

ICETM 2019
2019 2nd International Conference on
Education Technology Management

ICFL 2019
2019 2nd International Conference on
Future Learning

University of Barcelona, Spain | December 18-20, 2019

Hosted by



Supported by



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Dear professors and distinguished delegates,

It is indeed a pleasure to welcome you to 2019 2nd International Conference on Education Technology Management (ICETM 2019) and 2019 2nd International Conference on Future Learning (ICFL 2019) being held in the beautiful city of Barcelona, Spain.

We are pleased to have accepted 36 presentations out of 87 papers from 19 countries and regions, including Malaysia, China, Taiwan, México, Colombia, Indonesia, France, United Kingdom, Philippines, Bulgaria, Italy, Canada, Toulouse, New Zealand, India, Portugal, Greece, Japan and Ecuador. On December 19, these presentations are divided into two parallel sessions and one poster session: Basic Teaching and Innovative Educational Technology & Information Technology and E-commerce. One best presentation will be selected from each parallel session, evaluated from: Originality, Applicability, Technical Merit, Visual Aids, and English Delivery.

A word of special welcome is given to our speakers, Prof. Salah Al-Majeed from University of Gloucestershire, UK, Assoc. Prof. Andrea Nanetti from Nanyang Technological University, Singapore as well as all the authors who are pleased to make contributions to our conference and share their new research ideas with us. And we wish to express our sincere appreciation to all the Conference Chair, Program Chair, Steering Committee Chair and Technical Committee.

We believe that by this excellent conference, you can get more opportunity for further communication with researchers and practitioners with the common interest in education technology management and future learning fields.

Our wish is that you will enjoy this conference, contribute effectively toward it and take back with you knowledge, experiences, contacts and happy memories of this conference.

Yours sincerely,

Conference Chair

Prof. Mario BarajasFrutos

University of Barcelona, Spain



Notes:

- You are welcome to collect conference materials at any working time during the conference.
- Please kindly keep your Paper ID in mind so that the staff can quickly locate your registration information onsite.
- Certificate of Listener can be collected at the registration counter. Certificate of Presentation will be awarded after your presentation by the session chair.
- One Best Presentation will be selected from each parallel session and the author of best presentation will be announced and awarded at the end of the session.
- Your punctual arrival and active involvement in each session will be highly appreciated.
- Please kindly make your own arrangements for accommodations.

Security Attentions:

- Please keep all your belongings (laptop and hand phone, etc.) with you in the public places, buses, metro. Conference organization is not responsible for the loss or damage of any valuables of the attendees.
- Wearing your name tag when you enter the meeting room.
- Name tag is not allowed to borrow to irrelevant persons.
- Do not bring irrelevant persons into the meeting room.

Warm Tips for Oral Presentation:

- Please copy your PPT to the computer on December 18 or in the morning of December 19 at the registration counter.
- Regular oral presentation: 15 minutes (including Q&A).
- Laptop, projector & screen, laser sticks will be provided by the conference organizer.

Historical Building, University of Barcelona

Add: University of Barcelona Historical Building Gran Via de les Corts Catalanes, 585 08007
Barcelona Spain





How to get to **University of Barcelona** from **Aeroport de Barcelona (BCN)**?

- The fastest way: **Taxi**



Taxi-----Av. de l'Aeroport (C-31)-----Around 13.9km / 27 munites-----University of Barcelona

- The economical way: **2 Ways**



BUS A1----- Around 35 munites----- Walking

Get on the **BUS A1** at **Aeroport - Terminal B**

(4 stations)



Get off at **PI Universitat**



Walk to **University of Barcelona**

Or



BUS A2----- Around 36 munites----- Walking

Get on the **BUS A2** at Aeroport Terminal T1

(3 stations)



Get off at **PI Universitat**



Walk to **University of Barcelona**



Hotel Nearby:

You are suggested to make the room reservation by Booking or Agoda in advance. Some hotels near the venue (500m or less) are recommended as below:

- **Hotel Praktik Rambla** (3 stars---4.4/5 points)
Add.: Rambla de Catalunya, 27, 08007 Barcelona
Web.: hotelpraktikrambla.com

➤ **La Casa de Antonio Boutique Rooms Barcelona** (3 stars---4.2/5 points)

Add.: Gran Via de les Corts Catalanes, 584, 08011 Barcelona

Web.: lacasadeantonio.es

➤ **Chic&basic Lemon Boutique Hotel** (2 stars---4.4/5 points)

Add.: Carrer de Pelai, 6, 08001 Barcelona

Web.: chicandbasiclemonhotel.com

➤ **Hotel Caledonian** (3star---4.2/5 points)

Add.: Gran Via de les Corts Catalanes, 574, 08011 Barcelona

Web.: hotel-caledonian.com

➤ **Ako® Premium Suite Hotel Barcelona** (4 stars---4.3/5 points)

Add.: Carrer de la Diputació, 195, 08011 Barcelona

Web.: premiumsuitehotels.com

➤ **H10 Casanova** (4 stars---4.4/5 points)

Add.: Gran Via de les Corts Catalanes, 559, 08011 Barcelona

Web.: h10hotels.com

➤ **Hotel Catalonia Gran Via BCN** (4.3/5 points)

Add.: Gran Via de les Corts Catalanes, 550, 08011 Barcelona

Web.: cataloniahotels.com

➤ **Hotel Soho** (3 stars---4.3/5 points)

Add.: Gran Via de les Corts Catalanes, 543-545, 08011 Barcelona


Web.: hotelsohobarcelona.com

➤ **Hotel Jazz** (4 stars---4.5/5 points)

Add.: Carrer de Pelai, 3, 08001 Barcelona

Web.: hoteljazz.com

< December 18, 2019-Wednesday >

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|  arcade, Mathematics Building Ground Floor | |
| 10:00-17:00 | Onsite Registration & Conference Materials Collection |



Give your **Paper ID** to the staff.

(* Please show your **acceptance letter** / **passport** so that the staff could confirm your identity.)



Sign your name in the attendance list and check the paper information.



Check your **conference kit**, which includes conference bag, name tag, lunch & dinner coupon, conference program, the receipt of the payment, the USB of paper collection and a pen.






Please copy your PPT to the computer on December 18 or in the morning of December 19 at the registration table.

< December 19, 2019-Thursday > Morning



Opening & Keynote Speeches

| | | |
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|  Ramon i Cajal 1st Floor | | |
| 09:50-10:00 | Opening Remark | Prof. Mario Barajas Frutos University of Barcelona, Spain |
| 10:00-10:40 | Keynote Speech I | Prof. Salah Al-Majeed University of Gloucestershire, UK <i>Speech Title: Challenges in Curriculum Design based Systems and Hands-on Approaches for Engineering at Higher Education</i> |
| 10:40-11:10 |  Coffee Break & Group Photo  | |
| 11:10-11:50 | Keynote Speech II | Prof. Mario Barajas Frutos University of Barcelona, Spain <i>Speech Title: Cloud Education, the New Paradigm. The Need for Leadership</i> |

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| 11:50-12:30 | Keynote Speech III | Assoc. Prof. Andrea Nanetti Nanyang Technological University, Singapore <i>Speech Title: On the Shoulders of the Giants. Technological Innovation and the Advancement of Learning</i> |
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Lunch @ Arcade | 1st Floor <12:30-13:30>

< December 19, 2019-Thursday > Afternoon

Parallel Sessions

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|  Ramon i Cajal 1st Floor | |
| 13:30-16:30 | Session I-Basic Teaching and Innovative Educational Technology 12 Presentations EF3005, EF3018, EF1009, EF1024-A, EF3001-A, EF3010-A, EF3015, EF3007, EF3009-A, EF4009-A, EF4004-A, EF4005-A |
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| 16:30-16:45 |  Coffee Break |
| 16:45-19:45 | Session II- Information Technology and E-commerce 12 Presentations EF1004, EF1013, EF1029, EF1050, EF1001, EF1053, EF1031, EF1042, EF1051, EF1052, EF1048, EF1022 |
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< December 19, 2019-Thursday >

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| Poster Presentations | |
| 10:00-11:00 | EF1037, EF1046, EF1026, EF1040, EF1043, EF1017 |
| 16:00-17:00 | EF1038, EF1039, EF2007, EF1041, EF1044, EF1023 |



Dinner@ Hotel SERHS Rivoli <19:50-21:30>

Note: Dinner coupon is needed for entering the restaurant.

< December 20, 2019-Friday >

| SOCIAL EVENT | |
|--------------|-------------------------------|
| 8:30 - 19:00 | Banyoles Lake → Besalú → Pals |



Note:

1. Gather point: The gate of Taste Barcelona (8:15 am)
2. Participants need to sign up by December 5, 2019.
3. The registration fee for social program is **120 USD**.
4. **Inclusions:** traffic and professional English guide

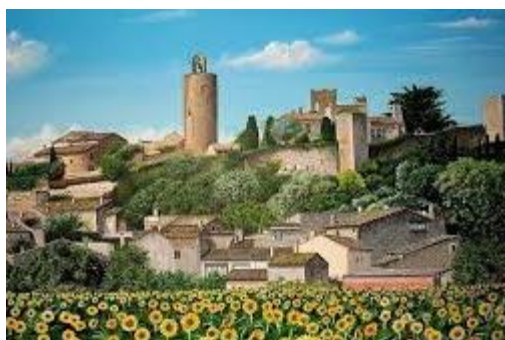
Exclusion: breakfast, lunch and Personal expenses



Lake of Banyoles is a natural lake located in the comarca "Pla de l'Estany", Province of Girona, in northeastern Catalonia, Spain. It is named after the nearby town of Banyoles, to which it belongs entirely. On the western shore it borders with the town of Porqueres. The lake is approximately 2,100 m by 750 m with an average depth of 15 m that in several points gets down to 46.4 metres. It is located in a natural tectonic depression.



Besalú, one of Catalonia's most stunning medieval sites from the XII-XIV century and vestiges of its Jewish past, is a town in the comarca of Garrotxa, in Girona, Catalonia, Spain. The town's most significant feature is its 12th-century Romanesque bridge over the Fluvià river, which features a gateway at its midpoint.



Pals, one of the most charming villages on the Costa Brava, was built around a fortress and has kept its medieval look so well that a visit to Pals is like travelling back in time.

It is a medieval town in Catalonia, northern Spain, a few kilometres from the sea in the heart of the Bay of Empordà on the Costa Brava.



Prof. Mario Barajas Frutos
University of Barcelona, Spain

Mario Barajas Frutos is a Doctor in Education from the University of Barcelona and Master's Degree in Educational Technology from San Francisco State University in the USA. He holds degrees in Engineering and in Philosophy and previously taught Mathematics in secondary education. He teaches about Digital Learning Environments, and in the doctoral program 'Education and Society' at the Faculty of Education of the University of Barcelona. He is a founder of the new Institute of Educational Research of the same University. He is a member of different Research Committees, Journals and Conferences at an international level. During the last two decades, Dr. Barajas has coordinated and participated in a large number of the European Union funded projects and leads the research group Future Learning (www.futurelearning.org).



Prof. Salah Al-Majeed
University of Gloucestershire, UK

Dr. Salah Al-Majeed, highly experienced academic manager with successful accomplishments records of brand technology, product innovations and corporate communication. A proficient academic Professor with extensive international profile and high quality of delivering academic teaching and research. Prof Al-Majeed is the Academic Subject Leader (Head) of Engineering and Technology at School of Business and Technology, University of Gloucestershire. Prior to his current position, Dr Salah was Head of Systems Engineering School at the Military Technological College -MTC Oman (partner with University of Portsmouth, UK). In addition to his role as academic and manager, Salah has an extensive portfolio of Industrial, Academia and R&D works, leading the innovation of implementing technologies. Conduct research into issues and challenges in data exploration through Internet of Things (IoT) and Smart Environment (including Smart City and Biomedical and Health informatics) from a multitude of perspectives, which is driving breakthroughs and innovation in a range of areas, such as Sensor, E-Health, Telemedicine and Mobile Telemedicine, Wireless Networks (4G and 5G) for different layers and applications. Where that can be seen through his role as a lead consultant at North Caspian Operating Company - NCOC – Kazakhstan for Sensabot project and collaborating closely with Huawei, Shell and Carnegie Mellon University – CMU, USA. In addition, his research projects were supported and funded by UK, EU and International organizations and companies. Prof Al-Majeed is an Editor-in-Chief of Computer Science Engineering: An International Journal, and Editorial Member, International Journal of Computer Science, Engineering and Applications. In addition to his recognition as a Senior Member of IEEE, he is a reviewer for many well-known journals including IEEE transactions and an invited keynote speaker for many of international conferences and events. Recently, he was the Technical Activities Officer of IEEE Oman Section.



Assoc. Prof. Andrea Nanetti
Nanyang Technological University, Singapore


Dr. Andrea Nanetti is employed as Associate Professor and serves as Associate Chair (Research) of the School of Art, Design and Media, and Senior Research Team Member of the Complexity Institute at Nanyang Technological University Singapore. He received his education in Historical Sciences and Heritage Sciences in Italy (Bologna), France (Paris-Sorbonne), Germany (Köln), Greece (National Hellenic Research Foundation, Athens), and USA (Brown University, Providence RI) within a wide interdisciplinary approach that combined humanities (history, palaeography, philology, archival and library studies) with physics and computational data science. Dr. Nanetti pioneered digital humanities project for archival documents (1997-1999 State Archive in Venice and 2005-2010 State Archive in Ravenna), chronicles (2002-2004 Virtual Library of Venetian Chronicles), historical maps (2000, Imola from Leonardo da Vinci to 1974), and primary sources in general (2007-today, cloud platform for pre-modern Afro-Eurasia). Since 1996, he has published 20 multilingual books (13 single authored), 2 edited journals, and over 70 essays in scientific journals and books in English, Italian, Chinese, Spanish and Modern Greek. He is playing multiple editorial roles including the 'Committee for the Publication of the Sources for the History of Venice'. He was the Founding Co-Chair of the Singapore Heritage Science Conference series and member of numerous Conference Committees including the 'International Conference on Culture and Computing', VSMM, SOTICS, and CCS.

Opening Ceremony & Keynote Speeches

< December 19, 2019, Thursday >

Time: 9:50-12:30

Venue: Ramon i Cajal | 1st Floor

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| 09:50-10:00 | <p>Opening Remark Prof. Mario Barajas Frutos University of Barcelona, Spain</p> |
| 10:00-10:40 | <p>Challenges in Curriculum Design based Systems and Hands-on Approaches for Engineering at Higher Education Prof. Salah Al-Majeed University of Gloucestershire, UK</p> <p>Abstract-Employers require graduates capable of considering innovative approaches, unique thinking, and communicating with different user groups during research or product design, interpreting standards and working with datasets. Systems Approach provide a wider knowledge for learners who are dealing with innovative engineering challenges. However, Hands-on is more practical Engineering that distinguishes quite clearly between being specialised and a general engineer. The talk will take you into a framework that cuts across the best common practices within engineering and the technology education environment and exchanging ideas, actions as well as recommendations for providing supportive resources and knowledge sharing.</p> |
| <div style="text-align: center;">  Coffee Break & Group Photo 10:40---11:10 </div> | |
| 11:10-11:50 | <p>Cloud Education, the New Paradigm. The Need for Leadership Prof. Mario Barajas Frutos University of Barcelona, Spain</p> <p>Abstract-Cloud Computing is a widely extended digital technology used to deliver a variety of different services. The Cloud computing industry has experiencing exponential growth and is the foundation for ubiquitous digital administrative and operational systems, also in educational institutions. Cloud education stands for a new paradigm that it is starting to permeate education in all operations, from administration, to services and, more recently, to educational practices. However, cloud computing adoption in mainstream education remains fragmented because, while the cloud offers many advantages, decision makers are largely unaware of the potential benefits for learning, teaching, administration and management. Therefore, training and support systems are needed to help educational leaders keep up to date with the rapidly changing cloud computing environment. No matter which definition we consider, leadership for pedagogical change is needed, otherwise educators and educational institutions will continue the paradox of using old teaching methods and services, but with new tools. Cloud education specifically does lack of leadership in terms of creating an integrated vision and implementing new educational practices that allow for innovation while improving learning outcomes. Additionally, since the educational systems vary regionally, cloud education need to take into account local contexts for better adoption, beyond the homogenization of the cloud computing tools. In trying to respond to this</p> |

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| | <p>panorama, in this talk I will present a scheme for developing guidelines for identifying skills and competence for Adaptive Education Cloud Leaders. I will also present a Qualification Framework for Education Cloud Leaders based on Competences. This framework has been developed in the framework of the international project L-Cloud, funded by the European Union. Based on this scheme, I will finally introduce a training scheme for consolidating cloud educational leadership, taking into account the identified competences.</p> |
| 11:50-12:30 | <p>On the Shoulders of the Giants. Technological Innovation and the Advancement of Learning Assoc. Prof. Andrea Nanetti Nanyang Technological University, Singapore</p> <p>Abstract-Societies have always used their heritage, viz. the treasure of human experiences, to remain resilient and to express their cultural identities. Nowadays, it seems that the rapid development of our society is endangering this spontaneous cultural process of adaptation to change. Part of social adaptation to change is enabled by the human knowledge and values that we transmit from one generation to the next. In the past, this transmission was passed down through artefacts, oral traditions, social rituals, and cultural practices. But given the increasing pace of technological innovation of our times, many traditional modes of knowledge and value transmission have become obsolete or at risk of vanishing. New media and non-conventional communications have arisen, creating new possibilities for cultural expressions and the advancement of learning. The vision is that with a clearer understanding of where we come from, we can better understand who we are, and understanding where we are now, we may influence what we want to become. As Helga Nowotny (co-founder and former President of the ERC) discussed on 22 January 2019, at Nanyang Technological University Singapore, with Maestro Michelangelo Pistoletto and Nobel Laureate in Chemistry Ben Feringa, it can be a Fourth Industrial Revolution with increased inequality and poverty or a Third Paradise, a balanced connection between humanity and nature. It is all up to us.</p> |



Lunch @ Arcade | 1st Floor <12:30-13:30>

Note: lunch coupon is needed for entering the restaurant.

Session I: Basic Teaching and Innovative Educational Technology

< December 19, 2019, Thursday > Afternoon

Time: 13:30-16:30

Venue: Ramon i Cajal | 1st Floor

Chair: Asst. Prof. Yung-Ling Tseng

Chaoyang University of Technology, Taiwan

12 Presentations: EF3005, EF3018, EF1009, EF1024-A, EF3001-A, EF3010-A,
EF3015, EF3007, EF3009-A, EF4009-A, EF4004-A, EF4005-A

Note:

- ✧ Please copy your PPT to the computer on December 18 or in the morning of December 19 at the registration table.
- ✧ Please arrive at meeting room 15 minutes prior to the sessions to prepare and test your PowerPoint.
- ✧ Certificates of Presentations will be awarded to each presenter by the session chair when the session is over.
- ✧ One Best Presentation will be selected from each parallel session and the author of Best Presentation will be announced and awarded when the session is over.

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| <p>EF3005 13:30-13:45</p> | <p>The Hotspots and Trends of Adaptive learning: A Visualized Analysis Based on CiteSpace Miaomiao Zhan Central China Normal University, China</p> <p>Abstract—Using the visual analysis of CiteSpace, and adopting the visual analysis and content analysis as main research methods, research on hot spots and development trends of adaptive learning were revealed. The literatures were collected from 2000 to 2018. The study of adaptive learning technology in foreign countries focus on higher education, and it is suggested to expand the scope of the research. The application of adaptive learning technology in education should be strengthened in China. The updating and integration of learning style scale should be considered and the open learner model is a new trend in future. In order to achieve the sharing of resources and domain models or the reusability and portability of the system, unified standards should be established. In addition, we should pay attention to the application of learning science theory closely related to adaptive learning. Adaptive personalized support service with big data, artificial intelligence, context recognition and emotion capture are a new trend in this field.</p> |
| <p>EF3018 13:45-14:00</p> | <p>Digital Learning Object for Audiovisual Production Alexandre Vieira Maschio and Nuno Manuel Robalo Correia New University of Lisbon, Portugal</p> <p>Abstract—The use of digital and mixed digital learning modes is becoming more popular in pedagogical practice at various levels of instruction. This article reports a case study where a digital learning object (DLO) was developed to assist in the pedagogical practice in higher education (in the audiovisual area).</p> <p>The purpose of the research was mainly to assess the pedagogical contribution of DLO through the perception of students who subdivided into four groups, performed two practical exercises at different times and order, during a 60-hour course. Both exercises of the same complexity were performed without and with the aid of the digital tool.</p> <p>Subsequently, participants responded to forms so that they could rate which attributes they considered the most and least relevant and appropriate of the tool, to evaluate the tool as a whole and in which aspects it could receive improvements for a future version.</p> <p>A blind analysis was also performed using the products developed by the students during the course to infer qualitative gain in the work (due to possible time savings generated by the tool automation function). However, it was noted that students, instead of using the possible time gained for qualitative improvement of their work, preferred to close their daily activities earlier.</p> <p>In the end, it was found that the DLO tool was very well evaluated both conceptually, and in the relevance and adequacy analysis ranked relevant criteria/characteristics as most important. It was considered relevant, differentiated, with credibility and high intention to use (among other metrics). The blind analysis showed that there was no qualitative difference between the works developed with or without the aid of the tool.</p> <p>It concludes by a positive indication of the use of DLO's in teaching practice in higher education,</p> |

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| | <p>because the digital tool, besides being very well received by students during classes, also allows the aid in the review and reinforcement of the learning content taught.</p> <p>For future research, it is understood that the diversity of knowledge areas with different pedagogical characteristics makes case studies useful for presenting different aspects and inferences in the most diverse contexts of use. However, more collaborative research could lead to further analysis of DLO's pedagogical contributions.</p> |
| EF1009 14:00-14:15 | <p>Empirical Research on PBL Teaching Technique of Design Innovation Curriculum <i>Yann-Long Lee, Yung-Ling Tseng, Ruey-Tsuen Chang and Chuan-Po Wang</i> Chaoyang University of Technology, Taiwan</p> <p>Abstract—In the teaching method of industrial design education, there has been a booming trend in recent years. The reform and application of these teaching methods have helped students to better understand the direction of the design and become an excellent industrial designer. Therefore, more and more design scholars have invested in this field, and design teaching methods have become an increasingly important issue in the design circle.</p> <p>The PBL teaching method is a problem-based learning approach that is different from the traditional teacher-centered teaching model. The practice of PBL teaching methods is rare in industrial design education, most of it is more rigorous apprenticeship training. Therefore, this study will use the PBL teaching method in the course: Basic design. After a semester of implementation, practice, and focus interviews with teachers, then the differences between the PBL and the traditional teaching methods are descriptive.</p> |
| EF1024-A 14:15-14:30 | <p>Using Wireless Technologies to Supervise New Teaching Practices <i>Cécile Gadies and Laurent Faure</i> Université de Toulouse, France</p> <p>Abstract—In France, rapid entry into the teaching profession plunges novice teachers straight into a professional context alternating periods spent at a training center with work experience in a school. Indeed, after passing the national competitive teaching exam, all novice teachers must validate a Master MEEF by following a one-year training course. During this course, they are assigned a part-time job in a school where they take responsibility for classes and must acquire the different skills relative to the teaching profession. These new teacher training methods involve various actors who are required to cooperate (Marcel, Dupriez, Bagnoud, 2007) in order to provide coordinated support within what we can call asymmetrical relationships (Thomazet & Mérini, 2014) and with a “hands-on” learning objective regarding teaching practices (Bru, 2004). This rapid entry into the profession, placing new teachers directly in a school situation does not give them the opportunity to collaborate with other trainee teachers for example, to prepare lessons together or to observe and analyze each other’s classroom practices. In this specific context, the work-based training method calls for supervision of the actual practices of the novice teachers.</p> <p>Yet, the trainers are not able to directly observe the teachers in action in the classroom. Consequently, their coaching is based mainly on declared practices. In our view, this makes it</p> |

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| | <p>virtually impossible to give performance feedback based on an analysis of what has actually taken place. Faced with these new training situations, different devices (Rock et al., 2012) have been used in an attempt to address this problem and find answers to the questions that follow. How can actual teaching practices be observed and professional skills built in these situations? How can teachers be given feedback and support based on what they really do in the classroom ? These different devices have relied on technology to set up deferred monitoring sessions used in a wide variety of training situations. However, little research has been done on identifying the methodologies used and the results produced. This lack of research material makes it difficult to carry out a systematic study of the remote methods of coaching novices as they embark on the teaching journey. So, based on a review of literature published on support methods in different countries, we will explore the following questions: What methods are available to reduce the physical distance between the trainee teacher and the teacher trainer? What are the advantages and limits of these methods? Does a common work base exist between these different forms of support? Do the results of these studies demonstrate the professional development of the teachers? Afterwards, we will take a closer look at the possible devices and their characteristics in order to both rethink the observation and coaching offered to student teachers by teacher trainers in real-life teaching situations and also to facilitate peer mentoring for experienced teachers. In the first part of this article we take a look at BIE coaching (Rock et al., 2009) which has been set up, tested and analyzed in work published in the English-speaking world, particularly in the United States. We examine research based on technologies used to supervise real-time teaching practices. This review is based on mobile technologies, multimedia and videoconferences, and on the experiments we conducted in France on a "real-time regulation" method, some of the results of which will be presented.</p> |
| <p>EF3001-A 14:30-14:45</p> | <p style="text-align: center;">Hearables and the Future of Learning Rory McGreal Athabasca University, Canada</p> <p>Abstract—Hearables, a term first coined by Hunn (2014), are wireless smart micro-computers with artificial intelligence that incorporate both speakers and microphones. They fit in the ears and can connect to the Internet and to other devices; they are designed to be worn daily. These devices, such as the Bragi Dash, Vinci and Bose Hearphone are now appearing on the market, a market which is expected to exceed \$40 billion in the USA by 2020. Hearables are not headphones, nor hearing aids, nor ear plugs, although they could take on the affordances of any of these devices (Banks, 2018). Headphones are designed for listening to music. Hearing aids are designed as an aid for the audibly impaired. Ear plugs reduce unwanted sounds by cancelling noise. Hearables offer comparable features and additionally provide users with a microphone and connectivity to the Internet, thus supporting telephony and personal digital assistant (PDA) services (Computational Thinkers, n.d.). Prior to 2017, in the USA, such devices required the approval of the Food and Drug Administration. This approval is no longer required for hearables as they are no longer considered</p> |

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| | to be medical hearing aids (Over the Counter Hearing Aid Act, 2017). This paves the way for the expansion in the market of significantly lowerpriced hearables, undercutting the expensively-priced hearing aid market. |
| EF3010-A 14:45-15:00 | <p>The Case for Clarity: Designing and Implementation Online Teaching Portfolios to Disseminate Expectations for Promotion at the University of Auckland</p> <p>Pauline Cooper-Ioelu University of Auckland, New Zealand</p> <p>Abstract—This presentation reflects on the rationale, design and development of an innovative online teaching portfolio implemented at the Faculty of Medical and Health Sciences, University of Auckland, New Zealand. Based on research and the experience of developing and implementing the tool, I will argue that for academic staff to engage deeply with online professional development tools, they need to not only connect to their ongoing teaching development but also clearly align to reward and recognition. FMHS Teaching Portfolio is unique as it was designed with this dual purpose; it is not only designed to assist with the preparation of a teaching portfolio but, at the same time, aimed to clarify and surface institutional and faculty expectations around teaching quality for promotion and this is explicitly signalled and outlined as faculty complete the portfolio activities. This approach is underpinned by the idea that measuring teaching quality is complex and more subjective than research quality. The private and individual nature of the promotion and continuation process means that much of the debate surrounding what is valued by promotion committees are shrouded by myth, opinion, and conjecture (Fairweather, 2005). We argue that surfacing “shadow” policies relating to rewarding, recognizing and promoting excellent teaching - by making promotion criteria explicit and completely transparent - can bear fruitful results and impact positively on teaching cultures by shattering the myths surrounding what is valued faculty work and establish new norms and behaviour. Lastly, I document some of the unintended initiatives that have eventuated from FMHS Teaching Portfolio’s creation.</p> |
| EF3015 15:00-15:15 | <p>A Study on STEM Interdisciplinary Integration Mode Based on Artificial Intelligence Support of Education</p> <p>Tang Yewei, Zhao Yinting and Sun Si Northeast Normal University, China</p> <p>Abstract—Foreign studies on STEM education have shown that STEM education can promote discipline integration and student ability development. After making a general survey of studies on STEM education, it is easy to find that the development of STEM education cannot be separated from technical support. How to use emerging technologies to promote development and effective interdisciplinary integration of STEM education is the study focus of this thesis. In this thesis, firstly, the connotation, formation stage and characteristics of STEM education is explained; secondly, based on the analysis on concept for artificial intelligence of education, its technical support on STEM education is discussed; finally, under technical support of artificial intelligence of education, STEM interdisciplinary integration mode based on artificial intelligence of education is</p> |

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| | constructed and then it is analyzed from learning activity design, teaching environment design, teaching objectives design, teaching content design and teaching evaluation design, hoping to better promote the interdisciplinary integration of STEM |
| EF3007 15:15-15:30 | <p>The Gathering of the Community of Inquiry in Online Learning</p> <p>LayHuah Goh Help University, Malaysia</p> <p>Abstract—This study employed learning analytics to understand the gathering of a community of inquiry (CoI) through the discussion forums of a global MOOC offering. The transcripts of the discussion were compiled and the discourse analysed. In this study, content analysis was applied to examine the discussion transcripts for learning, with the aid of Atlas.ti, which is a qualitative data analysis software. The element that is most dominant in the dynamics of this online learning community is the cognitive presence. The teaching presence was the underlying thread that wove the fabric of the community of learning, binding the cognitive and social presence into the creation of knowledge and new learning. The open communication which is a social presence element, allows learners the freedom to express their ideas and thoughts. It is recommended that relevant learning discussions should incorporate practices that encourage the development of meaningful learning dialogue.</p> |
| EF3009-A 15:30-15:45 | <p>Improving Argument Skills among 7th Graders by Video Indexation</p> <p>Julien Magnire and Colin Lescarret Université Toulouse Jean Jaurès, Toulouse</p> <p>Abstract—Video is increasingly used in educational context. It permit to associate dynamic images with verbal content and to embody a speech by showing who is speaking and how, modifying the impact of the message. In this study, we are interested in the development of argument skills among 7th grade students exposed to a socio-scientific controversy (the possibility, or not, of an entirely organic diet in 2050) presented in the form of video interviews. All subjects saw a set of short videos presenting arguments pros and cons according to different levels of the controversy. In a cross plan incorporating all possible conditions, some subjects also viewed a video giving indications to improve their ability to argue, and others had to perform a video indexation activity (by drag and drop) from various topics. Close-ended questions about their beliefs, attitudes and knowledge, as well as an open-ended question to give and justify their position, were raised before and after seeing the videos. Results show a significant change in the position of the subjects during the post test. The analysis of answers to open-ended questions also shows an enrichment of their argumentation. Subjects provide longer answers with more arguments and counterarguments. This effect is not significantly stronger for those who have seen the video about argumentation, but it is for those who have had to index the videos. This suggests the possibility and effectiveness of unusual activity with video in educational context to strengthen the integration of knowledge on a topic and help young people to produce rich and nuanced argumentation.</p> |

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| <p>EF4009-A 15:45-16:00</p> | <p>Exploring the Role of Technology in Teaching and Learning: Future Prospects Anjali Shokeen GGSIP University, India</p> <p>Abstract—Technology has impacted all the aspects of human life and has profoundly changed the education system. Today, massive information is available on fingertips through internet i.e. access to learning opportunities available on online worldwide. Technology has also expanded through the opportunities of communication and collaboration and has also improved the lives by making it easier and faster. It has developed the new ways and methods of transaction in teaching learning processes. Existence of Technology has caused a fundamental change in the nature of teaching and learning. The new waves of learning encountered by students depend upon the successful utilization of technology in the classrooms by teacher. The present paper explores the use of technology in teaching and learning. The major issues pertaining to the use of technology are also discussed in order to suggest recommendations for the future usage of technology.</p> |
| <p>EF4004-A 16:00-16:15</p> | <p>Learning French Vocabulary and Pronunciation with Mobile Gaming Denis Liakin, Walcir Cardoso and Natallia Liakina Concordia University, Canada</p> <p>Abstract—Digital gaming in education has been expanding in popularity and is gradually being applied to L2 contexts (Godwin-Jones, 2014), with results supporting the hypothesis that its use can enhance learners' second/foreign language (L2) acquisition (e.g., Sykes & Reinhardt, 2013). A different type of digital gaming, presented in a mobile format, has the potential to offer the same benefits of digital gaming while also maintaining the portability and accessibility attributes of mobile devices (Stockwell, 2010).</p> <p>The first goal of this study is to introduce a mobile digital game, Astronautes Français Langue Seconde (Astronautes FLS henceforth), created to motivate L2 learners to practice French. It initially describes the conceptualization and development of Astronautes FLS (http://astronautesfls.ca), a non-serious (edutainment) cooperative game inspired by Spaceteam (http://spaceteam.ca). The conceptualization of Astronautes FLS includes the selection of a lexicon from the 5,000 most frequently-used words in French (i.e., with each 1,000 frequency band constituting a "proficiency level"), thus allowing learners to practice what they already know, in an automatized, fluent manner (as recommended by Nation & Newton, 2009 and Segalowitz, 2010).</p> <p>The second goal of the study is to report the results of a feasibility study in which we examined the technical and pedagogical viability of Astronautes FLS, as well as learners' perceptions of the game as a learning tool. Adopting a mixed-methods approach for data collection and analysis, we report the results of game-playing observations, survey analyses and focus group discussions.</p> <p>The results of the nonparametric tests using an Independent Samples Mann-Whitney U Test indicate that participants perceived the pedagogical affordances of Astronautes FLS similarly, regardless of their level of proficiency in French. Our results suggest that Astronautes FLS is a fun and engaging game for the L2 classroom with great potential to motivate students and contribute</p> |

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| | to creating a comfortable and joyful learning environment. It encourages fluency through input (reading, listening) and output (speaking intelligibly) practice, and creates a non-threatening environment to experiment with language “anytime anywhere”. |
| EF4005-A 16:15-16:30 | <p>Adaptivity in Learning Systems: Certification of Digital Competences in Primary and Secondary Schools (CRISS) within the Greek Educational System</p> <p><i>Manolis Kartsonakis</i> University of Crete, Greece</p> <p>Abstract—The development of the digital competences of the pupils has to be considered as one of the fundamental priorities for the European school system in the forthcoming years. Educational authorities, Boards of education, School advisors should focus on the significant improvement of this skill of our pupils in order to get them acquainted with the recent and the forthcoming developments of the digital era we all face. The development of the digital competences will empower our pupils to be responsible citizens in the digital society.</p> |



Coffee Break <16:30---16:45>

Session II: Information Technology and E-commerce

< December 19, 2019, Thursday > Afternoon

Time: 16:45-19:45

Venue: Ramon i Cajal | 1st Floor

Chair: Assoc. Prof. Andrea Nanetti

Nanyang Technological University, Singapore

12 Presentations: EF1004, EF1013, EF1029, EF1050, EF1001, EF1053, EF1031, EF1042, EF1051, EF1052, EF1048, EF1022

Note:

- ✧ Please copy your PPT to the computer on December 18 or in the morning of December 19 at the registration table.
- ✧ Please arrive at meeting room 15 minutes prior to the sessions to prepare and test your PowerPoint.
- ✧ Certificates of Presentations will be awarded to each presenter by the session chair when the session is over.
- ✧ One Best Presentation will be selected from each parallel session and the author of Best Presentation will be announced and awarded when the session is over.

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| <p>EF1004 16:45-17:00</p> | <p>Study on the Case-based Teaching Method in the Circuit Principle Course under Emerging Engineering Education Hongzhi Ouyang University of South China, China</p> <p>Abstract—The Emerging Engineering Education (3E) is the national strategy for upgrading engineering education implemented by the Ministry of Education in China. Circuits education is crucial in the first phase of any electrical engineering curriculum. In order to change the status that emphasizing theory over practice in the circuit principle course, the core content of the course is divided into several teaching units, and the case-based teaching method is carried out. This paper gives several engineering examples and their implementation process is described, including the human body's resistance model, dual tone multi frequency, etc. For testing the teaching effect, two contrast experiments were designed. The experiment proved that compared with the traditional teaching model, students have significantly improved their active ability, practical ability, and scientific research ability through case-based teaching. So the case-based teaching method is an effective method for new century students.</p> |
| <p>EF1013 17:00-17:15</p> | <p>Teachers' Meaning Formation and Mental Concept Representation of Inclusion Claudia Jaquelina González, María Adelfa Canales and Ernesto Octavio López Universidad de Monterrey, México</p> <p>Abstract—A sample of 20 teachers with experience on inclusive education and 20 teachers with no experience dealing with inclusion of students with intellectual disability were required to take a natural semantic net instrument to analyze their mental concept representation towards inclusion. The goal was to compare both groups meaning formation regarding this topic. Results showed that both groups had similar knowledge schemata, but conceptual organization was different which lead each group to different meaning formation toward inclusion. It is argued that by using natural semantic network techniques formative learning techniques can be implemented to empower teachers to cope with inclusion of people with disabilities in regular educational programs.</p> |
| <p>EF1029 17:15-17:30</p> | <p>The Effect of Operations Risk on Cooperation Efficiency of Industry-University-Research Knowledge Innovation Alliance in China He Liu, Shiyu Qu and Qing Zhu Harbin Insitute of Technology, China</p> <p>Abstract—The dramatic change of economic environment triggers the more complicated complex cooperation among firms, governments, and research institutions. Actually, cooperation efficiency (CE) of some industry-university-research (IUR) knowledge innovation alliances has not achieved expected levels. Accordingly, this paper organizes an empirical analysis of 296 groups of China's IUR alliances and then investigates the effect of risk among stakeholders, operations process risk, and environmental risk on alliances' CE. Empirical results present that decreasing stakeholders' risk improves alliances' CE. Further, alliances' cooperative R&D mode, human capital, digestion</p> |

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| | <p>and absorption capabilities of technology progress, degree of R&D output sharing by firms, firms' compliance for R&D funds input, and universities and research institutions' compliance for R&D activities all positively affect alliances' CE. Additionally, alliances' favorable external environmental improves such efficiency and further strengthen the effect of stakeholders' risk on this efficiency. Our findings will help participants of IUR alliance and policy-makers to enhance alliances' CE with the fall of actual risk they need to deal with, also providing a flexible way to establish an effective partner-selection mode.</p> |
| <p>EF1050 17:30-17:45</p> | <p>Investigating the Dunning-Kruger Effect Among Students within the Contexts of a Narrative-centered Game-based Learning Environment</p> <p>Arnel Bayoga Ocay Urdaneta City University, Philippines</p> <p>Abstract—This study investigates the prevalence of Dunning-Kruger effect among students within the contexts of a narrative-centered game-based learning environment. The game-based learning application for microbiology named Crystal Island was used to analyze student's in-game performance and behaviors. This study was participated by randomly selected (N=53) tertiary students of who were enrolled in a non-medical course. Beliefs on self-efficacy were collected through an adopted questionnaire to measure student's self-efficacy on science learning and computer gaming. Interaction logs from Crystal Island were used in the analysis. Our results show that on some aspects of student's self-efficacy measures, students had the tendency to inaccurately predict their actual performance while playing the game learning technology.</p> |
| <p>EF1001 17:45-18:00</p> | <p>The Influence of Proactive Capabilities and Knowledge-based Dynamic Capabilities on Competitive Advantage of Manufacturing Firms</p> <p>Norhuda Salim, Mohd Nizam Ab Rahman and Dzuraidah Abd. Wahab The National University of Malaysia, Malaysia</p> <p>Abstract—Achieving and sustaining competitive advantage is a goal among firms, but it is increasingly challenging in a rapid changing and sophisticated environment. Most of the environmental management undertaken by firms in developing countries are not able to increase the competitive advantage of the product. Hence, this study investigates proactive capabilities that need to be developed in a dynamic environment where it involves green product innovation, environmental proactivity, alliance pro-activeness, and knowledge-based dynamic capabilities that impact on competitive advantage performance. This study involved a survey of 157 manufacturing firms with ISO 14001 certification throughout Malaysia. By implementing structural equation modelling approach, the results provided evidence of positive and significant direct effects of green product innovation and environmental pro-activity on firm's competitive advantage. The relationship of alliance pro-activeness was fully mediated by the presence of knowledge-based dynamic capabilities as a condition to survive and prosper in a competitive market.</p> |
| | <p>Raising Lifelong Learning Skills Using Learning Technology at University for Foreigners of Perugia</p> <p>Talia Sbardella, Valentino Santucci, Chiara Biscarini, Stefania Spina and Giuliana Grego University for Foreigners of Perugia, Italy</p> |

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| <p>EF1053 18:00-18:15</p> | <p>Abstract—Soft skills are a set of socio-emotional abilities considered as fundamental for personal development, for academic and work achievement and long-term success, and higher education is today called to support the graduates' employability and to provide effective tools to face the contemporary society fostering both technical and soft skills of its students. The University of Foreigners of Perugia has addressed this topic with the adoption of a new lifelong learning skills' development and assessment model based on a social-constructivist view of teaching and learning oriented towards elements of intercultural education, enclosing the training of soft skills into hard skills courses and devising a soft skills' assessment process in order to provide a reliable and suitable procedure both for the community of learners and for assessors. The model has been embedded in few experimental courses selected from different Master's degrees and our teachers was involved in a training pathway using innovative learning technologies such as LMS (Learning Management Systems) and other digital tools in order to foster students' skills. For the pathways has been used approaches as blended learning, collaborative learning, flipped classroom, spaced learning, learning by doing. In this paper we present and analyze the data collected during our courses. The investigation show that the use of learning technology increased students' active participation.</p> |
| <p>EF1031 18:15-18:30</p> | <p style="text-align: center;">Estimating the SMEs Financing gap in Emerging Economies Bandana Das, XiaoFeng Hui and Syed Jamal Shah Harbin Institute of Technology, China</p> <p>Abstract—The accessibility of finance is key factor for a well trading system. Lacking of sufficient access to finance, the sustainability of business and opportunity for growth is limited; firms are underprivileged of the fuel they need to trade and expand. Micro and small and medium-sized enterprises (SMEs) cannot be the exception and there are considerable gaps in the stipulation. SMEs face the biggest obstacles in accessing financing on reasonably priced, while it is considered an essential element of the global economy, and are one of the powerful drivers of economic growth, innovation, and employment. Access to finance is frequently identified as a critical barrier to growth for SMEs. Research shows that SMEs face these hurdles in both developed and developing countries, but the challenges are greatest in lower-income countries. In this paper, we analyze the financing gap in SMEs in developing countries using World Bank data. Of these developing economies surveyed, the potential demand for MSME finance is estimated at US\$ 8.9 trillion, as compared to the current credit supply of \$3.7 trillion. The finance gap attributed to formal MSMEs in developing countries is valued at \$ 5.2 trillion, which is equivalent to 19 percent of the gross domestic product (GDP) of the 128 countries.</p> |
| <p>EF1042 18:30-18:45</p> | <p style="text-align: center;">Finance and Budgeting Applied in the Real Estate UAE Market Alessio Faccia, Corlise Le Roux and Ahmed Eltweri Coventry University, United Kingdom</p> <p>Abstract—The real estate market in the United Arab Emirates (UAE) has shown a slowdown in growth over the past few years, however renewed optimism is starting to enter the market in</p> |

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| | <p>2019. This paper aims to analyse the main characteristics of the real estate market in the UAE. The dynamics of the real estate market in the UAE considering the finance and budgeting aspects linked to the market. The financial study focuses on the analysis of the stock market and on the long-term development expectation, while budgeting analyses takes into account the peculiar characteristics of the buildings and the discounting of maintenance and service costs. This analysis was carried out following a quantitative methodology supported by a prior literature combined with predictive techniques consolidated in practice. The combination of finance and budgeting, which focuses respectively on the long term macroeconomic and on the short-medium term business perspectives, allows for a logical, reliable and useful explanation for the dynamics observed so far in the UAE real estate market. Finally, useful recommendations are given to policy makers, investors and entrepreneurs in the sector.</p> |
| <p>EF1051 18:45-19:00</p> | <p>Aquae Calidae – Towards a Serious Game Attracting Students to Ancient Civilizations Lubomir Zlatkov, Desislava Paneva-Marinova, Detelin Luchev, Lilia Pavlova and Radoslav Pavlov Institute of Mathematics and Informatics, Bulgaria</p> <p>Abstract—In this paper we propose a new serious game – an exploration of the Aquae Calidae archaeological site, and describe a number of puzzle mini-games used for presenting educational content. By combining virtual reality, panorama pictures of real ancient buildings and interactive gaming components, we offer an entertaining way for primary-school students to improve their knowledge and understanding of the ancient civilizations on the Balkan Peninsula.</p> |
| <p>EF1052 19:00-19:15</p> | <p>An Integrated Model for Examining Factors That Influence Customers' adoption of Internet Banking Ahmed Eltweri, Majed Al-Azzam and Alessio Faccia Coventry University, United Kingdom</p> <p>Abstract—Given the impact of Internet in the banking industry, customers nowadays expect much more from their banks, demanding more convenient, flexible, and easy-to-use financial products and services that could not be easily offered by traditional retail banking. Consequently, several new banking applications have emerged in order to cope with this demand, Internet banking (IB) can be considered as the main example. The main objective of this research is to investigate factors influencing the adoption of IB services. Two technology acceptance models, namely the Diffusion of Innovations Theory (DIT) developed by Rogers (1983) [1], and the Technology Acceptance Model (TAM) developed by Davis (1989) [2], are used to test factors influence customers' adoption of IB. Data collection were utilized via a semi-structured interview exercise. The findings showed that four factors directly determine customer intentions to adopt IB services. Those factors are as follows: perceived usefulness, compatibility, government support, and information about Internet banking. Overall, the results of the current study showed that highlighted factor has a good explanatory power and is therefore robust in predicting customers' intentions to adopt IB in the Middle East and in other developing countries in general. This research contributes to the identification theory and practice of technology acceptance for IB in</p> |

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| | <p>three ways. Filling the gap in IB adoption literature in developing countries through examining the factors that might impede or encourage the adoption of these services among customers; developing and validating an integrated technology acceptance with a good explanatory power in predicting and explaining the potential users' behavioural intentions towards technology adoption in non-Western contexts; and providing valuable insights into how to enhance customers' acceptance of IB services in a developing country context by indicating the relative importance of the identified influencing factors.</p> |
| <p>EF1048 19:15-19:30</p> | <p>Trial to Increase Motivation on Programming by Using Hardware Control Functions in the AT Visual Programming Environment</p> <p>Hisayoshi Kunimune, Shun Kamijima, Tatsuki Yamamoto and Masaaki Niimura Chiba Institute of Technology, Japan</p> <p>Abstract—Physical objects (such as light emitting diodes (LEDs) or model cars) can be used in place of abstract variables in order to develop an intuitive understanding of a program's behavior and to generate interest in programming. The AT visual programming environment was developed with functionality to control external hardware. This was accompanied by teaching materials which express the execution of a program using this functionality in terms of turning LEDs on/off. These materials were introduced in university classes and the students' attitude towards programming was assessed before and after the classes using a questionnaire. The results suggest that these materials can increase students' motivation to learn programming.</p> |
| <p>EF1022 19:30-19:45</p> | <p>The New Paradigm of Quality Assurance Systems on Higher Education in Indonesia</p> <p>Andi Mursidi, Udiansyah, Aunurrohman, Rahmatullah Rizieq, Mariyam and Dian Mayasari Sekolah Tinggi Keguruan dan Ilmu Pendidikan Singkawang, Indonesia</p> <p>Abstract—The purpose of this paper is to present a general view and a brief literature review of the main aspects related to quality assurance in higher education in Indonesia. This gives an overview of the mechanism of Higher Education Quality Assurance in Indonesia which consists of three main components; Accreditation Institution as an embodiment of the External Quality Assurance System (EQAS/SPME), (2) Internal Quality Assurance System (IQAS/SPMI), (3) University Database (UD/PPDPT). The Ministry of Research, Technology and Higher Education has set 3 main standards in quality assurance, namely (1) education standards, (2) research standards, and (3) community service standards. Each is equipped with 8 sub-standards; so the minimum standard that must be applied is 24 standards. These three main standards are minimal academic standards so that each university must explore and guarantee academic and non-academic quality. A College must develop standards in IQAS that exceed the National Standards of Higher Education. Universities can develop the more distinctive or the broader the substance or content that is in the Vision of Higher Education, the more various types and number of Higher Education Standards. The more standards established and implemented indicate that the better the management system is carried out so that the Institution can be superior. Each tertiary institution always has policies and practices designed to guarantee the quality of education, but academic</p> |

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| | institutions also still operate within the national policy framework outlined by the state to guarantee academic standards. This article presents a new paradigm of high education quality assurance systems in Indonesia as well as reviewing new forms of academic and non-academic standards developed by universities in Indonesia. |
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Dinner @ Hotel SERHS Rivoli <19:50-21:30>

Note: Dinner coupon is needed for entering the restaurant.

Poster Presentations

< December 19, 2019, Thursday > Morning & Afternoon

Time: 10:00-11:00 & 16:00-17:00

12 Presentations: EF1037, EF1046, EF1026, EF1040, EF1043, EF1017, EF1038, EF1039, EF2007, EF1041, EF1044, EF1023

Note:

- ✧ Suggested Poster with size of A1 (594mmx840mm width*height), with conference short name and paper ID on right up corner.
- ✧ Posters are required to be condensed and attractive. The characters should be large enough so that they are visible from 1 meter apart.

Part A

Time: 10:00-11:00

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| <p>EF1037 10:00-10:10</p> | <p>An Approach of National and International Cybersecurity Laws and Standards to Mitigate Information Risks in Public Organizations of Ecuador <i>Segundo Moisés MT Toapanta Toapanta, Alexander AJ Jimenez Gurumendi and Luis Enrique LM Mafla Gallegos</i> Salesian Polytechnic University, Ecuador</p> <p>Abstract—Today, cybersecurity is very important, and Ecuador could suffer serious security problems that would compromise the information of its citizens if it does not change its laws and standards in public institutions, the objective of this article was to analyze laws and standards in depth to be able to implement them in organizations public of Ecuador. It was used the deductive and exploratory research method to analyze the information of available media and scientific articles, resulted in improvements in cybersecurity with the use of standards such as the International Organization for Standardization (ISO) and specific laws for cybersecurity, it was concluded that Ecuador need improve the cybersecurity in public organization, because had leak of information and implementation of laws and standards can help mitigate the risks the information.</p> |
| <p>EF1046 10:10-10:20</p> | <p>Design of a Prototype for IT Security Architectures in a Public Organization for Latin America <i>Segundo Moisés MT Toapanta Toapanta, Andrea AJ Jiménez Vaca and Luis Enrique LM Mafla Gallegos</i> Salesian Polytechnic University, Ecuador</p> <p>Abstract—Public organizations in Latin America on security issues at the level of information architecture are delayed a few years, there was legislation to protect information, while in Latin America only few countries defined their strategy. We had principles of information security such as confidentiality, integrity and availability. As an objective, an analysis of the sectors of public organizations was carried out, in order to support the strategy, an information technology security architecture prototype was designed where to achieve this, architectures models and design principles aligned to good industry practices. It was used method, models were reviewed and analyzed. It was a prototype architecture that managed to protect information at different levels of organizations. It was concluded that the prototype of IT security architecture for organizations allows everyone involved in the organization to participate in it because technology is currently present at all levels of public companies.</p> |
| <p>EF1026 10:20-10:30</p> | <p>Characterizing the Environmental Kuznets Curve with Identifying its Influencing Factors in the Context of Low-carbon Economy: A Case of Heilongjiang Province, China <i>Tiansen Liu, Yue Zhu and Yi Su</i> Harbin Engineering University, China</p> <p>Abstract—Heilongjiang Province of China is an energy-intensive area that is experiencing the</p> |

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| | <p>low-carbon economy transition to implement the new policy for revitalizing the Northeastern China. Following the hypothesis of Environmental Kuznets Curve with collecting data from 1985 to 2015, this paper examines the relation between per capita emissions of main pollutants as well as CO₂ and per capita GDP deflator in Heilongjiang Province. Empirical results present that different from the traditional inverted U-shaped curve that was proposed by Environmental Kuznets Curve hypothesis, the curves between each type of emission and per capita GDP deflator have different shapes. Specifically, the shape of curves between per capita emissions of waste water, waste gas, solid waste, CO₂ and per cap GDP deflator are the upright N-shape, inverted N-shape, upright U-shape, and inverted N-shape, respectively. With respect to the influencing factors for the disparity of their shapes, per capita annual total trade, regional energy intensity, industrial structure, and technology progress significantly affect the relation between each per capita emission and per capita GDP deflator, but government corruption can concurrently hinder and promote the environmental quality. This case reflects that in terms of regional environmental governance, the actual administrative efficiency in Heilongjiang Province is still low, and thus it needs to invest the extra opportunity cost to reverse this unfavorable state.</p> |
| <p>EF1040 10:30-10:40</p> | <p>Analysis of Cybersecurity Models Suitable to Apply in an Electoral Process in Ecuador <i>Segundo Moisés MT Toapanta Toapanta, Manuel Agustín MA Aycart Armijos and Luis Enrique LM Mafla Gallegos</i> Salesian Polytechnic University, Ecuador</p> <p>Abstract—Were analyzed different cybersecurity proposals to protect information, such as models, prototypes, approaches, frameworks, algorithms and evaluations. The problem is the lack of application of cybersecurity to electoral processes in Ecuador. The objective is to make an appropriate cybersecurity model to apply in an electoral process in Ecuador. The quantitative, descriptive, deductive reasoning was used to analyze the reference documents. It turned out a Conceptual Cybersecurity Model, a Cybersecurity Algorithm and a General Risk Formula. It was concluded that the model strengthens information security in the electoral process and asset risk assessment prioritizes the attention of vulnerabilities.</p> |
| <p>EF1043 10:40-10:50</p> | <p>A Cyber Environment Approach to Mitigate Vulnerabilities and Threats in an Electoral Process in Ecuador <i>Segundo Moisés MT Toapanta Toapanta, Marjorie MI Isanoa Sinche and Luis Enrique LM Mafla Gallegos</i> Salesian Polytechnic University, Ecuador</p> <p>Abstract—The problems of information security in the cyber environment regarding vulnerabilities and threats in an electoral process is persistent; the use of technology in political activities for popular elections, through electronic or digital voting, implemented in some Latin American countries, its results have not been acceptable; because they have been criticized by politicians and citizens indicating that transparency is needed in the electoral process. The objective is to focus on the cyber environment to present an alternative to mitigate vulnerabilities and threats in</p> |

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| | <p>an electoral process considering the integral aspects, understand the benefits it grants, the expenses involved, the probable risks required. It was used the deductive method and exploratory research to analyze the reference articles. It turned out a prototype of the data record, as an alternative that allows the electronic system to establish security mechanisms with confidentiality, integrity, authentication, authorization, accessibility and availability. It was concluded that to comply with an electronic vote with acceptable results and meeting international standards, it is necessary to invest in adequate technology, train people who will participate in the electoral process and establish security mechanisms that mitigate cyber attacks in their environment.</p> |
| <p>EF1017 10:50-11:00</p> | <p>Design of A Multicriterio Model with A Diffuse Hierarchical Analysis Process - FAHP, for the Selection of Suppliers in a Mobile Cellular Telecommunications Company <i>Leydy Johana Hernández Viveros, Jennifer Catalina Murcia Rodríguez, Danilo Alfonso López Sarmiento</i> Corporación Universitaria Minuto de Dios - UNIMINUTO , Colombia</p> <p>Abstract—The purpose of this article is to socialize ongoing research on appropriate criteria for the selection of suppliers in companies in the telecommunications sector, exposing the design of a multi-criteria model, to obtain a correct and adequate prediction of the best provider depending on the variables and criteria that each company has for the selection. The above is raised, because the selection of suppliers is a problem of multicriteria decision making, because it implies both qualitative and quantitative particularities; suppliers are a very important part of the supply chain of all companies, because they depend on the strengthening of supply management and in turn the selection will depend on criteria beyond the subjective or relationships that are had with the provider</p> <p>The study proposes a descriptive methodology, with a mixed approach (quantitative and qualitative), which begins with sufficient bibliographic review, through the gathering of information with a technical research instrument (survey) to identify the selection criteria that have the companies in the telecommunications sector and finally designing a proposal for a multi-criteria model based on the application of a combination of the multi-criteria tools Hierarchical Analytical Process (AHP) and Diffuse Hierarchical Analytical Process (FAHP) English), for the selection of telecommunications equipment suppliers, considering defining a group of critical factors to evaluate a possible solution of the best and most appropriate alternative.</p> <p>The preliminary results and conclusions are based on the contributions that provide an adequate bibliographic review and the validation of the criteria to be surveyed by suitable personnel, concluding with what the research leads, which is a clear sample that the selection of any type of criteria it takes more and more strength to be at the forefront of global technology.</p> |

Part B

Time: 16:00-17:00

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| <p>EF1038 16:00-16:10</p> | <p>An Approach of Cyberattacks with the Use of Social Networks and Communication Media for Public Organizations of the Ecuador <i>Segundo Moisés MT Toapanta Toapanta, Dhilan DT Torres Tapia and Luis Enrique LM Mafla Gallegos</i> Salesian Polytechnic University, Ecuador</p> <p>Abstract—An analysis was carried out of several cyber-attack methods that use Social Networks and Media as their main resource, as well as their different countermeasures to mitigate the vulnerability and risk of information loss. The main objective is to propose a Model for the Management of Cybersecurity, which can be adopted by public organizations in Ecuador. The deductive method and exploratory research were used to analysis the information of the referenced articles, and also the different data published by the written and spoken press. This research resulted in a cybersecurity Management Model for analyzing the impact of cyberattacks and appropriate measures to mitigate their effect through a risk matrix. It was concluded that the model presented is a viable alternative for maintaining and improving cybersecurity and facing threats and cyberattacks, as well as the control of existing risk in the institution, that compromise information security and integrity.</p> |
| <p>EF1039 16:10-16:20</p> | <p>Cybersecurity Analysis to Determine the Impact on the Social area in Latin America and the Caribbean <i>Segundo Moisés MT Toapanta Toapanta, orge Mario JE Estrella Estrella and Luis Enrique LM Mafla Gallegos</i> Salesian Polytechnic University, Ecuador</p> <p>Abstract—This document presents an introduction to the events that occurred in Latin America and the Caribbean where banks are compromised by cyber-attacks, the same case is also seen in Ecuador where losses from these attacks would amount to \$ 6 trillion by 2021. As an objective we have to provide an analysis of the social impact that cybersecurity has in Latin America and the Caribbean. It was used the deductive method, adopting and generating a set of activities to evaluate the Total Cybersecurity (TC) of cyber systems and / or companies to have a control of the security that is possessed and of the improvements that can be implemented to prevent or combat possible threats or cyber vulnerabilities. It was concluded within Latin America and the Caribbean there is no equity in the development of cybersecurity as in European countries.</p> |
| <p>EF2007 16:20-16:30</p> | <p>The Role of Governmentality in Social Studies <i>Yongpeng Peng</i> Dalian Minzu University, China</p> <p>Abstract—The concept of “governmentality” has been widely used in social science researches over the last two decades; however, there is a lack of review on its application in social studies.</p> |

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| | <p>This research reviews 166 relevant literatures, published between 2006 and 2019. The result shows that Europe has always been the main contributing region to governmentality literature. Governmentality mostly serves as an analytical theory for resolving social issues, but it has not been taken as the object of study. Four levels of application of governmentality are identified, based on keywords analysis. Government governance is the main field of application of governmentality. The dimensions of analysis for governmentality are then identified, including technology, rationality, knowledge, and discourse.</p> |
| <p>EF1041 16:30-16:40</p> | <p>Definition of Parameters to Perform Audit in Cybersecurity for Public One Organization of Ecuador <i>Segundo Moisés MT Toapanta Toapanta, Nahim Peralta Peralta NP Peralta Peralta and Luis Enrique LM Mafla Gallegos</i> Salesian Polytechnic University, Ecuador</p> <p>Abstract—Ecuador's constant technological growth is evident in recent years, great efforts have been devoted to the development of information systems for organizations, but only for the development of systems; unfortunately, there are few security controls or maintenance that have been implemented in those already mentioned. Ecuador has been the target of constant attacks and have been the result of the vulnerability of its information security. This is the consequence of having very poor control of their systems due to the neglect of senior management, reduced costs or simply complete ignorance of the subject by the staff. Auditing helps identify weaknesses in an organization in general or in systems where security is important. Every audit process is linked to a plan, realization and results, but it is thanks to the methodology that they will give us indicators to make changes to the system, that these results have relevance; as the parameters to be evaluated from the system are presented in the system. Our goal was to find key parameters for a correct security assessment against a cyberattack. Methodologies from various sources such as books, recognized standards methodologies, standardized guidance processes, among others were adapted and used. It was concluded that using guide the parameters found in our research helps an organization to have a stable yet secure system against a cyberattack.</p> |
| <p>EF1044 16:40-16:50</p> | <p>Prototype to Mitigate the Risks of the Integrity of Cyberattack Information in Electoral Processes in Latin America <i>Segundo Moisés MT Toapanta Toapanta, Luis LB Briones Peñafiel and Luis Enrique LM Mafla Gallegos</i> Salesian Polytechnic University, Ecuador</p> <p>Abstract—The problems of cyberattacks have been frequent in all areas for several years, the use of technology has become an indispensable element in the environment of the electoral process and its activities to mitigate the risks of information. Above all, if one considers that in a process of this nature, it is fundamental to guarantee the security of the system, since they have become the target of cyberattacks that have generated problems by compromising the integrity of the information necessary for this democratic exercise. The main objective was to provide a prototype to mitigate the risks of the integrity of cyberattack information in electoral processes in Latin America. It was used the deductive method and the exploration research technique were applied</p> |

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| | <p>to study the information of the cited articles. It resulted in a Prototype to mitigate risks of the integrity of cyberattack information, Prototype risk matrix, and Mitigation approach. It was concluded that through the prototype evaluation methods and the risk mitigation process, risk and its value were identified according to the probability of occurrence and impact of cyberattacks, thus classifying them into levels and focusing mitigation by means of security strategies that generate higher priority and protect the integrity of the information before any type, this allows us to feedback and continuously improve the electoral processes.</p> |
| <p>EF1023 16:50-17:00</p> | <p>University-industry Collaboration Ecosystem in China: Internal and External R&D Activities for Educational Innovation and Industrial Products Development <i>Asad Abbas, Samira Hosseini, Anam Fatima and Shuliang Zhao</i> Tecnologico de Monterrey, Mexico</p> <p>Abstract—This research study explores the internal and external R&D activities of university and industry collaboration for educational innovation and industrial product development. We have conducted this study by reviewing secondary literature. The purpose of this research method is to highlight each process of university-industry direct collaboration, which starts from an idea and ends with the successful execution of a collaborative research project. The findings of this study suggest that university-industry (UI) collaboration relies on the university and its research group to propose new and original ideas and on industrial finance to help them successfully execute UI collaborative research. Following this, the research results will be transferred to the industry in accordance with an agreement between the university and industry under given local, national and international intellectual property laws.</p> |

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| Listener 2 | Ali Chaari |
| Listener 3 | Mohammed Muhanna |
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| Listener 5 | Tariam Al yahyai |
| Listener 6 | Lam Vien Cao Ngoc |
| Listener 7 | Donghoon Shin |
| Listener 8 | Dan Brener |
| Listener 9 | Nikki Brener |
| Listener 10 | Mohammad E Almatori |

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