was based on logs obtained from Moodle, which is used to manage blended learning at the faculty. The main finding from this research is that there is some relationship between some types of interactions and academic performance in selected online courses. The findings of the paper confirm that by monitoring Moodle activity data, lecturers can identify weak students and promptly adjust and individually support their pedagogical activities during the semester.

BLENDED LEARNING IN LSP ACADEMIC PROGRAMMES: CHALLENGES AND BENEFITS

Mohammad M. Etedali, University of Jyväskylä, Finland

Extensive use of technologies has brought many changes into different aspects of life, including teaching and learning. Teaching and learning languages are not exceptions and they have witnessed tremendous changes in the past 25 years. These changes put the need to learn languages to improve communication into spotlight. Language for Specific Purposes (LSP)—aka ESP: English for Specific Purposes—programmes strive to prepare university graduates who are linguistically and communicatively proficient and adequately accurate in their areas of expertise. This paper is an attempt to address some of these challenges in university LSP programs and offer possible solutions.

DEBATE "PRO ET CONTRA" AS AN EFFICIENT METHOD FOR BUILDING PLURAL COMMUNITIES OF TEACHERS AND PHD STUDENTS IN A MUTUAL COOPERATIVE LEARNING PROCESS

Aleksandar Kešeljević, University of Ljubljana, Slovenia

Economic theory lost the capacity of an anthropocentric view of the world due to the domination of the neoclassical paradigm and the lack of pluralism within economics and beyond it. Debate is an appropriate educational method for introducing more pluralism into the education of today's PhD students in order to foster their understanding of today's emerging problems. This paper presents debate "pro et contra" as a highly structured rhetorical event and disciplined conversation about topics of interest with opposing advocates alternating before a decision-making body. The qualitative analysis shows that debate, including virtual debate, increases students' capacity for critical, controversial and original thinking and that is a highly efficient method for promoting a more cooperative learning process. In this way, knowledge is necessarily

dispersed and not given completely to anyone since it is embedded not only in a traditional one-way transfer of knowledge from teachers to students but also in debates, teamwork and class conversations.

13:30 – 15:00

Workshops

Hall Athina

DESIGN A LEARNING ADVENTURE

Facilitator: Henrik Krantz, Johan

Borvén and Fredrik Åkerlind,

Göteborgsregionen, Sweden

Hall Ariadne

COLLABORATIVE ONLINE
INTERNATIONAL LEARNING (COIL)—
INTERNATIONALIZING UNIVERSITY
CURRICULUM

Facilitators: Dr. Purba Das &

*Dr. Sheida Shirvani, Ohio University,
U.S.A.*

15:00 – 17:00

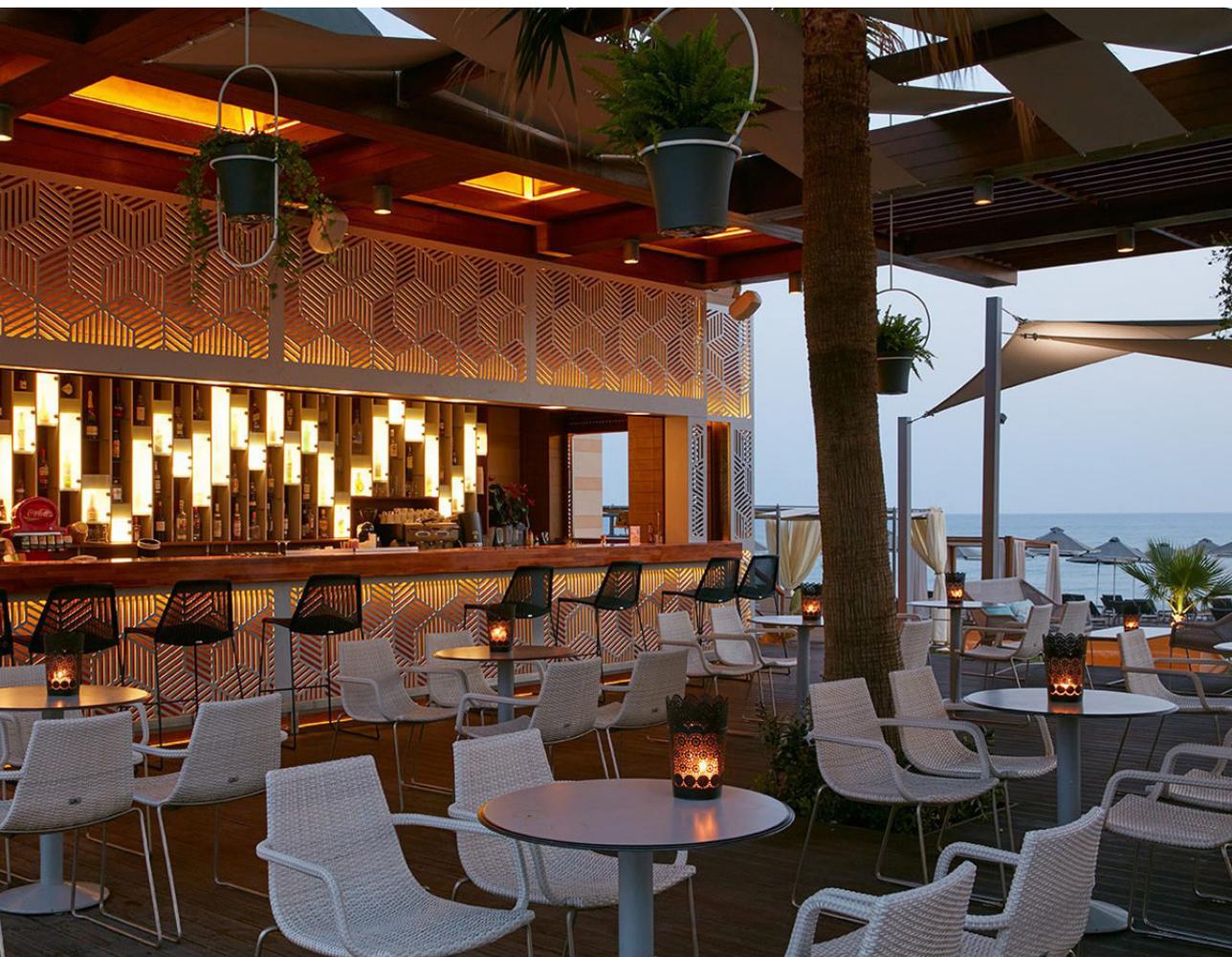
Lunch

Thalassa Restaurant

20:00

Welcome Reception

Thalassa Restaurant



Thalassa Restaurant at the Minoa Palace in Crete, where the welcome reception and lunch will be held

Friday – July, 5

09:00 – 10:00

Poster Session

Hall Athina

Adjudicating Panel:

Dr Marcie Boucouvalas, Professor Emerita, Virginia Tech, United States of America

Dr Ġorġ Mallia, University of Malta, Malta

Dr Linda Morris, Northwestern State University, Natchitoches, Louisiana, United States of America

Dr Zuhaira Najjar, The Arab Academic College for Education in Israel-Haifa, Israel

Dr Costas Tsolakidis, Professor Emeritus, University of the Aegean, Greece

INTERVENTION WITH AHA SYSTEM TO IMPROVE SPELLING AND READING SKILLS FOR STUDENTS DIAGNOSED WITH ASD

Eleni Mangina, School of Computer Science, University College Dublin, Ireland; Giuseppe Chiazzese, Consiglio Nazionale delle Ricerche, Istituto per le Tecnologie Didattiche, Italy; Rita Treacy, WordsWorth Learning LTD, Ireland, & Anastasia Pyrini, School of Computer Science, University College Dublin, Ireland

ENHANCING SPATIAL PERCEPTION OF VIRTUAL OBJECTS THROUGH MID-AIR FEEDBACK FOR USERS WITH HEARING OR SIGHT IMPAIRMENT

Tychonas Michailidis, Chris Barlow, & Jaz Marshall-Porter, Solent University, Southampton, United Kingdom

BASE: BEHAVIOURAL ASSESSMENT TO IMPROVE SCHOOL ENVIRONMENT PROJECT

Giuseppe Chiazzese, Consiglio Nazionale delle Ricerche - Istituto per le Tecnologie Didattiche, Italy; Eleni Mangina, School of Computer Science, University College Dublin, Ireland; Sui Lin Goei,

Stichting Vrije Universiteit Amsterdam, Netherlands; Gianluca Merlo, Anastasia Pyrini, Consiglio Nazionale delle Ricerche - Istituto per le Tecnologie Didattiche, Italy; Anca Menina Danci, Fundatia de Abilitare Speranta, Romania

INTEGRATING MOBILE AND BLENDED LEARNING IN UNIVERSITY TEACHING: TEACHERS' TALK ABOUT STUDENTS' PERCEPTIONS

Marcia Håkansson Lindqvist, Department of Education, Mid Sweden University, Sundsvall, Sweden

COMBINING VIRTUAL REALITY AND ACOUSTIC MODELLING TO CREATE AN IMMERSIVE EXPERIENCE OF ANCIENT BUILDINGS: THE ODEON HERODES ATTICUS, GREECE

Christopher Barlow and Eleni Tavelidou, Solent University, Southampton, UK

BLENDED LEARNING—A WHOLE FACULTY APPROACH

Karin Thiele Watson, University UNSW Sydney, Australia

10:00 - 11:30

Keynote Address

Hall Athina

THE BLOCKCHAIN AND EDUCATION: EXPLORING OPPORTUNITIES AND DEBUNKING MYTHS

Dr Alex Grech, Director, Commonwealth Centre for Connected Learning, Valletta, MALTA

In 2019, the Blockchain continues to be associated with cryptography and the fintech industry, with seemingly modest inroads into the education sector, with the exception of the research community. Yet in some parts of the world, blockchain is becoming synonymous with decentralised consensus solutions to long-standing challenges for both education institutions and students.

The keynote will provide a quick introduction to the blockchain and explore how the affordances of the technology provide an opportunity to re-think qualifications, credentials, identity, trust and self-sovereignty in the education value chain. It will lever on ongoing studies for the European Commission and first-hand experiences in setting up the first nation-state pilot aiming to notarise all citizens' education credentials on the blockchain. The presentation will conclude with ideas on what the future may hold as the blockchain becomes less of a novelty technology and more embedded in everyday life.

11:30 – 12:00 – Coffee
Athina Lobby

12:00 – 13:30
Concurrent Sessions 3-4

Plenary Session 3: Measuring Undergraduate Learning: Implementation and Impact

Hall Athina

Moderator: Moderator: *Dr Ġorġ Mallia*,
University of Malta, Malta

THE EFFECTIVENESS OF PEER ASSESSMENT IN THE FLIPPED CLASSROOM

Wing Shui Ng & Ka Luen Cheung, The Education University of Hong Kong, Hong Kong

The flipped classroom pedagogy has been promoted to encourage students to learn at their own pace outside the classroom and with the absence of teachers. Valuable in-class time can thus be freed up for students to deepen their understanding of the content. However, learning at home can promote a lackadaisical learning environment. Student learning relies heavily on learning motivation. To address this mo-

tivational challenge, a peer assessment component was deliberately integrated into the flipped classroom pedagogy in this study. Preliminary results suggest that the students demonstrated a good attitude in the pre-lesson peer assessment process, and they were satisfied with the peer assessment activity.

THE IMPACT OF BLENDED LEARNING ON STUDENT PERFORMANCE IN AN INTENSIVE BLOCK MODE TEACHING SETTING

Fotios Sidiroglou & Neil Fernandes, Victoria University, Australia

In an attempt to transform the first-year student experience, Victoria University adopted a Block Teaching Model. Under this 3.5 weeks-long intensive setting for a physics unit, face-to-face sessions were complemented with various blended learning initiatives, including interactive HTML5 (H5P) rich video presentations, an open-access electronic textbook, and online simulations and quizzes. A strong correlation between student performance in assessment tasks and participation in corresponding blended learning activities was discovered. Similar findings were obtained by analysing gain in student conceptual understanding. These results clearly showcase how technology enabled learning can enhance student performance in an intensive block mode teaching setting.

IMPACT OF FEEDBACK IN CLINICAL EDUCATION: HIGHLIGHTS AND CHALLENGES OF THE FEEDBACK LOOP FOR HEALTH PROFESSIONAL STUDENTS

Sophia Xenos, Anna Pietrolungo, & Sonja Cleary, RMIT University, Australia

The provision of feedback to students forms an integral part of the learning process. Indeed, effective, regular, and consistent feedback has the potential to reinforce good practice and motivate

the student learner towards the desired outcome. This is particularly important in a clinical learning environment, where students are developing critical skills as future health care professionals. Unfortunately, despite the important role of feedback in student learning, skills in giving and receiving feedback are rarely taught to students or clinicians. The current study describes the outcomes of the “feedback-loop” – a clinical innovation which aimed to improve the preparation of undergraduate and postgraduate health professional students with their clinical work via the introduction of effective and consistent performance feedback opportunities to students regarding various aspects of their clinical skill development. This initiative was introduced across five courses within the School of Health & Biomedical Sciences, where many of the programs are focused on the development of clinical competencies in the healthcare setting. Increases in student ratings of course satisfaction and clinical competencies were shown following implementation of the feedback-loop. Key highlights, implications, and challenges of this clinical initiative are discussed.

IMPROVING STUDENT ENGAGEMENT AND SELF-REGULATED LEARNING THROUGH TECHNOLOGY-ENHANCED STUDENT PARTNERSHIPS

Julie Crough & Christopher Love, Griffith University, Australia

Teaching and learning in higher education for the Science, Technology, Engineering and Mathematics disciplines are renowned for their challenges. This paper explores how embedding a personal learning platform (PebblePad) through a Students as Partners (SaP) initiative has resulted in a higher degree of student engagement in a second-year biochemistry course and unexpected benefits for students based on reflec-

tions about their experience. Adopting a digital platform enabled surprisingly honest, uninhibited and extensive student reflections. In addition, while the coupling of the SaP initiative with educational technology has exceeded expectations, early findings suggest that the process is also contributing positively to students' self-regulated learning.

TEACHING TO SOLVE GLOBAL WARMING WITH DATA SCIENCE
Cédric Mesnage, Solent University, Southampton, United Kingdom

We report on the design and execution of a Data Science assignment in which students work on Global Warming issues and predict the outcome of solutions. The paper outlines how to solve Global Warming through the design of an assignment and gives elements of answers to research questions regarding research in the classroom, the benefits to students and how to influence policy makers.

Plenary Session 4: Integrating Technology in the P-9 Curriculum

Hall Ariadne

Moderator: Moderator: *Evangeline Marlos Varonis, Hiram College, United States of America*

DIGITAL TECHNOLOGIES IN PRESCHOOL TEACHER WORK TEAMS' USE OF SHARED ACTIVE SCREEN

Marcia Håkansson Lindqvist, Mid Sweden University, Sweden

This paper explores the possibilities and challenges related to the use of Shared Active Screen (SAS) from the preschool teacher work team perspective. Using learning reflections, seven work teams reflected upon the possibilities and challenges related to the use of SASs. The work teams saw challenges related to accessibility, time and professional



development. Possibilities were the use of SASs in curriculum-based teaching activities and involving the children in collaborative learning activities. How preschool teacher work teams develop the use of SASs over time in their teaching activities with preschool children will be important for supporting children's learning with digital technologies.

TECHNOLOGICAL TEACHING MATERIAL IN SCIENCE CLASSES OF GREEK ELEMENTARY SCHOOLS

Konstantinos Karampelas & Michael Skoumios, University of the Aegean, Greece

This paper aims to examine the integration of technologically oriented instructional material in elementary science in Greece. Such material is justified by research to assist science teaching. Whether teachers decide to use it depends on their knowledge and perceptions around teaching generally, the subject they teach and ICT. Based on these findings, this research study was designed aiming to show which materials teachers prefer to use in their work. This has not been thoroughly examined by research so far. Through observations and statistical analysis, the research draws conclusions about teachers' selections and suggests ideas for further projects.

IT'S ALL ABOUT THE MIDDLE: PLACING A PEDAGOGICAL FRAMEWORK AT THE CENTER OF PRACTICE IN STEM EDUCATION

Jane Hunter, University of Technology Sydney, Australia

The Organisation for Economic Co-operation and Development (OECD) suggests that education reform initiatives in Science, Technology, Engineering and Mathematics (STEM) will require substantive changes in how these disciplines are taught at school and in teacher education institutions. In this paper I take up these challenges by examining how a longitudinal research study in six Australian primary schools supported changes to middle leaders' classroom practices in teaching and learning. The findings demonstrate how a pedagogical framework positioned alongside professional development and working with an academic partner in a process of action research is effective for teacher professional learning in STEM.

IMPLEMENTING TABLETS IN NORWEGIAN PRIMARY SCHOOLS: EXAMINING OUTCOME MEASURES IN THE SECOND COHORT

Rune J. Krumsvik, University of Bergen, Norway; Erling Berrum, Rambøll Management, Norway; Lise Øen Jones, University of Bergen, Norway; Ingrid P. Gulbrandsen, Rambøll Management, Norway

This study examines the implementation of tablets in primary schools in Norway. The outcome measures in the study are external for the intervention and are recorded data from national tests (National reading, arithmetic and English Tests, Classes 5, 8 and 9; National Mapping Tests for reading and arithmetic, Classes 1–3; and the 2014–2017 National Pupil Survey). The entire study (N=15,708) relies on an explanatory, sequential

mixed-methods design (Fetters, Curry, & Creswell 2013), and in this study we examine the quantitative effects of this implementation. The results indicate that the impact of tablets on pupils' school achievement varies. It seems that tablets contribute more positively to boys' school achievements than to girls' school achievements. However, we cannot rule out that a grade effect may also have an impact on the results, and we therefore request that the results be read with this reservation.

13:30 – 15:00
Workshops

Hall Athina
CONDUCTING PROGRAM REVIEW
USING A LEARNING ANALYTICS
Facilitator: Dr. Christine Armatas, Associate Director Educational Development, The Hong Kong Polytechnic University, Hong Kong.

Hall Ariadne
AN ENGAGING CLASSROOM:
ANATOMY WITH 3D PRINTED MODELS
Facilitators: Mr. Nicholas Tripodi, First

Year College and Institute of Health and Sport, Victoria University, & Dr. Maja Husaric, First Year College, Victoria University, Australia

15:00 – 17:00
Lunch

Thalassa Restaurant

17:00 – 18:30
Workshop

Hall Athina
LIFELONG LEARNING AND ICT BLENDING
THE MOVEMENTS
Facilitators: Dr Linda Morris, Adult Development Associates, United States of America & Dr Marcie Boucouvalas, Professor Emerita, Virginia Tech, United States of America

Interviews

Hall Ariadne
Speak personally with Stacie Boucouvalas-Gianourakos

Share your experiences of ICICTE and your areas of expertise with Stacie, who is documenting the conference which is now in its 19th year. Your cooperation would be greatly appreciated.

Thalassa Restaurant during the opening night reception of ICICTE 2018



Saturday – July, 6

09:00 – 10:30

Session 5 and Workshop

Plenary Session 5: Digital Skill Sets and Mind Sets

Hall Athina

Moderator: Dr Linda Morris, Adult Development Associates, United States of America

A ROBOT AS A TOOL FOR COGNITION

Derrick Kachisa & Linn Gustavsson, University West, Sweden

Various kinds of robots are available for use in education; however, their mere availability should not be enough

reason to use them as a learning tool. Different types have different appearances, structures (hardware), systems (software) and functions (behavioral outcomes). These features serve an important role in determining the curricula, the instructional activities, and the learning objectives. The suitability of a robot as a learning tool depends on how it fits into a learner's environment, the role it plays and how learners engage with it in order to achieve a learning objective. This study presents a theoretical framework, key research areas, and practical examples of how we use robots in practical learning examples both in an academic educational environment and in industry. Challenges and benefits are discussed.

Greek Night dinner, ICICTE 2018





DEMONSTRATING APPLICATIONS FOR LEARNING ANALYTICS FOR PROGRAM REVIEW

Christine Armatas & Christine F. Spratt, The Hong Kong Polytechnic University, Hong Kong

The Program Review Tool (PRT) has been developed to conduct program-level learning analytics. Examples of review outputs using the tool illustrate its value, showing how the PRT allows users to conduct analyses that provide insights for improving the curriculum and for supporting students during their studies. PRT analyses address questions about program progression and retention, factors influencing academic outcomes and how to improve the curriculum and subjects. With the PRT, users can conduct a standard review or explore program data themselves, making it a powerful yet flexible tool for enhancing program quality.

FOSTERING A CRITICAL APPROACH TO DIGITAL TECHNOLOGY IN GRADUATE LANGUAGE TEACHER EDUCATION AND POSTGRADUATE INTERDISCIPLINARY PROGRAMS

Eliane Fernandes Azzari, Pontifical University of Campinas, Brazil

In this paper, I debate the role of tertiary educators in legitimizing practices that foster the use of digital technologies in educational settings. Adopting the narrative inquiry as methodology and grounding the discussion in critical literacy studies, I present my own practical knowledge as a professor in a Brazilian university. My interpretation suggests that some of the graduate and post-graduate projects developed under my supervision have presented practical ideas leading to the adoption of a criti-

cal approach to language, technology and society. This favors and fosters citizenship and social justice approaches to foreign language education activities in Brazilian schools.

DIGITAL SELF DEFENCE—TOWARD A HUMANIST CIVIC CYBER-SECURITY SYLLABUS

Andy Farnell, Solent University Southampton, United Kingdom

The pressing necessity and significant challenges for a course in 'Digital Self Defence' are explored in this paper. In light of widespread failure to usefully communicate deep technical knowledge necessary to protect citizens amidst an increasingly hostile and complex digital landscape, an alternative approach based on film, literature, psychology and game theory is developed. A description of the content and motivations for pilot lectures is offered along with commentary on successes and failures of certain methods and messages, and the course's impact on students' lives.

Workshop

Hall Ariadne

PERSONAL AND PROFESSIONAL LEARNING NETWORKS FOR EDUCATORS

Facilitator: Ariane Skapetis, NSW Department of Education, Australia

10:30 – 12:00

Workshops

Hall Athina

ACTIVE LEARNING AND PERSONALISED FEEDBACK: FORMATIVE ASSESSMENT AND FEEDBACK PRACTICES IN THE CLASSROOM AND ONLINE

Facilitator: Dr Timos Almpanis, SFHEA, Kingston University, London, United Kingdom

Hall Ariadne

THE USE OF VIRTUAL, EXTENDED AND MIXED REALITY IN EDUCATION AND TRAINING: OPPORTUNITIES AND CHALLENGES

Facilitators: Chris Barlow, Solent University, Southampton, UK, & Gordon Meadow, Seabot XR, Winchester, UK

12:00 – 13:30

Philosopher's Café

Facilitator: Dr Ġorġ Mallia Galini at the Imperial Congress Lobby

The Philosophers' Café, animated by the ICICTE keynote speakers, is a place to discuss important areas within technology in education.

The informal setting and the format, which is in the round, helps the discussion be both objective and personal. The Philosophers' Café adds value to what ICICTE participants' gain from the conference. It encourages participation and intellectual discourse and creates a living network of knowledge.

13:30 – 14:30

**Closing Ceremonies
Hall Imperial 4**

ICICTE keynotes

Dr Costas Tsolakidis, Steering Committee

ICICTE Best Poster Award

Dr Alex Grech, Director, Commonwealth Centre for Connected Learning, Valletta, MALTA.

Friend of the Conference Award
Nancy Pyriani, ICICTE Founder and Director

Acknowledgements and Closing Remarks

Dr Ġorġ Mallia, Chair of the Communications Committee and Communications Coordinator

20:00 - Closing "Greek Night"

Dinner

**Limanaki Restaurant
Platanias**

Limanaki Restaurant, the venue for this year's Greek Night dinner



Poster Session Abstracts

INTERVENTION WITH AHA SYSTEM TO IMPROVE SPELLING AND READING SKILLS FOR STUDENTS DIAGNOSED WITH ASD

Eleni Mangina, School of Computer Science, University College Dublin, Ireland; Giuseppe Chiazzese, Consiglio Nazionale delle Ricerche, Istituto per le Tecnologie Didattiche, Italy; Rita Treacy, WordsWorth Learning LTD, Ireland, & Anastasia Pyrini, School of Computer Science, University College Dublin, Ireland

The AHA (AdHd Augmented) pilot project focuses in particular on the implementation and integration of existing technologies (such as mobile apps, online literacy programme, and augmented reality development) to enhance spelling and reading for students diagnosed with Attention Deficit Hyperactivity Disorder (ADHD), assist their parents and educators during the teaching and assessment process, and investigate whether the combination of such technologies can assist students with ADHD to stay focused, make fewer mistakes, and finish assignments at school as well as homework. AHA delivers an Augmented Reality (AR) solution for an existing online literacy programme developed from WordsWorthLearning (WWL), which integrates a set of specific technologies and supports interactive educational content, services, assessment, and feedback. Development of AHA focused on the cooperation with academia, ADHD experts, schools, and providers of existing digital solutions that will define the framework and interoperability requirements of such a data-driven, data-intensive, and innovative digital learning ecosystem. This poster describes the vision to expand on the expertise gained over the Augmented Reality intervention to create

an inclusively-designed platform for children with Autistic Spectrum Disorder (ASD). Literature reviews have shown that both children on the autism spectrum and their neurotypical peers learn best exposed to various learning styles and teaching methods (Visual; Auditory; Tactile or Kinesthetic). Through the review of the “Cone of Learning”, (based on the Cone of Experience introduced by Edgar Dale in 1946), it appears that the best learning actually comes from the combination of multiple modes of teaching rather than just focusing on one type of sense as a primary method. The poster shows the process followed in an AR-based solution to identify the preferences for knowledge provision and accessibility for students with ASD in the 21st century. Research studies indicate that students with autism choose majors in Science, Technology, Engineering and Maths (STEM) at higher rates than students in the general population. They are “looking for patterns, and in Science it is natural to look for patterns that reflect natural law”. Recent research has shown that students have positive perceptions of AR lessons and simulators for STEM subjects. This study focuses on the specific task for spelling and reading with AR technology intervention.

Project website: <https://aha.ucd.ie/>

ENHANCING SPATIAL PERCEPTION OF VIRTUAL OBJECTS THROUGH MID-AIR FEEDBACK FOR USERS WITH HEARING OR SIGHT IMPAIRMENT

Tychonas Michailidis, Chris Barlow, & Jaz Marshall-Porter, Solent University, Southampton, UK

There is an increasing demand to enhance the user's ability to better identify the location of sound events and virtual objects in 3D space. The demand is not only within the gaming industry, but also

with users with disabilities looking to engage with VR technologies. In doing so, users can increase their ability to interact with virtual and digital worlds. Wearable technologies that provide haptic feedback experience to users, such as gloves and gaming controllers, often require time to 'put them on'; users are aware of the technology on their body; they require calibration to the individual user and often restrict movement.

Our research explores the relationship between aural and haptic feedback modalities and how they may compensate each other. Specifically, we examine ways in which mid-air haptic feedback, using ultrasound technology, is used to improve our understanding regarding the position and direction of virtual sound objects. A prototype system, developed in Unity, enables objects on screen to provide information about their virtual location, direction and size through haptic feedback received on the palm as well as through binaural audio. For example, one may locate more accurately the direction and distance of a conversation taking place behind him through the combination of haptic and aural feedback rather than with audio only. Our system can support visually-impaired children to learn about the world around them, such as distance and shape of objects, as well as improving accessibility in immersive applications for people with hearing loss.

Users are asked to identify the position of sound objects through binaural listening with and without haptic feedback. We measure how well they perform in terms of accuracy. We have also examined how users experience movement such as left and right, front and back, and diagonal. Preliminary results show a higher rate of success when haptic feedback is used with the ability to enhance the spatial perception of users.

BASE: BEHAVIOURAL ASSESSMENT TO IMPROVE SCHOOL ENVIRONMENT PROJECT

Giuseppe Chiazzese, Consiglio Nazionale delle Ricerche - Istituto per le Tecnologie Didattiche, Italy; Eleni Mangina, School of Computer Science, University College Dublin, Ireland; Sui Lin Goei, Stichting Vrije Universiteit Amsterdam, Netherlands; Gianluca Merlo, Anastasia Pyrini, Consiglio Nazionale delle Ricerche - Istituto per le Tecnologie Didattiche, Italy; Anca Menina Danci, Fundatia de Abilitare Speranta, Romania

The Behavioural Assessment to Improve School Environment project (BASE), in response to the European requirement of reforming the whole scholastic disciplinary system, identifies a solution in the proven US-born concept of the Positive Behaviour Approach (PBS) and adapts its practical and evidence-based principles to the heterogeneous European school settings. In this scenario, the targets of the project are mainly school leaders, teachers and all students including those coming from vulnerable groups. Scientific studies have emphasised the promising role of PBS in reducing the occurrence of behavioural problems by setting up a preventive, proactive and multilevel system based on the direct involvement of the entire work team: starting from teachers, including school leaders, and extending to all actors of the community involved in the educational processes. The features of PBS are rooted in behavioural science and in the practice of Functional Behaviour Analysis (FBA). It works very well in coping with challenging behavioural problems in everyday school life. The expectation is that schools will deliver socially acceptable, effective, and efficient interventions to ensure safe and productive environments where prosocial behaviour is promoted and pupils can become successful adults. With the

purpose of achieving these goals, the rationale for this project is to combine the PBS approach with the FBA practice. The BASE project involves an innovative web-based software for the application of positive behaviour support at school. The tool helps school directors and teachers to prevent and effectively face the occurrence of problem behaviours as well as teachers' burnout and students' disengagement. The BASE project goal is to disseminate across Europe the philosophy underpinning the proven US concept of a PBS approach throughout the data collected with the BASE web application. The data collected have been imported into the BASE repository, which provides the Internet users with high quality contents about the application of PBS at school using Information Communication Technologies. Teachers benefit from the opportunity to access high quality content, good practices, and datasets easing the education of all students, including those with disabilities. The BASE project takes advantage of the considerable experience of an interdisciplinary consortium for the identification, adoption, implementation, and monitoring of the research-validated practices and for helping educators to understand and improve their teaching styles and approaches to meet emerging challenges as and when they arise.

Project website: <https://www.baseproj.eu/>

INTEGRATING MOBILE AND BLENDED LEARNING IN UNIVERSITY TEACHING: TEACHERS' TALK ABOUT STUDENTS' PERCEPTIONS

*Marcia Håkansson Lindqvist,
Department of Education, Mid Sweden University, Sundsvall, Sweden*

University teachers continue to integrate mobile and blended learning technologies in their teaching to support stu-

dent learning and student outcomes. This poster reports on a professional development project for teacher educators in a university in northern Sweden. At the end of a professional development project, twelve teachers were interviewed in order to explore teacher beliefs related to changes in teaching practices regarding the integration of mobile and blended learning technologies. This study takes this work one step further, seeking to more precisely explore how teachers talk specifically about students' perceptions of how students use mobile and blended learning technologies in their studies. The findings show that teachers report that students see the use of mobile and blended technologies as providing new possibilities for student learning. According to these teachers, some students see mobile technologies as supportive for their work, while other students perceive the need for support in seeing the benefit of the technologies. The teachers describe strong digital skills among certain students, as well as the need for basic digital skills among other students. Teachers also see the need to increase and develop their own skills in order to challenge and develop students' skills. The teachers in this study expressed the need for continued learning through professional development to support and advance students' perceptions of the possibilities related to integrating mobile and blended learning technologies. How universities provide professional development to support teachers' continued work will be of importance for promoting mobile and blended learning in teaching practices for supporting student outcomes. Moreover, how professional development to support teachers' use of mobile and blended learning technologies is aligned with students' perceptions may facilitate the advance of teaching and learning with mobile and blended learning technologies.

COMBINING VIRTUAL REALITY AND ACOUSTIC MODELLING TO CREATE AN IMMERSIVE EXPERIENCE OF ANCIENT BUILDINGS: THE ODEON HERODES ATTICUS, GREECE

Christopher Barlow and Eleni Tavelidou, Solent University, Southampton, UK

The use of virtual reality (VR) in educational settings can be considered to be a natural evolution of educational technology or computer-assisted instruction (Pantelidis, 2009). Virtual Reality (VR) tools have now become available at a low enough cost to be able to implement them in educational environments, offering the potential for large scale simulation without high expense. This has particular benefits for integrating experiential elements to enhance aspects of learning – for instance by the use of virtual field trips to help students experience and explore locations which would be impractical to visit (Tut-hill & Klemm, 2002), or to enhance the experience and increase engagement with learning tasks (Lau & Lee, 2015).

A particular area of interest is the exploration of historic spaces and monuments, particularly those which have changed significantly over time through redesign or ruin, and the concept of 'Virtual tourism' is now well established. With the recent development of Virtual Reality technologies at an accessible cost which are capable of rendering 3D environments of high level of detail and accuracy, a realistic representation and navigation within historic monuments can be achieved. This remote real-world experience can serve educational purposes and enhance visitor experience in museums and historical exhibitions.

The main focus of these studies has been visual exploration, but in order to fully experience the space, other senses must be taken into account, and there has been a lack of development of ol-

factory, haptic and acoustic representations of spaces. While the olfactory and haptic elements are still difficult to create, the acoustic space is now possible to recreate through software modelling. This is particularly useful when exploring spaces where the acoustic properties form an important part of the function of the space – for instance in houses of worship, spaces designed for musical performance and theatres.

This study investigates the development of an educational virtual reality application, in which users are able to investigate the acoustics of an ancient Greek Odeon: the Odeon of Herodes Atticus in its historic configuration.

The Odeon of Herodes Atticus (hereafter Odeon HA) is located in Greece in the western part of the ancient Athenian city, Acropolis and it was built by Herodes Atticus, a rich Greek aristocrat and sophist, between 160-169 A.D. It was considered the highest building in the country and its capacity could accommodate up to 6000 people. Around 267 A.D., the Odeon burned down. The restoration of this ancient monument started taking place in 1950, but the final reconstruction did not include the roof or several other structural elements. As a theatre, it has been used mainly during the summer period (April to late September) for various events and performances since its reconstruction.

Recent investigations by Manolis Korres (2014) indicated the existence of a roof which covered the theatre in full. An architectural model was created of the suggested roofed structure, and acoustic modelling software was used to predict the acoustic performance of the space both when empty and with an audience. The audio information was then integrated into a virtual reality model using the Unreal 4 engine



and Steam Audio plugin, resulting in an experience which allows the user to virtually explore the space, including listening to how music performed on the stage would sound from different locations around the auditorium.

As sound is one of our most important senses with regards to the environment, the integration of accurate acoustic models with the VR environment was considered to be an important enhancement of the concept of the virtual field trip, which would allow for a wider range of discussion and educational experience, while improving the sense of realism of the space.

BLENDED LEARNING—A WHOLE FACULTY APPROACH

Karin Thiele Watson, University UNSW Sydney, Australia

Prior to 2002, a lack of institutional strategy was regarded as one of the main barriers to the implementation and embedding of eLearning in tertiary institutions (Smith, 2002). Since then, many institutions have included eLearning into their Learning and Teaching Strategies; however, most address the introduction and/or implementation of eLearning but fail to address how these might become embedded in institutional practice (DfES, 2003; Stiles, 2003) in order to remain sustainable and scalable. The successful embedding of eLearning in institutions is often impeded by the failure to effectively introduce culture change or

to address change management. Critical issues such as 'one off' staff development training, irregular consolidation of progress, little or no evaluation, and lack of follow through serve as further obstructions (Stiles, 2004). If all aspects of faculty operations do not evolve considering this, then it becomes difficult to effectively scale and embed blended learning (BL) across the faculty in a consistent and sustainable manner. This project addresses these issues by developing a holistic Blended Learning Strategy for faculty at UNSW Sydney Art & Design that, when consistently applied, fundamentally changes the practice of teaching by informing all operational areas including executive, administration, teaching and resources. The recommendations and strategies include guidelines and templates for:

- how to manage time and location of learning differently;
- expectations of staff and students;
- how to teach and learn at UNSW A&D;
- cultural change and uptake of BL;
- professional development;
- administrative, timetable and IT logistics;
- integration with other current institution and faculty projects and initiatives.

The masterplan serves as an impetus for widespread culture change across all areas to facilitate the uptake of digital pedagogies to be effective, efficient, scalable and sustainable.

Workshop Abstracts

DESIGN A LEARNING ADVENTURE

Facilitator: Henrik Krantz, Johan Borvén and Fredrik Åkerlind, Göteborgsregionen, Sweden

Workshop objectives: To explore and collaborate how teaching and learning activities can be designed by using storytelling and interaction to create motivation for a given subject. The main object here is to explore and share knowledge about how to plan, design and create an interactive learning adventure with the use of digital devices.

- What are key motivators for creating an interactive story where learning is in the center whilst letting students explore?
- How can teachers and students collaborate when creating digital learning material?

Methods: The participants will be working in small groups and will be given a specific topic they will use for creating an interactive learning activity. The software from Göteborgsregionen will be the activity and the participants' objective is to create a short motivating adventure by choosing your own adventure-style. All groups will then present their work digitally and also do a short evaluation based on their findings and discussions during the workshop. The workshop is based on collaboration among the participants and on how interdisciplinary work can be combined when designing learning activities with the use of digital tools.

Outline: Göteborgsregionen (GR) has during the last year been working on creating a digital tool for students to motivate writing, reading and creating with the use of digital devices, interac-

tivity and storytelling. The tool is software based on interactive fiction, where students can create their own text-based adventure games to share and play. With an emphasis on creativity to stimulate students' motivation, the tool focuses on raising curiosity and problem solving when creating different types of text as well as on developing digital competence.

During this work we started to see that this tool could be used by teachers to create adventures, where students can investigate and explore any given subject, and so in an easy way creating gamified learning activities. This also showed that students could use this software to present and share their own knowledge in different subjects, as well as work collaboratively with other students.

The main target when working with this software has been students in ages 7 – 16, and teachers in that area, which opens up questions about higher levels of education and how to create engaging learning activities for students using elements from games and storytelling.

Equipment: The participants will need a digital device such as a laptop or tablet.

COLLABORATIVE ONLINE INTERNATIONAL LEARNING (COIL)—INTERNATIONALIZING UNIVERSITY CURRICULUM

Facilitators: Dr. Purba Das & Dr. Sheida Shirvani, Ohio University, U.S.A.

Workshop Goals:

- Disseminate the knowledge and skills required to start a COIL class
- Offer an understanding of an im-

practical no-cost method that engages different educational institutions to learn about cultural competency, connect students and teachers across the globe through technology.

Learning Objectives: Participants will:

- Learn innovative pedagogy and practice of COIL course design.
- Understand COIL as an online learning platform in globalizing education.
- Learn three instructional technologies to use in COIL courses.
- Describe and demonstrate the proper procedures for developing a COIL course.

Methods: The workshop will be divided into eight topics, including the introduction of software and hands-on experience:

- History of OU COIL
- Cultural Competency
- Use of technology
- Introduction to Flat map and Trello, with handout and sample
- Introduction to Voicethread (Vt) with handout and hands-on practice
- Introduction to Google Classroom with handout and hands-on practice
- Use of a rubric in COIL
- Q&A

Outline: The COIL initiative, started at SUNY New York, aims to expand higher education ties between two countries and generate partnerships by collaboration. Using widely available technology, students and faculty in the two countries (or multiple in some cases) work together for shared teaching and learning. In this method, students in both sites are engaged in common activities. This virtual exchange is a cost-effective and accessible method of expanding glob-

al learning opportunities for students. Through the COIL method, our goal is to provide the students with the complexities of globalization and encourage them to learn intercultural competencies, including cultural self-awareness. COIL has potential and scope as development of COIL activities is a significant component in an institution's comprehensive internationalization plan. The regional campuses of Ohio University adopted this innovative collaborative online teaching technique in 2016 and became a successful program through the engagement of professors and students from China, Honduras, Mexico, Germany and Colombia.

Example of a module

Module 1. Fostering Cultural Sensitivity and Dealing with Cultural Differences
Instructor: Dr. Purba Das

Materials provided: Questionnaire to discuss with your potential COIL partner
What potential cultural sensitivity issues do you expect to encounter during the:

- a. Initial contact with your partner.*
- b. Questionnaire to discuss with your potential COIL partner.*
- c. Student interaction between two different cultures*

What protocol would you establish?

- d. Technology as a driver/tool*
- e. Netiquette rules/rules of engagement*

Module 2. Instructional Technology, Voice Thread: VT is an interactive multimedia and slide show tool, which allows users to hold conversations based on images, documents, or videos.
Instructor: Dr. Sheida Shirvani

Materials Provided: Handout of instruction to create Voice Thread to collaborate with COIL partners and students.

- Voice Thread is relevant in COIL classes and cost effective. It can be

used in any learning environment from individual projects to group projects. It allows students collaborate in many ways in their own speed.

- Voice thread promotes learning engagement and success for students.
- Voice thread is a motivational tool and enhances the quality of learning.

The benefit of Voice Thread

- Passive learners become active learners
- Promote collaboration development of knowledge and opinion and participants express their view
- it is a meaningful and fun learning tool
- It is simple and easy to use.

How to implement Voice Thread in your COIL Course

- Discussing cultural differences.
- Writing a book report.
- Use as an assessment tool.
- Use to give feedback to students.
- Use to share storytelling.

CONDUCTING PROGRAM REVIEW USING A LEARNING ANALYTICS

Facilitator: *Dr. Christine Armatas, Associate Director Educational Development, The Hong Kong Polytechnic University, Hong Kong*

Workshop Goals: The aim of this workshop is to introduce participants to how learning analytics can be applied to program review and the benefits of this approach for informing program evaluation and enhancement. We aim to share with participants a free, custom-made tool (the Program Review Tool) designed using Excel which they can use to conduct program reviews using their own student data following

the method explained and practiced in the workshop.

Learning Objectives: At the end of this workshop, participants will be able to:

- Describe the benefits of applying learning analytics to program review.
- Explain the relationships between types of review questions and analyses that can address them.
- Conduct a program review using the Program Review Tool (a free Excel-based tool).
- Review and formulate a plan for improvement based on program review results.

Methods: During this workshop, participants will engage in small and large group discussion and complete practical activities using an Excel-based program review tool which will be provided for participants free of charge. Users will practice conducting program review, using the tool to analyse academic data provided to them. They will also interpret the results to inform program improvement. After the workshop, participants will be able to take a copy of the tool with them for use at their home institution.

Outline: Participants will identify the benefits of using learning analytics (LA) for program review by analyzing data from a large, cross-institutional project. LA research has focused on academic success and retention (Siemens, Dawson & Lynch, 2014), predicting student grades and identifying students at risk (Gašević, Dawson, Rogers & Gasevic, 2016). But little research has examined LA for program review (Viberg, Hatakka, Balter & Mavroudi, 2018). The approach used in this workshop addresses this gap. The LA program review methodology will be explained and a brief description provided of the project currently being con-

ducted at The Hong Kong Polytechnic University. Participants will use a free tool to conduct a program review using real program data and then use the findings to make recommendations about program improvement. At the end of the workshop, interested participants can use this free tool to conduct program reviews themselves using the methodology practiced in the workshop.

References

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Siemens, G., Dawson, S. & Lynch, G. (2014). Improving the quality and productivity of the higher education sector – Policy and strategy for system-level deployment of learning analytics. Canberra, Australia: Office of Learning and Teaching, Australian Government. Retrieved from http://www.olt.gov.au/system/files/resources/SoLAR_Report_2014.pdf

Viberg, O., Hatakka, M., Bälter, O., & Mavroudi, A. (2018). The current landscape of learning analytics in higher education. *Computers in Human Behavior*, 89, 98-110. doi:10.1016/j.chb.2018.07.027

Required equipment: Participants should bring their own laptop running Windows 8 or above with a recent version of Microsoft Excel installed.

AN ENGAGING CLASSROOM:
ANATOMY WITH 3D PRINTED
MODELS

Facilitators: Mr. Nicholas Tripodi, First Year College and Institute of Health and Sport, Victoria University, & Dr.

Maja Husaric, First Year College,
Victoria University

Workshop Goals

- To introduce the concept of block-model teaching in higher education
- To demonstrate high-engagement learning activities using 3D printed anatomical models
- To present the impact of 3D printed anatomical models on student engagement both in and outside the classroom.

Methods: This will be a 3-part workshop:

Part 1: An introduction of Victoria University's innovative first-year block design and a discussion of how the 3D printed models fit into this curriculum.

Part 2: Interactive activities with the 3D anatomy models—do what the students do! This will be a facilitator-led, collaborative activity where you will get the opportunity to experience a real classroom environment.

Part 3: Discussion of our research project findings on student engagement both in and outside the classroom setting

Outline:

First-year university students face a steep learning curve in developing their anatomy knowledge. The challenge is not only in content breadth, but also with the kinaesthetic aspects of anatomy. Students often report being overwhelmed with content and under-prepared for assessments. Limited access to laboratory space and specimens is cited as one of the main reasons why students feel this way. With the introduction of block-model teaching at our institution, there was an opportunity to address this problem by implementing novel anatomy teaching and learning

activities. A team of academics commissioned the production of 3D-printed skeleton bonesets. The models were used as a base to design the specific in-class learning activities upon. These activities have increased student engagement, both inside and outside the classroom. Further, they have promoted active learning and increased practical examination confidence thus, resulting in an enhanced learning experience for students.

LIFELONG LEARNING AND ICT BLENDING THE MOVEMENTS

Facilitators: *Dr Linda Morris, Adult Development Associates, United States of America & Dr Marcie Boucouvalas, Professor Emerita, Virginia Tech, United States of America*

Learning Objectives: Participants who successfully complete this workshop will be able to:

- Increase awareness and gain a more comprehensive understanding of each movement.
- Explore the synergistic nature of the two: past, present and future
- Begin developing a professional framework that encompasses both movements and framework
- Identify questions for future exploration.

Methods: Brief beginning lecturette with audience participation to develop a common context; small group interaction; facilitated discussion and dialogue; handout with resources for further inquiry.

Outline: As a follow-up to previous discussions at ICICTE that focused on the juncture of Information communication technologies (ICT) and lifelong learning, we aim to create an environment to take the dialogue further and deeper in this workshop.

Lifelong learning may be understood in its programmatic sense, as well as a process and movement. Similarly, ICT may be viewed as a set of tools, methodologies, and a technological movement that is sweeping the globe. Workshop participants will concentrate on both phenomena as movements in society at large. We will explore how they are inextricably intertwined and how this interface is creating new ways of thinking about learning over the lifespan. As professionals we have opportunities to set directions. What possibilities do we see? What are potential pitfalls? How will we shape our roles?

Agenda

- The movements—an overview
- Past, present and future synergy
- Professional framework that encompasses both movements and framework
- Questions for future exploration

PERSONAL AND PROFESSIONAL LEARNING NETWORKS FOR EDUCATORS

Facilitator: *Ariane Skapetis, NSW Department of Education, Australia*

Learning Objectives: Upon successful completion of this workshop, participants will be able to:

- Identify the best online tools and social media platforms to connect, collaborate and learn with other like-minded educators both synchronously and asynchronously.
- Identify and share best practices around social networking sites used by educators and by learning the necessary skills, tricks and tips.

Methods: This workshop will incorporate elements of direct instruction, discussion and elements of collaboration and interactivity.

Outline: Personal and Professional Learning networks is a term widely used to describe most connected educators and the online connections they have created over time with other like-minded educators. Academics and teachers are continuously leveraging these connections to broaden their knowledge skill sets, to enhance pedagogies and keep up to date with the best global research and resources.

There are numerous educators worldwide who are freely sharing resources and best practice in both open and closed communities using social media platforms to harness the best educational practice and research beyond their own settings. Educators can pick and choose what social media platforms work best for them and how they would go about connecting with other experts in their field.

Students in schools and universities are also exploring the power of personal and professional Learning networks and by doing so are setting themselves up for success in their current studies and future careers.

Participants will have the opportunity in this workshop to explore a variety of social media platform tools for personal growth, learning and connecting with peers in an interactive way. There will be opportunities for best practice strategies, tips and tricks of using social media platforms for also engaging students in their learning way beyond their classroom experiences.

This workshop is ideally suited for the novice to the most experienced user of personal and professional learning networks.

References

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Whittaker, T. Zoul, J. & Casas, J. (2015). *What connected educators do differently*. New York: Routledge.

Yoon, S. & Baker-Doyle, K. (2018). *Networked by design, interventions for teachers to develop social capital*. New York: Routledge.

ACTIVE LEARNING AND PERSONALISED FEEDBACK: FORMATIVE ASSESSMENT AND FEEDBACK PRACTICES IN THE CLASSROOM AND ONLINE

Facilitator: *Dr Timos Almpanis, SFHEA, Kingston University, London, United Kingdom*

Workshop Goals:

- To consider principles of good practice in formative assessment and feedback in the classroom and in online environments. To share ideas for sustainable and effective feedback approaches. To explore the use of online tools for personalised feedback.
- Learning Objectives: Participants who successfully complete the workshop will be able to:
- Design engaging formative assessment tasks for individual and collaborative learning.
- Discuss effective feedback ap-

proaches based on principles of good practice.

- Identify ways to utilise freely available online tools such as Mentimeter for online voting/peer instruction, Vocaroo for audio feedback and Screencastify for video feedback.

Methods: This workshop will include brainstorming using post-it notes, online voting tools, peer instruction techniques, group discussions and group tasks. Free online tools for audio feedback will also be explored.

Outline: Student-centred teaching approaches have gained a lot of attention and have been promoted for effective teaching at university level for a long time (Biggs, 1999). Active learning approaches align with constructivist pedagogies (Ertmer & Newby, 1993) that see learners as active seekers of knowledge in their attempt to create meaning; lecturers become the facilitators of the learning process using problem solving and collaborative learning.

To facilitate active learning effectively, lecturers need to devise formative assessment tasks that are conducive to individual, peer and collaborative learning, knowing when to intervene providing feedback on the learning process. As technology and internet access have become ubiquitous and pervasive, lecturers have a plethora of tools at their disposal both in the classroom and beyond, utilising an online learning environment. These tools, when used in a pedagogically effective way, can transform the student learning experience (Almpanis, 2015).

This workshop will consider principles of good practice in formative assessment and feedback modelling active learning techniques, utilising free online tools alongside pen and paper activities for setting up formative tasks in the class-

room. In the second part of the workshop, ideas for effective feedback will be shared and easy-to-use, free online tools for personalised feedback will be explored.

References

Almpanis, T. (2015). Staff development and institutional support for technology enhanced learning in UK universities. *Electronic Journal of E-Learning*, 13(5), 379-388. Retrieved from: <http://www.ejel.org/volume13/issue5/p379>

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Ertmer, P. A. & Newby, T. J. (1993). Behaviorism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. *Performance Improvement Quarterly*, 6(4), 50-72. Retrieved from: <https://doi.org/10.1111/j.1937-8327.1993.tb00605.x>

THE USE OF VIRTUAL, EXTENDED AND MIXED REALITY IN EDUCATION AND TRAINING: OPPORTUNITIES AND CHALLENGES

Facilitators: *Chris Barlow, Solent University, Southampton, UK, & Gordon Meadow, Seabot XR, Winchester, UK*

Outline: Recent developments in computing power, capabilities of mobile devices and new products arriving on the market at achievable prices have meant that Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) devices are now within affordable reach of many educational institutions. The most established areas of education and training using XR have tended to fall into a number of discrete user cases:

- **Technical training** is aimed at operators, allowing them to develop both high and low level skills based around both decision making/problem solving in realistic scenarios, and also to develop automatic responses and motor control for technically demanding tasks such as military, medical and other high risk situations.
- **Social and peer interaction** allows to engage with each other remotely in a virtual world, using this space for discussion, presentation and critique of audio-visual material and undertaking social or group-based tasks (Barros et al, 2008).
- **Experiential Learning:** The Virtual Field Trip. Field trips have long been a part of education - being able to visit and experience places relevant to the course of study. The Virtual environment allows the student to situations or locations which would be inaccessible due to reasons of practicality, safety, time, finance or which no longer exist.
- **3 Dimensional design:** The design community was rapid to adopt VR for both education and actual design purposes.

Workshop Goals

- To allow participants to experience different types and applications of VR and AR tools for education.
- To discuss the potential for applying

these to different educational scenarios relevant to the participants.

- To identify challenges in the use of XR technology in education and discuss potential solutions, particularly in assessment.

Methods

- This workshop will explore some practical applications of XR for different elements of education and training, particularly focusing on low-mid cost Virtual and Augmented Reality applications and systems. Using Google Cardboard VR headsets, we will explore some examples in the use of VR in the current market, and discuss the potential applications within our own pedagogy. We will also demonstrate some of the medium and high cost alternatives, such as Oculus Rift and the benefits and limitations of these.
- Participants will then discuss the practicalities of combining assessment for learning with the experiential nature of XR and how this might be measured and implemented practically, with the aim of developing some recommendations for how it might be best used in different situations and types of learning.
- Equipment needed: In order to use the Google Cardboard goggles, participants will ideally need to bring a reasonably up to date Android phone or iPhone.



Post Conference Activity

Sunday July 7th

Excursion to Elafonisi Beach and Palaiochora



Elafonisi Beach

Cost: € 28

Deadline to Register: Friday - 5th July, before lunch

(Please Note: We have a 30 seat maximum and the trip may fill up before then.)

Join your ICICTE colleagues after the conference as we travel to the world famous Elafonisi Beach and the town of Palaiochora, both on the southwestern coast of Crete.

This memorable trip will first bring us to the renowned pink sandy beaches

and turquoise colored waters of Elafonisi Beach, named one of the best 25 beaches in the world by Trip Advisor in 2014. While there, you can walk out to the neighboring Elafonisi Island, which is separated from Crete by very shallow water or, if the tide is low enough, no water at all. This nearly mile long island is a protected nature reserve where you can get lost in its coves and admire the plethora of various vegetations that inhabit the island. If you are able to walk to the far end of the island you will even discover a cave as well as a small church. Some have called Elafonisi "magical," and you will want to experience that magic for yourself.

Fun Fact:

Elafonisi's name derives from the Greek word for deer ("elafi") when it was discovered that one could walk to the island, just like a deer could.

Historical Fact:

During the Greek War of Independence in 1824 on Easter Sunday, several hundred Greeks were killed by advancing Turkish troops as the Greeks were awaiting a ship transport to the Ionian Islands. They were discovered by Turkish soldiers camping out on Crete, directly across from Elafonisi island, after one of Turkish soldiers' horses walked through the shallow water to the island. Today, there is a plaque there commemorating this incident.

After swimming and working up an appetite, our second stop will be the town of Palaiochora (which means "old village" in Greek) for a bite to eat. After lunch, there will be time to shop and just explore the area.

Some of the notable things that attract

visitors to this renowned town on a peninsula include: its beaches, picturesque hikes, abundant wild floral life, churches with ancient iconography, and the ruins of a castle ("Selino Kasteli") that was originally built in the late 13th century.

You won't want to miss this unforgettable trip!

Schedule:

10 AM - Depart Minoa Palace Hotel

** Pickup from other hotels can be arranged

11 AM – Arrive Elafonisi Beach

13:30 – Depart Elafonisi

14:00 – Arrive Palaiochora for lunch, followed by free time to explore, shop, etc.

17:00 – Depart Palaiochora

18:30 – Arrive Minoa Palace Hotel

Palaiochora



ICICTE 2019 Keynote Speakers



Professor John-Peter Portelli

Professor John-Peter Portelli will be the keynote speaker on the first day of the conference.

Originally from Malta, he is a professor in the Department of Social Justice Education and co-director of the Centre for Leadership and Diversity, OISE, University of Toronto, Canada. Professor Portelli is a senior policy advisor for the Ministry for Education and Employment, Malta.

He has published 17 books (including works of literature: 4 collections of poetry, a collection of short stories and a novel). His most recent book is *Confronting Educational Policy in Neoliberal Times* (with Stephanie Chitpin, Routledge, 2019).

He has led research studies in Canada and Malta. His areas of research include: student engagement and students 'at risk'; equity, diversity, social justice, and educational policy and leadership.

Professor Portelli is also the chairman of the Commonwealth Centre for Connected Learning (CCCL), which is part sponsoring ICICTE 2019.

Professor Portelli will speak about **Connected Learning and Social Justice Education in Neoliberal Times: Challenges and Possibilities**. Building on research in Canada and Malta, this speech will identify the challenges that educators who promote and actualize Connected Learning from a Social Justice Education perspective face.



Dr Alex Grech

Dr Alex Grech, from the Faculty of Media and Knowledge Sciences, University of Malta, who is also the director of the Centre for Connected Learning, and one of the leading experts on Blockchain in Education will be the second keynote speaker in ICICTE 2019.

Dr Grech has 30 years' experience in business strategy and change management. He has held senior management positions in the European HQs of IPSA Reuters and Hitachi Data Systems.

He was an advisor in the Office of the Prime Minister of Malta; and Director Strategic Business Development of GO during the successful IPO on the LSE. He is the founding Chairman of *Heritage Malta* and founding editor of "Technology Sunday", the technology supplement for the *Times of Malta*.

Dr Grech is currently the Maltese national expert on EU working groups on ICT in education and the future of higher education, and a senior advisor to the Ministry of Education on digital pedagogies and online learning.

He has a PhD in Internet Computing from the University of Hull, and his research interests are in digital citizenship, social media and power. He lectures in internet communications at the University of Malta and an Honorary Research Fellow at the University of Hull.

Dr Grech will be talking about **The Blockchain and Education: Exploring Opportunities and Debunking Myths**

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