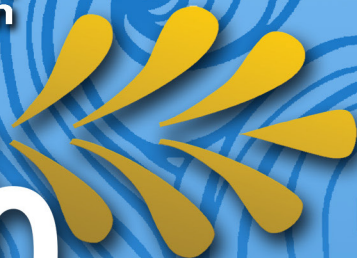


**International Conference on  
Information Communication  
Technologies in Education**

**ICICTE  
2020**



**2-3 July,  
On and from Samos, Greece**



# ICICTE 2020 Programme

## Day 1: Thursday July 2, 2020

### Join Zoom Meeting:

<https://ucd-ie.zoom.us/j/7236732684?pwd=N3BRNk9jVWx4ZDYxNIJzZitmZXAzdz09>

**Meeting ID:** 723 673 2684 – **Password:** BASE

Time GMT+03

### Sessions

**09:30 – 10:00**

### Welcome and Opening Remarks

**10:00 – 11:30**

### Online learning: Educational Dystopia or EdTech Utopia?

[Assoc. Prof. Eleni Mangina, University College Dublin, Ireland](#)

The introduction of information and communication technologies (ICT) in the teaching and learning process has profoundly altered the face of education over the course of the last few decades, from the use of web-supplemented courses, to web-dependent courses, mixed mode courses and fully online courses. The last six months, though, education has experienced a forced shift to online teaching and learning due to social distancing. Prof. Mangina will discuss, based on her own experiences as an academic and a mother of three, what has changed and what EdTech researchers can do to help right now and in the foreseeable future. Prof. Mangina is an advocate of Open Education and the utilisation of emerging technologies. Technology has presented educators everywhere with new opportunities to impart knowledge and help students to learn. In the last couple of decades alone, it has enabled teachers to make huge strides in the classroom. Augmented reality has become one of the biggest drivers in the tech economy, but until recently, it didn't get much of a look-in within the education system. This is something that Professor Eleni Mangina is trying to change. She is a professor in UCD School of Computer Science and recently secured €3.9 million for a project that aims to bring augmented reality learning content to students across Europe.

The project is called ARETE (Augmented Reality Interactive Educational System) and is funded by the European Commission's Horizon 2020 framework programme. It follows on from Professor Mangina's previous project, AHA (ADHD Augmented) which focused on augmented reality educational tools for children aged 9-11 with a diagnosis of ADHD. Now, ARETE will build on the work completed in that project and will design and pilot augmented reality educational tools for classrooms in countries across Europe. The new project will focus on improving literacy, STEM subjects and behaviour in the classroom. During the talk, the seven principles of UX/UI design will be presented to remind EdTech developers of the importance and impact that interface design has towards the development of Educational Software.

**11:30 – 12:00**

*Coffee Break*

**12:00 – 13:30**

**Workshop 1**

**BASE: Online Behavioural Hackathon Day**

*Facilitator: Assoc. Prof. Eleni Mangina, University College Dublin, Ireland*

*About*

BASE: "Behavioral Assessment to improve School Environment" project introduces the Positive Behavior Support (PBS), an innovative system to manage the scholastic environment, especially in face of individuals' challenging behaviours.

Starting from school leaders and teachers and expanding to all actors of the community involved in the learning processes, BASE offers a preventive, proactive and multi-level approach, able to mobilise the entire educational ecosystem, to set up effective solutions.

Whether you are a programmer or a teacher, join us at our UX Design Hackathon in order to learn more about BASE and participate in our exercise

X Design for BASE application dashboard

During our Hackathon you will be introduced to the Seven principles of Universal Design.

Together we will work on an exercise to improve the user experience of

the BASE application. In particular, you will have to design a dashboard allowing users to easily access the features actually provided by the application menu. In particular, the dashboard should provide users with the following:

- 1) Information about the school students. A user can visualize for all the students, a classroom, or a student;
- 2) An easy access to the school tools: expectation matrix, minor and major behaviors, rewards menu, access data generation, list of students; and
- 3) An easy access to the features organized according to the 3 tiers defined by the Positive Behavior Intervention Support approach.

**13:30 – 15:30**

**Lunch Break**

15:30 – 17:30

**Plenary Session**

*15' each paper – 45' Discussion*

**Session 1**

*Moderator: Dr Ġorġ Mallia, Head of the Media and Communications Department, Faculty of Media and Knowledge Sciences, University of Malta, Malta*

## **TAKING THE PULSE OF THE PULS PROJECT: FROM OBEDIENT USERS TO INNOVATIVE AND EMPOWERED MAKERS**

*Maria Spante, University West, and Christer Ferm, Ferm Utveckling, Sweden*

*Abstract*

This study reports on a municipal initiative called PULS, due to its use of wearable heart rate monitors in a Swedish school seeking to increase physical activity among students to enhance learning, in a pilot study with 58 seventh grade students. Wearable heart rate monitors were bought and arrangements were made for two times 30 minutes each week of monitored activity. However, student data was not used for learning, thus interpreted as a sign of uncritical thinking and unreflective practice when incorporating digital technology in school. Critical discussion and further development became essential to steer the situation towards student empowerment and learning.

## **DIGITALIZATION AND SCHOOL LEADERSHIP THOROUGH THE LENS OF ECOLOGY OF RESOURCES MODEL**

Marcia Håkansson Lindqvist, and Fanny Pettersson, Umeå University, Sweden

### *Abstract*

For increased digitalization in school, the importance of school leadership has been emphasized in international research. This paper focuses on how school leaders understand the activity of leading digitalization in school. In doing so, the Ecology of Resources Model was used as a theoretical framework. This theoretical model is based on learning and development as an interaction between the individual, in this case the school leader, and the sociocultural environment conceptualized as including three specific resource elements: (1) Environment, (2) Knowledge and Skills, and (3) Tools and People. The framework provides a theoretical tool for exploring school leaders' activities and the support of these resource elements in school. The study is based on a survey based on open questions and interviews conducted with nine school leaders. The results show that school leaders lead for digitalization through many different activities. It can be concluded that the role of the school leader is important for supporting teachers' work with digitalization for teaching and learning, and in turn supporting students' learning with digital technologies. How school leaders lead for digitalization will most likely have an impact on school development.

## **STRUGGLING WITH LEADING DIGITALIZATION THROUGH THE CHAIN OF COMMAND: DIVERSE EXPERIENCES AMONG SCHOOL AND PRESCHOOL PRINCIPALS IN A SWEDISH MUNICIPALITY**

Maria Spante, University West, Sweden

### *Abstract*

A municipality in Sweden took the initiative to enhance the competence for all principals to lead digitalization in schools. The initiative was implemented during 2018 and 2019. Participant observations and surveys were used. The result showed a gap in the chain of command, as well as different attitudes towards the course between school and preschool principals. The attitudes were more mixed among the school principals than preschool principals. The preschool principals were mainly positive about the initiative. Leading digitalization through chain of command

should be done as a process, not a project, enabling integration of multilevel organizational aspects.

## **THE ANTECEDENTS OF STUDENTS STUDYING AN INFORMATION TECHNOLOGY QUALIFICATION AT A HIGHER EDUCATION INSTITUTION IN SOUTH AFRICA**

Glenda Barlow-Jones, University of Johannesburg , South Africa

### *Abstract*

School leavers today have greater access to technology than ever before. Thus the assumption is that first year university students studying an information technology qualification are digitally literate, and do not require training in basic computer skills and concepts. Digital literacy, however, is more than just having access to technology, as it also requires having a knowledge and understanding of technology as well as being able to use technology. This paper reports on how digitally literate students studying a Diploma in Business Information Technology at a university in Johannesburg, South Africa, really are before embarking on their studies.

## **DIFFERING PERSPECTIVES OF STUDENT EXPECTATIONS AT HEI'S: A SOUTH AFRICA AND UK NARRATIVE**

Glenda Barlow-Jones, University of Johannesburg , South Africa, and Jacqui Chetty, University of Kent, United Kingdom

### *Abstract*

Research directed at students' expectations when entering a higher education institution (HEI) is becoming more widely investigated, as there is a direct link between expectations and retention. This paper provides insights into expectations of students within a South African context as well as a UK context, to determine whether students' expectations across institutions align or differ. It is hoped that such collaboration between institutions stimulates constructive dialogue in relation to the gap between students' expectations across two continents; as well as knowledge sharing on how unmet student expectations can reasonably be met in the future.

**17:30 – 18:00**

**Coffee Break**

**18:00 – 19:30**

**Workshop 2**

**The Rise of ICTs as Societal “First Responders” and Continuing Responders in a COVID and Post COVID Reality: Reflecting on the Present and Preparing for the Future**

*Facilitator:* Marcie Boucouvalas

*Objectives:*

Given the unique, yet unfortunate, experience that the whole planet has shared, the purpose of the workshop is to create and hold a Forum:

First, to catalyze a deeper understanding of how ICTs threw a life preserver to society at a very crucial time and became, for the most part, a positive empowering enabler. Provide a brief foundational understanding about sociological “institutions” (i.e., education, religion, work, etc.) as forming a large-scale stable social arrangement created to serve the needs of society, and how ICTs played a critical role in maintaining the functioning of society-at-large. What might this experience mean for the future? For the potential transformations of social structures? For the future of ICT professionals? For the field?

Provide an environment to reflect upon opportunities and challenges experienced by participants in various sectors and countries during COVID-19 regarding the critical role played by ICTs, including successes, challenges, lessons learned, etc.

*Generate potential preparations for the future:*

Contributions from all participants are encouraged. Contribution from facilitator regarding the future: Consider skills such as Cultural Intelligence (CI), which calls upon a greater sense of “Self” to complement cognitive and emotional intelligence (Information on testing one’s CI as well as research and reading resources will be provided).

*Method(s):*

- Brief beginning lecturette to lay a common foundation;
- Techniques for getting to know fellow session participants (whether in person or virtual);



- Media demonstrations such as playing video about a professor forced to quickly transition to virtual world and his serenade and adaptation of the song lyrics “I Will Survive” that went viral (song was first performed by American singer Gloria Gaynor in 1978 and written by Freddie Perren and Dino Fekaris): <https://youtu.be/CCe5PaeAeew> Discussion and dialogue;
- Small group explorations and exercises.

### *Narrative/Outline:*

During COVID-19, front line essential workers and “first responders” tended to immediate needs in delivering services and goods both to the afflicted as well as for the basic sustenance needs of the public. Simultaneously, however, ICTs arose equally as a different kind of “first responder” in throwing a life preserver to the functioning of society-at-large at a critical time, the effects of which may ultimately result in the transformation of societal structures.

As schools and universities folded their physical doors, educators and learners alike had to pack up, go home, and adapt quickly to a restructured learning process and product. ICT was on the vanguard and in waiting. While some may have had exposure or even expertise in learning from a distance, many more (including some educators and many parents) were dropped into, actually absorbed into, a virtual world with steep learning curves, clearly not the same as well designed and organized on line learning. Moreover, not just classes and learning but graduations as well went virtual.

As workplaces began shuttering their buildings, even those that had previously insisted upon workers being physically present were faced with maintaining their businesses; and they turned to ICT. Even the media and newscasters began broadcasting from home. In addition, religious institutions offered virtual services, an advance that was particularly unprecedented during the high holy days of April, whether Easter, Passover, or Ramadan. Moreover, as in person appointments with health care providers for physical or mental health reasons became more problematic, tele-medicine necessitated creating a new workplace and mode for physical, social, and mental health providers.

Many were forced to quickly transition to a virtual world. Some survived: Note the adaptation of the song's lyrics “I Will Survive” by Dr. Michael Bruening, an associate professor of history and political science at Missouri University of Science and Technology, whose serenade to professors went viral, and which will be briefly played for participants. Creative

responses flourished, especially in addressing the digital divide that the pandemic sharpened. For example, school buses were turned into hot spots of connectivity. Rather than sit idle they were re-purposed strategically throughout locales, which people could access even on foot. What can we learn from these adaptations and adjustments?

Then there is the darker side. Unfortunately, despite donations of computers and mobile devices, et al., some could not sustain the household chaos and pandemonium that often ensued, both economically and socially. Jobs were lost and bills were mounting. Domestic violence and even child abuse arose. Clearly, the ramifications of the COVID-19 pandemic continues to create economical and societal crises permeating every sector of society. Understanding and exploring ICTs as continuing “first responders” in preparing for the future in a post COVID reality is pivotal.

As an open forum, participants are invited to share their current experiences, insights, as well as perspectives on potential future scenarios. At my (the facilitator's) own university, as preparations and discussion are taking place regarding the opening of the University in the fall, a communication was sent by the administration asking a question that would have been unthinkable several months prior for this research-driven university where faculty members' in person face-to-face presence on campus for office hours, meetings, classes, dissertation defenses, etc. was mandatory. The question: “Please respond within a month as to whether you would like to give up your physical office at the universities and work permanently from a home office as we could always repurpose the space.” Of course, in-person meetings and activities would still be required, but the campus office would no longer be needed. The traditional office would be housed in another building: one's place of residence—of course that is assuming tht everyone had space and access for such a feat.

What additional skills, knowledge, attitudes might be important for the ICT professions to consider? The forum is designed to provide an environment for many voices to be heard. COVID-19 offered us a common experience that all of humanity shared. Albeit very tragic, it demonstrated our interconnectedness as a human species. What role might ICTs play in fostering such an identity in a more positive manner? Just as a springboard, the facilitator will offer one: In tune with developing a greater sense of Self, attention to the understanding and development of “cultural intelligence” to complement a more individually oriented cognitive and emotional intelligence.

*Contributors:*

- [Dr Alex Grech](#), Director, Commonwealth Centre for Connected Learning, Valletta, Malta
- [Dr Ġorġ Mallia](#), University of Malta
- [Nancy Pyrini](#), Director, ICICTE
- [Dr Maria Spante](#), University West, Sweden
- [Dr Maria Eugenia Witzler D'Esposito](#), Faculdade Cultura Inglesa, Brazil
- [Kathy Michael J.P.](#), Victoria University, Australia
- [Dr Zuhaira Najjar](#), The Arab Academic College for Education in Israel, Israel
- [Evangeline Marlos Varonis](#), Hiram College, United States of America

## Day 2: Friday July 3, 2020

### Join Zoom Meeting

<https://ucd-ie.zoom.us/j/7236732684?pwd=aWhiUStJQWFzZno2T2VCV0Y3VmXqZz09>

**Meeting ID:** 723 673 2684 – **Password:** icicte2020

Time GMT+03

### Sessions

**10:00 – 11:30**

*15' each paper – 30' Discussion*

### Session 2

*Moderator:* [Anastasia Pyrini](#), University College Dublin, Ireland

### STUDENTS' PERCEPTIONS OF CONSTRUCTIONIST ASSESSMENT

[Kimera Moodley](#), University of Pretoria, South Africa

#### *Abstract*

With the growing demand for 21st century skills, dynamic teaching methods and accessible, flexible learning opportunities, in both industry and academia, a constructionist approach to assessment was undertaken. Assessment was conducted on twenty nine students enrolled for a Computers and e-Learning course. Qualitative data was collected in the form of a survey. The findings of this study indicate a multitude of emotions,

personal growth, technical identity development and learner agency. Constructionist assessment through designing and social interactions improves metacognition and students start to reflect and see the value in their experiences with different technological tools.

## **USE OF ICT IN HIGHER EDUCATION INSTRUCTION: THE CASE OF THE UNIVERSITY OF LJUBLJANA**

Manica Danko, Mitja Dečman, Damijana Keržič, and Vida Zorko,  
University of Ljubljana, Slovenia

### *Abstract*

Slovenian higher education institutions are increasingly relying on information communications technologies (ICT) in the belief that technology may improve teaching and learning. This study attempts to map the current state of instructional ICT use at the University of Ljubljana (UL). Quantitative analysis of data obtained from a survey of 428 teachers at the UL was conducted to examine the type, frequency and purpose of ICT use. The results show the teachers have adopted several ICT tools and use them not only to substitute for the traditional ones but, to some extent, also to enhance their practices aimed at promoting higher-order thinking.

## **TEACHING ENVIRONMENTAL SCIENCE AND MATHEMATICS. USE TECHNOLOGICAL INSTRUCTIONAL MATERIAL BY TRAINEE TEACHERS, IN LESSON PLANS**

Konstantinos Karampelas, Michael Skoumios, and Maria Chionidou-Moskofoglou, University of the Aegean, Greece

### *Abstract*

This paper investigates what types of technological material that trainee teachers select to use in the sessions they carry out in their training. Limited seems to be the research around that topic. The sample came from lesson plans of trainee elementary school teachers from a University in Greece on the subjects of Environmental Science and Mathematics. The selection of types is relevant to the equipment available in the classrooms, the use on behalf of teachers, the attitudes towards in each subject and the general school context. The findings therefore give significant insights in these topics.

## **TEACHING TEACHERS WITHOUT TEACHING: CONSTRUCTIONISM AT WORK IN AN e-LEARNING MODULE**

Mari van Wyk, University of Pretoria, South Africa

### *Abstract*

Universally there is an outcry for change in education. Many industries have changed their modus operandi yet education remains mostly unchanged. Twenty-nine students at a South African university enrolled in a postgraduate certificate in higher education. A blended learning, e-learning module was developed where the teaching method relied heavily on the use of technology and constructionism. Students reflected weekly on their experiences and completed a survey at the end of the module. The analysis of the results indicated that after initial discomfort students found the module rewarding and fulfilling.

**12:00 – 12:30**

**Coffee Break**

**12:30 – 13:30**

*10' each poster*

**Posters Session**

*Moderator: Dr Maria Eugenia Witzler D'Esposito, Faculdade Cultura Inglesa, Brazil*

## **Following the flow-zooming in on configurations: Shawoning teachers' socio-material practice in motion**

Maria Spante, University West, Sweden

## **Findings from a pilot study on the relationship between literacy skills and comorbidities in children diagnosed with ADHD**

Georgia Psyrra, University College Dublin, Ireland

## **FAnTASIA: Fairy Tale Science Augmented**

Konstantinos Tsolakidis, University of the Aegean, Greece

**RoboPisces: innovative educational ROBOtics strategies for Primary School Experiences**

Konstantinos Karampelas, University of the Aegean, Greece

**DigitALAD: Digital Adult Educators: Preparing Adult Educators for a Digital World**

George Sarrigeorgiou, University of the Aegean, Greece

**Effective and Innovative approaches for resilient Parenting**

Anastasia Pyrini, University of the Aegean, Greece

**13:30 – 15:30**

**Lunch Break**

**15:30 – 17:15**

*15' each paper – 30' Discussion*

**Session 3**

Moderator: Evangeline Marlos Varonis, Office of Learning Technologies, Hiram College, United States of America

**TEXT PRODUCTION IN L2 VIA HYPERTEXTS: THE INFLUENCE OF HYBRID DIGITAL MEDIA IN ARGUMENTATIVE CONSTRUCTION IN SPANISH**

Lucas Almeida Silva, Federal University of São Paulo, Brazil

*Abstract*

This paper aims to study the means by which text production in L2 takes place nowadays. The study of Spanish, official language of Mercosur, is a foreign language for L2 students. It is observed that textual productions have been breaking down linguistic and cultural barriers, in order to reconfigure traditional methodologies. Therefore, a 20-hour Spanish course based on discussions via a Whatsapp® group considering hybrid texts was proposed for undergraduate students, at the Federal University of São Paulo, in São José dos Campos, Brazil. During the activities used, it was observed that the students started to use more natural and cohesive written argumentation.

## **STUDENT TEACHER EXPERIENCES OF AN IMMERSIVE VIRTUAL REALITY BULLYING EXPERIENCE**

Göran Fransson, and Jörgen Holmberg, University of Gävle, Sweden

### *Abstract*

In this study, 19 student teachers (grade 7-12) experienced a 3 minute long VR-experience offering a first person perspective of bullying by peers. The experiences were observed and afterwards five focus group interviews were performed with 3-4 students per group. The results show that the students experienced the VR-experience as immersive, however to varying degrees depending on previous experiences and personality traits. Issues related to what they experienced, learned and reflected about in relation to potential educational uses of VR are discussed as well as challenges and opportunities in using VR in different subjects.

## **PRODUCING DIGITAL STORIES FOR LANGUAGE LEARNING AND DIGITAL COMPETENCE ACROSS GENERATIONS AND POSITIONS OF LEARNERS IN MUNICIPALITIES**

Maria Spante, University West, and Kristina Brocker Strömstad, Sweden

### *Abstract*

This study shows how a small project in an SFI (Swedish for Immigrants) classroom has the potential to influence larger processes in unexpected ways, if acknowledged and supported. It shows how important it is to think about creative possibilities making use of existing resources, enhancing the possibility to be creative without additional resources and identifying what resources to use in new ways and why. Collaborative research was the methodological approach and Activity Theory was used as analytical framework emphasizing transformative agency by double stimulation, here digital stories that triggered expansive learning in the municipality for multiple actors and organizations.

## **EXPANDING THE USE OF DIGITAL TECHNOLOGIES IN THE SWEDISH EDUCATIONAL SYSTEM – A STUDY ON MANAGEMENT CHANGE PRACTICE BETWEEN MUNICIPAL SCHOOL ORGANIZERS AND SCHOOL LEADERS**

Jussara Reis Andersson, Mid Sweden University, Sweden

### *Abstract*

This paper describes three Swedish municipalities' work with the Gov-

ernment digitalization plan, called #skolDigiplan. It will be studied in the project DUVKOM, “Digitalization of the educational system in municipalities,” a joint project between three municipalities in the North of Sweden as well as Mid Sweden University. The school organizer is responsible for expanding the use of digital technologies in the Swedish educational system. Based on data from interviews and document analysis, this paper presents some preliminary findings.

## **FROM “DISTRACTION” TO TRACTION: DANCING AROUND BARRIERS TO CAPTION LIVE THEATER AND PROMOTE CULTURE CHANGE**

Evangeline Marlos Varonis, Hiram College, and Alexia A. Kemmerling, Great Lakes Publishing, United States of America

### *Abstract*

Hiram College implemented a novel, cost-effective use of mobile technology to deliver live theater captioning to the personal devices of theatergoers. After Theatre Department concerns about script copyright and distraction to other members of the audience were addressed, a paper script was loaned, copied, digitized, converted to readable text, transferred to PowerPoint, and uploaded to Nearpod for live delivery. During the performance, theatergoers joined Nearpod on their own devices as “students” to view the slides advanced by the “teacher” on an iPad as the performance progressed. This provided a low cost, effective captioning solution that enhanced the experience for those with hearing disabilities and helped the college develop traction for its efforts to embrace Universal Design for Learning and make all learning activities fully accessible.

**17:15 – 17.30**

**Coffee Break**

**17:30 – 18:30**

**Philosophers' Café**

A discussion facilitated by the Chair of the ICICTE Scientific Committee that brings to a conclusion the proceedings of ICICTE 2020.

The idea is to synthesize the themes that predominated during the conference. The areas explored by the different papers presented, as well as discussions that ensued, both in the plenary sessions themselves



and during the workshops, dealing as they do with the most important aspects of the use of different technologies in educational practice.

It is the aim of the discussion to look back at what was discussed and also look forward to where this will lead, and its ramifications for education and society in the times in which we are living: unprecedented times for which we were not entirely prepared, but for which technology provided a modicum of a solution.

*Facilitator:* Dr Ġorġ Mallia, Head of the Media and Communications Department, Faculty of Media and Knowledge Sciences, University of Malta, Malta

*Participants:* All ICICTE 2020 participants who wish to join in the conversation.

**18:30 – 19:00**

### **Closing Remarks and ICICTE 2021**

Nancy Pyrinis, ICICTE Founder and Conference Director, Greece

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

George Sarri Georgiou, Conference Manager, University of the Aegean, Greece



Some of the ICICTE 2019 participants on the last day of the conference

# Some ICICTE 2019 highlights



Top to bottom, left to right:  
Keynote 1, Welcome Reception,  
Philosophers' Café, Closing night Greek  
Night dinner and dancing.





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