

ICETC 2019
2019 11th International Conference on
Education Technology and Computers

ICDLE 2019
2019 10th International Conference on
Distance Learning and Education

Amsterdam, The Netherlands | October 28-31, 2019

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WELCOME

Dear distinguished delegates,

It is our great honor and pleasure to welcome you to 2019 11th International Conference on Education Technology and Computers (ICETC 2019) and 2019 10th International Conference on Distance Learning and Education (ICDLE 2019) which will be held in Amsterdam, The Netherlands during October 28-31, 2019.

The evaluation of all the papers was performed based on the reports from anonymous reviewers, who are qualified in the field of Education Technology and Computers, Distance Learning and Education. As a result of their hard work, we are pleased to have accepted 83 presentations (including 7 poster presentations and 1 video presentation) from Australia, Austria, Belarus, Brazil, Canada, China, Colombia, Ecuador, Finland, Germany, Greece, Hong Kong, Indonesia, Ireland, Italy, Japan, Malaysia, Mexico, Nigeria, Norway, Pakistan, Peru, Philippines, Poland, Romania, Saudi Arabia, South Africa, South Korea, Sweden, Taiwan, Thailand, Turkey, UK and USA in this program. The presentations are divided into 8 breakout sessions with topics including Mobile Learning and E-Learning, Engineering Education and Application, Computer and Information Engineering, Advanced Teaching Methods and Techniques, Curriculum Design and Teaching, Educational Quality Service and Assessment, Student Ability Innovation and Training, Learning Mode and Method.

A word of special welcome is given to our keynote speakers and invited speakers who are pleased to make contributions to our conference and share their new research ideas with us. They are Prof. Joy Kutaka-Kennedy, National University, USA; Prof. Piet Kommers, University of Twente, The Netherlands; Prof. Betsy J. Bannier, Lake Region State College, USA; Prof. Jowati Juhary, Universiti Pertahanan Nasional Malaysia, Malaysia.

We'd like to express our heartfelt appreciation to our chairs, sponsors, technical program committee members, authors and delegates, who made a lot of efforts and contributions year by year. Thanks to your support and help, we can hold this conference successfully and always keep making progress.

We believe that by this excellent conference, you can get more opportunity for further communication with researchers and practitioners with the common interest in this field. And your suggestions are warmly welcomed for the further development of the conferences in the future. Wish you have a fruitful and memorable experience in Amsterdam, The Netherlands.

We look forward to meeting you again next year!

Yours sincerely,
Conference Chair
Prof. Piet Kommers
University of Twente, The Netherlands

VENUE

[Park Plaza Amsterdam Airport](#)

Address: Melbournestraat 1, Lijnden, Amsterdam Airport Schiphol, 1175 RM, The Netherlands

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- 2 Schiphol Amsterdam Airport
- 3 Amsterdamse Bos
- 4 Matterhorn/Tram 1

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VENUE

Complimentary shuttle bus service is provided by Park Plaza Amsterdam Airport at Amsterdam Airport Schiphol.

Departure times from the airport:

05:30	09:30	13:30	17:30	21:30
06:00	10:00	14:00	18:00	22:00
06:30	10:30	14:30	18:30	22:30
07:00	11:00	15:00	19:00	23:00
07:30	11:30	15:30	19:30	23:30
08:00	12:00	16:00	20:00	00:00
08:30	12:30	16:30	20:30	
09:00	13:00	17:00	21:00	

The shuttle bus from the airport will depart every half an hour between 05:30am to 12:00pm. Please follow the signs 'hotel pick-up' to be directed to the correct shuttle destination.

Departure times from the hotel:

05:15	09:45	13:45	17:45	21:45
06:15	10:15	14:15	18:15	22:15
06:45	10:45	14:45	18:45	22:45
07:15	11:15	15:15	19:15	23:15
07:45	11:45	15:45	19:45	23:45
08:15	12:15	16:15	20:15	
08:45	12:45	16:45	20:45	
09:15	13:15	17:15	21:15	

The Shuttle Bus will be awaiting in front of the hotel's main entrance.



Weather

High Temperature: 14°C

Low Temperature: 7°C



Time Zone: UTC+1



Currency: EUR



Important Phone Numbers

Police, Ambulance and Fire: 112

Police Station: +31-0900-8844

Tour Information: +31 20 702 6000

DETAILED AGENDA

[October 28, 2019]

10:00-17:00



Registration & Materials Collection



In the hotel lobby



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.



Tips for Participants

- ✧ Your punctual arrival and active involvement in each session will be highly appreciated.
- ✧ The listeners are welcome to register at any working time during the conference.
- ✧ Get your presentation PPT files prepared.
- ✧ Regular oral presentation: 15 minutes (including Q&A).
- ✧ Laptop (with MS-Office & Adobe Reader), projector & screen, laser pointer will be provided by the conference organizer.
- ✧ For personal and property safety, only the person wearing the name tag could enter the conference rooms.
- ✧ Please take care of your belongs all the time. The organizer shall not assume any responsibility for the loss of personal property of the participants.

DETAILED AGENDA

[October 29, 2019-Tuesday]

9:00-12:00, Morning

Chaired by Dr. Fang Lou, University of Hertfordshire, UK



Opening & Keynote Speeches & Invited Speeches & Poster Presentations



Sky Meeting Room 6 (3/F)

9:00-9:10	Opening	Prof. Piet Kommers University of Twente, The Netherlands
9:10-9:50	Keynote Speech I	Prof. Piet Kommers University of Twente, The Netherlands Speech Title: Preparing Teachers for the Coming Educational Evolution
9:50-10:20		 Coffee Break & Group Photo 
	Poster Presentations	CP3009, CP3015, CP3023, CP3052, CP3079, CP3115, CP3117, CP4011
10:20-11:00	Keynote Speech II	Prof. Joy Kutaka-Kennedy National University, USA Speech Title: A Glimpse of Future Technological Innovations in Education
11:00-11:30	Invited Speech I	Prof. Betsy J. Bannier Lake Region State College, USA Speech Title: Using the Cosmos to Cultivate Curiosity Among College Students
11:30-12:00	Invited Speech II	Prof. Jowati Juhary Universiti Pertahanan Nasional Malaysia, Malaysia Speech Title: Perceptions of Students: Blended Learning for IR4.0

Lunch @ Restaurant Romeo (G/F)

<12:00-13:30>

Note: Lunch coupon is needed for entering the restaurant.

DETAILED AGENDA

[October 29, 2019-Tuesday]

13:30-18:30, Afternoon

 **Parallel Sessions**

 Sky Meeting Room 2 (3/F)	13:30-15:45	Session I - Mobile Learning and E-Learning 9 Presentations CP2007, CP3056, CP3075, CP2022, CP1001-A, CP2002-A, CP3010, CP3017, CP3080
	15:45-16:00	 Coffee Break
	16:00-18:15	Session IV - Advanced Teaching Methods and Techniques 9 Presentations CP3068, CP3074, CP3066, CP3098, CP3102-A, CP3103, CP3119, CP3106-A, CP1010
 Sky Meeting Room 5 (3/F)	13:30-15:00	Session II - Engineering Education and Application 6 Presentations CP4007, CP3126, CP3132-A, CP3088, CP3114, CP3089
	15:45-16:00	 Coffee Break
	16:00-18:30	Session V - Curriculum Design and Teaching 10 Presentations CP1014, CP3029, CP3044, CP3050, CP4004, CP3053, CP3055-A, CP3064, CP3124, CP3107-A
 Sky Meeting Room 6 (3/F)	13:30-15:45	Session III - Computer and Information Engineering 9 Presentations CP1012, CP3019, CP3042, CP3057, CP3086, CP3091, CP3059, CP3125, CP3067
	15:45-16:00	 Coffee Break
	16:00-18:30	Session VI - Educational Quality Service and Assessment 10 Presentations CP1015, CP3021, CP3041, CP3014, CP3039, CP3081, CP3040, CP3108, CP3020, CP3100

Dinner @ Restaurant Romeo (G/F)

<18:40-20:30>

Note: Dinner coupon is needed for entering the restaurant.

DETAILED AGENDA

[October 30, 2019-Wednesday]

9:30-12:15, Morning



Parallel Sessions

 Sky Meeting Room 5 (3/F)	9:30-12:15	Session VII - Student Ability Innovation and Training 11 Presentations CP3027-A, CP1009, CP3022, CP3047, CP3083, CP3084, CP3096-A, CP3110, CP3113, CP4006, CP1031-A
 Sky Meeting Room 6 (3/F)	9:30-12:00	Session VIII - Learning Mode and Method 10 Presentations CP3072, CP3073, CP3013, CP3030, CP3063-A, CP3065, CP3095-A, CP3121, CP3077, CP1002

Lunch @ Restaurant Romeo (G/F)

<12:15-13:30>

Note: Lunch coupon is needed for entering the restaurant.

DETAILED AGENDA

[October 31, 2019-Thursday]

 Social Program

* **Assembly Time:** 08:20

Assembly Point: Lobby of Park Plaza Amsterdam Airport

* **Overview**



The Zaanse Schans is a residential area in which the 18th and 19th centuries are brought to life. Stroll past the bakery museum and enjoy the smell of fresh cookies, or take a look at the warehouse where clogs are made. You should be sure not to miss the cheese factory, pewter foundry and the various windmills. The Zaanse Schans is a unique part of the Netherlands, full of wooden houses, mills, barns and workshops.

Giethoorn is a town in the province of Overijssel, Netherlands with a population of 2,620. It is located in the municipality of Steenwijkerland, about 5 km southwest of Steenwijk. Giethoorn is often referred to as "Little Venice" or the "Venice of the Netherlands". Giethoorn used to be a pedestrian precinct, but nowadays exceptions are made. It became locally famous, especially after 1958, when the Dutch film maker Bert Haanstra made his famous comedy Fanfare there. In the old part of the village, there were no roads (though a cycling path was eventually added), and all transport was done by water over one of the many canals.

* **Included**

- Bottled water, Lunch at Giethoorn
- Air-conditioned vehicle
- Private transportation

* **Not Included**

- Personal expenses such as souvenirs

* **Note**

- This social program is optional and chargeable.
- If you are interested, please give your feedback **before October 10**. If you miss this date, we can't accept your request anymore.

KEYNOTE SPEAKER



Prof. Piet Kommers

University of Twente, The Netherlands

Dr. Piet Kommers is an early pioneer in media for cognitive- and social support. His doctoral research explored methods for hypertext and concept mapping in learning. Since 1982 he developed educational technology for teacher training. His main thesis is that technology is catalytic for human ambition and awareness. His main function is associate professor in the University in Twente, The Netherlands and adjunct/visiting professor in various countries. He taught more than fifteen bachelor-, master- and PhD courses and supervised more than 30 PhD students. He instigated and coordinated the NATO Advanced Research Workshop on Cognitive Technologies in 1990 and a large series of Joint European Research Projects in: authoring multimedia, web-based learning, teacher education, virtual 3d worlds, constructivist learning, social media, web-based communities and international student exchange. UNESCO awarded his work in ICT for Education in Eastern Europe with the title of Honorary Professor. The Capital Normal University in Beijing awarded his work with the title of Honorary Doctor. He is member of advisory boards in ministries of education and academia of sciences in Singapore, Finland and Russia. Piet Kommers is the initiator of the international journal for web-based communities and overall chair of the IADIS conferences on societal applications of ICT. Since the late nineties he gave more than 40 invited and keynote lectures at main conferences in the fields of education, media and communication. His books and journal articles address the social and intellectual transformations at each transition from “traditional” into the “new” media. Instead of regarding media as extrapolating, supplanting, vicarious or even disruptive, Piet’s view is that new media elicit and seduce both individuals and organizations to reconsider human nature and challenge existential awareness at that very moment. His workshop templates and experiences have been implemented into the UNESCO IITE reports, policy briefings and Master Course. The books and journal articles of Piet Kommers reach the level of 5012 citations and the h-index of 30. He was recently nominated by seventeen countries for the prestigious 2017 UNESCO King Hamad Bin Isa Al-Khalifa Prize for the Use of Information and Communication Technologies (ICTs) in Education.

Speech Title--- Preparing Teachers for the Coming Educational Evolution

Speech Abstract---As ICT applications like social media, big data and analytics recently gained momentum, the question emerges on how to find the right balance between traditional school curricula and the new strategic problem solving skills and attitudes in regular education. This lecture will clarify how ICT and new teaching methods already got interwoven and only need to be adjusted to didactic contexts as established by the teacher. Dominant factors are the further globalising world citizenship, the 24 hour economy and the need for 21st century skills. It implies that also in regular education the pedagogy shifts from an instructional into a constructivist paradigm: students face more and more challenges to personalise learning and prepare for entrepreneurship rather than prepare for existing jobs. Three ongoing projects will be highlighted and explained in terms of the next decade educational evolution:

1.The IV4J Project: Its goal is to give the trainers or educators, the right tools to create the right environment for their students to thrive both in the classroom, but more importantly, on the labour market, after completing their classes. <http://iv4j.eu/>

2.The MakeITReal project was presented at the Engino 2018 Conference “STEM & Robotics in Education’ on March 10, 2018. ‘A new,open model: The pedagogical value of STEM & Robotics in Education’ is focussed on 3D printing for enhancing learners' spatial thinking and imagination. Its effect is targeted at those students who have a weaker capacity for abstract thinking and memorization. <http://makeitreal.info/>

KEYNOTE SPEAKER

3.The IRNet project targets the growing trend towards international higher education. While its proponents assert that the added value of multicultural attitude, skills and mindset will help in future jobs, the question remains if and how these widening experiences contribute to the learning outcomes through the existing formal curricula. <http://www.irnet.us.edu.pl/>

The lecture leads to answering and discussing the posed title in how far digital pedagogies supplant, reinforce or just decorate the educational establishment in the coming decade.

KEYNOTE SPEAKER



Prof. Joy Kutaka-Kennedy

National University, USA

Dr. Joy Kutaka-Kennedy has served in the Department of Special Education at Sanford College of Education since 2003, almost 15 years. She earned her doctorate from the University of San Francisco in Curriculum and Instruction with a specialization in Mild/Moderate Special Education, completing her dissertation titled “Inclusion in secondary general education classes: What do students with Emotional and Behavioral Disorders think?” Prior to becoming an academic, she honed her teaching skills and K-12 expertise through 18 years of teaching in grades pre-K to 12 in general, special, gifted and at-risk education. She began in self-contained general education multiple subjects classrooms and single subject classrooms in English/Language Arts, World History, Biology, and Physics. She also taught a weekly pull-out of gifted students for a semester and a self-contained 4/5 class for students identified as highly gifted for a year, plus at-risk students in a court/community school setting. She entered special education and taught high school students with emotional and behavioral disorders and early childhood special education students at the county office level. She presents at numerous national and international conferences, often as a keynote speaker, on topics such as the impact of augmented and virtual reality on learning, online instruction for the 21st century, generational differences in educational technology preferences, online supervision of online K-12 teaching, online mentoring, and online course design to enhance creativity and collaboration. Her current responsibilities include course design and oversight, field work supervision, and mentoring new faculty in higher education. She serves as the Treasurer of the California Association of Professors of Special Education, completes program reviews for national accreditation, and performs editorial reviews for professional journals.

Speech Title--- A Glimpse of Future Technological Innovations in Education

Speech Abstract---Since the dawn of human history, we have created technological innovations to advance our survival and develop our societies. Our imagination was a crucial capacity that differentiated us from other species and eventually led us to dominate the planet. We used the spoken word to teach us how we began, how the world came to be, and how we should behave in the cosmos. We imagined the ideal society with our roles and obligations through these stories. Along with the oral storytelling we always had artists who interpreted our stories through visual media, developing images to save our stories for posterity, for future generations. These technological innovations later evolved into written languages in some societies eventually leading to the beautiful illustrated manuscripts of the Middle Ages. Gutenberg assembled the printing press which further expanded the education of the population at large. Previously, literacy had been restricted to the religious elite in monasteries who painstakingly copied Bibles by hand. With the development and distribution of written language, our ability to cross the boundaries of time and space expanded exponentially, further capturing and spreading these stories of human history, educating the next generation. We multiplied and democratized our knowledge base through connecting with each other, sharing ideas, and conducting research to discover the nature of reality. Beyond visual representations of art and then later photography, we also developed musical language and a multiplicity of musical instruments and forms which have spread around the world. Combining the auditory, visual and written media, we developed black and white motion pictures, then “talkies”, films, and later videos which led to digital media in oral, written and visual forms. Our creativity drove all of these creations and innovations. How can we harness this creativity to make learning more meaningful and memorable on our college classrooms? These latest technological innovations have mutated into the latest Augmented Reality and Virtual Reality media experiences. How will these new forms of technological innovation educate students of the present and the future? How can higher education adapt to these changes?

INVITED SPEAKER



Prof. Betsy J. Bannier

Lake Region State College, USA

Betsy Bannier is a tenured Professor of Chemistry at Lake Region State College in North Dakota, USA. She holds a PhD in Adult & Continuing Education with an emphasis in online science education from the University of Wisconsin-Milwaukee, as well as an MS in analytical chemistry from the University of North Dakota. She has over twenty years of experience teaching in higher education, serves on several national and international review boards, and is widely published in the fields of distance education and student motivation. She serves as a Solar System Ambassador volunteer through a program coordinated by NASA's Jet Propulsion Laboratory. Her current speaking engagements and research interests include teaching at the intersection of space science and chemistry, and transnational education trends.

Speech Title--- **Using the Cosmos to Cultivate Curiosity among College Students**

Speech Abstract--- Research shows that creating a culture of curiosity is an effective way of helping students strengthen and persist in their higher education experience. The Universe offers literally infinite opportunities to build exciting, creative connections to and between a wide variety of education disciplines. From stars and chemistry to moons and physics, from satellites and the humanities to deep space telescopes, black holes, and the arts, we'll explore how the cosmos might inspire us to become more creative educators and also how the cosmos might inspire our students to become more engaged learners.

INVITED SPEAKER



Prof. Jowati Juhary

Universiti Pertahanan Nasional Malaysia, Malaysia

Jowati Juhary received her PhD in Governance and Development from Monash University, Melbourne, Australia, and her first and second degrees from Universiti Kebangsaan Malaysia, Bangi Selangor Malaysia. Her research interests include higher education, military pedagogy and educational technology, particularly e-learning and simulation for language studies. She is currently involved in two main research projects, military pedagogy and Industrial Revolution 4.0. She has over 16 years teaching

experience, and was the former Director of the Language Center at the National Defence University of Malaysia. She is currently heading the UPNM Press, the publication house of the Defense University.

Speech Title--- Perceptions of Students: Blended Learning for IR4.0

Speech Abstract---Industrial Revolution 4.0 (IR4.0) is the current key term today that affects various facets of humans' life. As society struggles to grasp its impact, academics are responsible to prepare the future workers, who must be able to cope with IR4.0 and beyond. This paper attempts to gauge students' perceptions of blended learning. At the same time, the author wants to investigate whether they perceive blended learning as a platform to help them face IR4.0 after graduation. A class taught by the author was observed for two semesters, and at the end of the second semester, all students in the class were asked five main questions on blended learning and their readiness to face IR4.0. Preliminary findings suggest that, firstly, students were not exactly comfortable learning in a blended learning environment and with flipped classroom as one of its strategies. Secondly, the majority of the respondents were unsure of what IR4.0 is, and yet they were confident that they would be able to face IR4.0. The author argues that much is still needed to be done in order to embrace IR4.0, despite the abundance of preparation to face it at various levels.

SESSION I

October 29, 2019

Session I

[Mobile Learning and E-Learning]

 **13:30-15:45**

 **Sky Meeting Room 2 (3/F)**

Chaired by Prof. Kazuyoshi Yoshino

Kanagawa Institute of Technology, Japan

9 Presentations—

CP2007, CP3056, CP3075, CP2022, CP1001-A, CP2002-A, CP3010, C03017, CP3080

***Note:**

- Please arrive 30 minutes ahead of the sessions to prepare and test your PowerPoint.
- Certificate of Presentation 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 at the dinner banquet.

SESSION I

<p>CP2007 13:30-13:45</p>	<p>A study on the learning satisfaction and work utilization of the teacher safety e-learning Mi Hwa Song and Tea In Han Presenter: Tea In Han Korea National Open University, South Korea</p> <p>Abstract-Study about teacher safety education must be carried out in a concrete and statistical manner for all accidents surrounding the school. The purpose of this study is to identify the changes in learning satisfaction and job utilization of e-learning based teacher safety education that they perceive, and to utilize it more effectively in real life and work for the safety of school. The results of this study suggest the following conclusions. First, it is necessary to develop more specific and systematic safety education programs and curriculum to improve the quality level of e-learning based teacher safety education and learning satisfaction and to utilize effective work. Second, because there is a difference between the satisfaction of learning and the utilization of work according to the work area and work experience of the teacher, various and detailed programs should be developed and continuously provided. Third, it is necessary to expand the research result for comparison between classroom safety education and safety e-learning so that the evaluation about the effectiveness of learning satisfaction and job utilization. Fourth, safety education of school encountered with situation that most of the teachers learn safety lecture through distance education, and they teach it to the students by the walk-through safety education. So teacher safety education should include experienced and hand on subdivided courses because teacher is responsible for student safety education.</p>
<p>CP3056 13:45-14:00</p>	<p>Exploring pedagogy enhancement with eLearning for 21st century language education Virginia Kwok Presenter: Virginia Kwok The Chinese University of Hong Kong, Hong Kong</p> <p>Abstract-With increasing globalization, English Language Teaching (ELT) materials are in need of renewal so as to help learners meet the needs of the twenty-first century. Not only linguistic skills but also Intercultural Communicative Competence (ICC) (Byram, 1997) have to be explicitly instructed. In this paper, I argue that from elementary level through to advanced level of language learning, textbooks and teaching methodology often demonstrate a lack of ICC elements. Current resources are inadequate to prepare students to meet the complex and various challenges that learners will face. In view of this, after analyzing certain prototypical materials and practices in Hong Kong as well as some Asian contexts, adaptations to the materials and pedagogy are recommended. With the incorporation of Web 2.0 resources and critical reflection of teachers' role as well as technology, it is hoped that teaching professionals can rethink about the best ways to provide learners with new cultural knowledge and linguistic skills to cope with a rapidly changing world where English is taught and learnt as an international language.</p>
<p>CP3075 14:00-14:15</p>	<p>ALDO: An innovative digital framework for active e-learning Ilaria Bartolini and Andrea Di Luzio Presenter: Andrea Di Luzio University of Bologna, Italy</p> <p>Abstract-In this paper, we propose ALDO (Active e-Learning by DOing), a novel, advanced digital</p>

SESSION I

	<p>framework supporting integrated facilities for effective, active e-Learning. The ALDO framework includes an active repository for collecting/sharing relevant materials, collaborative editing services for enriching so collected “raw” materials, and advanced data visualization tools (e.g., interactive maps, graphs, and timelines) to explore the spatial and temporal dimension of specific data contexts. Although the present research was carried out within the European Horizon 2020 Project DETECT (Detecting Transcultural Identity in European Popular Crime Narratives), focusing on the specific data context of European crime narrative, the generality of ALDO technological framework makes it suitable for any type of study/teaching activity. More in details, ALDO consists of a multi-functional digital infrastructure (back-end) for the integration of collaborative editing and e-Learning activities in formal and informal educational contexts. The platform supports effective services for collecting, sharing, retrieving, and analyzing data, together with advanced online collaboration tools, an e-Learning platform and advanced data visualization tools, all made available to teachers/students through a dedicated Web portal (front-end). The design and creation of above tools and services for teaching, together with their uses, are presented and discussed through a series of real examples taken from DETECT.</p>
<p>CP2022 14:15-14:30</p>	<p>Perceptions and experiences of mobile-assisted language learning for IELTS preparation: A case study of Indonesian learners Soulaya Lestary Presenter: Soulaya Lestary University of Bristol, UK</p> <p>Abstract-This qualitative case study investigated English as Foreign Language (EFL) learners’ perception and experiences of using mobile computing devices to prepare themselves for IELTS test. In particular, this study was conducted to explore Indonesian EFL learners’ perceived advantages and challenges of IELTS mobile learning adoptions, and their self-directed mobile learning strategies as well as what extent mobile learning support their IELTS learning.</p> <p>Data were collected from ten participants through mostly face-to-face semi-structured in-depth interviews and further analysed using thematic analysis of deductive and inductive approach. The inductive approach followed in the Framework for the Rational Analysis of Mobile Education (FRAME). The findings revealed that there are some correlations between the advantages and the challenges of IELTS mobile learning adoptions. This study also found that the learning strategies carried out during the learner’s IELTS preparation were mostly related to motivation in which it drove them to expand some efforts towards their IELTS practices. Another key finding revealed that the learners’ viewed the use of mobile technological devices throughout their IELTS preparation had supported their experience to a great extent.</p> <p>Despite some limitations of this study, the finding has given some implications for stakeholders and further study. E-learning companies related to language learning and online IELTS preparation programs should consider the learner’s difficulties in obtaining real-time feedback, particularly for speaking and writing. Additionally, further research on motivation, attitude, and behavior in IELTS mobile learning are recommended.</p>
	<p>Student motivation and student perception in mobile learning (M-learning) Meltem Eryilmaz Presenter: Meltem Eryilmaz</p>

SESSION I

<p>CP1001-A 14:30-14:45</p>	<p style="text-align: center;">Atilim University, Turkey</p> <p>Abstract-Mobile learning (M-learning) is the learning process that takes place through time and space-independent content interaction or social interaction using mobile tools. With the widespread use of computers and the Internet, interest in mobile education and distance education programs has increased. One of the most important reasons for this is that the individual is free from time and place. Thanks to mobile technologies, easy accessibility and portability, learning activities such as practice and application can be carried out of the classroom environment. It is possible to make use of palmtop, handheld computers, mobile phones and increasingly popular tablet computers in learning-teaching processes. It is a great ease and freedom for individuals to start the learning process at any time and place and to intervene in the process.</p> <p>Mobile learning; it provides access to the content that will meet the learning needs without any time and place limit. What makes M-learning more advantageous than e-learning is the widespread use of mobile devices today. M-learning is a distance learning model where learning is carried out with mobile tools. However, m-learning is a form of learning that allows access to content and communicates with other learners anytime and anywhere. M-learning environments have shown that education is possible without being in a fixed place with mobile devices. M-learning environments have shown that education is possible without being in a fixed place with mobile devices. M-learning is similar to e-learning in terms of being independent of time and place, providing equal opportunities in education and being student-centered. In this research, the effects of using the mobile devices such as tablets and mobile phones on the students' perceptions and motivations were studied.</p> <p>In the first 7 weeks of the selected course, the students received a traditional education totally 4 hours a week (2 hours in class and 2 hours in lab). After the 8th week, students were asked to use their mobile devices both inside and outside the classroom. Additionally traditional course hours, the students were able to connect to the virtual lab environment where they could practice using their mobile devices at any time. The effects of the students 'sense of satisfaction and the use of the mobile learning environment on the students' perceptions were examined with the help of the scale and questionnaire applications conducted in the 7th and 15th weeks. It is observed that M-learning has a positive effect on students' perception and motivation.</p>
<p>CP2002-A 14:45-15:00</p>	<p style="text-align: center;">Re-imagining mobile learning Sylvie L. F. Richards Presenter: Sylvie L. F. Richards The City University of New York, USA</p> <p>Abstract-When Steve Jobs re-envisioned the phone by giving the world the iPhone, he also re-engineered the way that content is delivered and the way that people learn on ubiquitous devices. The smaller screens and the app technologies of these mobile devices invite a rethinking and refashioning of educational content.</p> <p>Mobile learning presents some unique challenges. Among the design challenges are the following: deciding what constitutes a good design for a learning module; deciding the appropriateness of integrating social networking components into the learning module; deciding how to assess the educational validity of a learning module; and predicting correctly</p>

SESSION I

	<p>the learning characteristics of individual learners, especially the special needs learner. This paper explores strategies for effective design of mobile learning environments, and looks at innovative ways in which instructors than present educational content to students who are using rapidly changing technologies to consume that content. The presentation is designed for those who are new to instructional design in the mobile learning environment.</p>
<p>CP3010 15:00-15:15</p>	<p style="text-align: center;">Is StackOverflow an effective complement to gaining practical knowledge compared to traditional computer science learning? Pierpaolo Dondio and Suha Shaheen Presenter: Suha Shaheen Technological University Dublin, Ireland</p> <p>Abstract-In this paper, a method is proposed to assist computer science lecturers in including StackOverflow content in their teaching practice. StackOverflow is a very popular Q&A website about computer programming accessed by approximately 21 million professional developers and university-level students. The primary purpose reported in this paper is to assess the impact of using the StackOverflow Q&A resource as an add-in supplement to enhance students' learning achievements. The study sample consisted of 38 undergraduate students who enrolled in a database module. Students were divided in control and experimental group. Pre-tests and post-tests were conducted with both groups in the chosen subject. A comparison was made between the treatment group, which used StackOverflow Q&A as a tutorial tool, and the control group, which studied the same topic using a traditional learning format (set of printed exercises as well as text book examples). Our results show how both the experimental group and the control group significantly improved their performance in the post-test. While the experimental group improved their performance more than the control group, the gap was not significant. The results enable it to conclude that StackOverflow material was at least as effective as the traditional material. The finding may be useful in offering new perspectives towards computer science pedagogy that will provide students with more authentic practice to prepare them for their future careers.</p>
<p>CP3017 15:15-15:30</p>	<p style="text-align: center;">A comparative study of the interaction features of barrage and forum in social learning course Xin An, Xue Gong, Rongchi Zhao, Qiuyu Chen, Ning Ma Presenter: Xin An Beijing Normal University, China</p> <p>Abstract-Forum as an effective way for learners and instructors to communicate has been widely used in online learning, but there are still some unsolved problems in online learning, such as loneliness and lack of motivation. With the development of the technology of barrage, some teaching videos try to add the barrage function. As a virtual synchronous interaction way based on situation, interaction on barrage is different from the traditional online discussion and question-answering areas. In this paper, the content analysis method is used to analyze a Japanese teaching course on Bilibili website. It is found that there were differences in the number, length, interactive objects and interactive content between barrage and forum. This conclusion provides some valuable ideas for solving the problems of loneliness and lack of motivation in distance learning.</p>
	<p>Leveraging smartwatches to estimate students' perceived difficulty and interest in online video</p>

SESSION I

<p>CP3080 15:30-15:45</p>	<p>lectures Jinhan Choi, Jeongyun Han, Woochang Hyun, Hyunchul Lim, Sun Young Huh, SoHyun Park and Bongwon Suh Presenter: Jeongyun Han Seoul National University, South Korea</p> <p>Abstract-Online videos have become a popular medium for delivering educational materials. Analyzing video interaction log can provide valuable educational insights. However, for small-sized online courses, due to the small size of samples, analyzing online log is often not enough for modeling students' learning behaviors. In this study, we aim to explore the feasibility of utilizing commercial smartwatches to augment building of such models. We collected online video interaction log as well as physiological data from smartwatches and built models to estimate the perceived difficulty and interest of students while watching online video lectures. The results show that smartwatch data could significantly improve the amount of explained variance in their perceived difficulty and interest by 100% and 64% respectively. We hope the result could inform the application of a smartwatch for students' in online video learning.</p>
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Coffee Break

<15:45-16:00>

SESSION II

October 29, 2019

Session II

[Engineering Education and Application]

🕒 **13:30-15:00**

📍 **Sky Meeting Room 5 (3/F)**

Chaired by Assoc. Prof. Alex Vakaloudis

Cork Institute of Technology, Ireland

6 Presentations—

CP4007, CP3126, CP3132-A, CP3088, CP3114, CP3089

***Note:**

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SESSION II

<p>CP4007 13:30-13:45</p>	<p>Combining teaching with scientific research to solve the problem of ship satellite communication occlusion ZHAO Honghua, XIE Jun, LI Jie Presenter: ZHAO Honghua Army Engineering University of PLA, China</p> <p>Abstract-By combining the heuristic method of theory teaching with the practice of scientific research, this paper proposes an algorithm for calculating the direction angle of the mast and predicting the occlusion path according to the position of the ship and the path of the ship. This method can be based on the position of the ship. The direction angle range of satellite communication occlusion is quickly calculated. According to this range, the ship can avoid occlusion by adjusting the direction angle of the ship. At the same time, the method can calculate the specific path of satellite communication occlusion according to the ship's course, which can be prepared for satellite communication occlusion in advance.</p>
<p>CP3126 13:45-14:00</p>	<p>Recording of touch sensing using optical motion capture system Yasuyuki Murai, Hisayuki Tatsumi and Masahiro Miyakawa Presenter: Yasuyuki Murai Nihon Pharmaceutical University, Japan</p> <p>Abstract-In this research, we clarify cognitive process of figure and shape of the visually impaired. We take motion capture of finger position when touch sensing tactile picture, acquire it as coordinate data of fingertip, and quantitatively analyze and evaluate touch sensing. Detecting general features of touch-sensing by simplifying the touch sensing operation by using combinations of basic figures such as squares and circles for touch sensing tactile pictures.</p>
<p>CP3132-A 14:00-14:15</p>	<p>Iterative design using sketch for ideation and development of customized item Hanafizan Hussain Presenter: Hanafizan Hussain Multimedia University, Malaysia</p> <p>Abstract-This study will look into using visualization tool for ideation and development of the customized item or handmade item. This project is using the iterative design approach when describing the idea for the content given. Sketch has been applied as one of the visualized tools that can be enhanced the idea and development of the prototype product. The output of generating the idea has been sketch with the minimum of two design based on the content and specialty on this project. Then the process of the development from the sketch has been implemented as prototype product. For the finalized of the product has been tested on the showcase event whereby the observation data has been gathered towards the participants who visit the booth of prototype product. Thus this will enhance the iterative process for the next cycle of development of the ideation.</p>
<p>CP3088 14:15-14:30</p>	<p>Multi-user virtual training assistant for maintenance on energized medium-voltage lines Erika F. Moreno, Evelyn E. Pacheco, Víctor H. Andaluz and Álvaro S. Mullo Presenter: Evelyn E. Pacheco Universidad de las Fuerzas Armadas ESPE, Ecuador</p>

SESSION II

	<p>Abstract-The article proposes the implementation of a virtual multi-user tool applied in the field of Electromechanical engineering with the aim of strengthening the training and theoretical-practical training of electrical maintenance personnel of energized lines. The system consists of the implementation of a training area in which safety regulations and protocols applied to perform medium voltage maneuvers are known, in which you can take guided trainings, specific practices of maintenance of energized lines and evaluations of the collaborative maneuvers, which allows for greater immersion and interaction during the teaching-learning process, optimizing training time, resources and infrastructure to guarantee the safety of the operator and his work group. The system allows the selection of the training room, as well as the area in which the maintenance maneuvers will be carried out. At the end of the article we present the results of a usability test of the proposed tool, applied to teachers and students, in order to feedback the application.</p>
<p>CP3114 14:30-14:45</p>	<p>Workshop for staffs of museums and aquariums to learn how sensory impaired visitors feel via experiences Makoto Kobayashi, Manabi Miyagi, Daisuke Wakatsuki, Nobuko Kato and Miki Namatame Presenter: Makoto Kobayashi Tsukuba University of Technology, Japan</p> <p>Abstract-Even these days, visually impaired and deaf and hard of hearing people might encounter difficulties when they visit cultural facilities like museums or aquariums. Improving translation infrastructure or introducing a new IT system would be effective to solve this problem; however, this is hard for local facilities that do not have much budget. In the light of this background, our team thought that a workshop program for staff members of these facilities is basic but is a practical solution. Then, we tried to conduct a workshop collaborating with Ibaraki prefecture, Japan. The workshop mainly focused on the experiences of how these impaired people feel when they receive explanations in cultural facilities. Participants touched tactile material while wearing an eye-mask, listened to a lecture with earphones that produce multi-talker noise, etc. After the workshop, they were required to answer several questionnaires and make comments. The results show that the participants were satisfied with the workshop program, felt they needed more time to acquire information, and would like to recommend the learning experience to their colleagues. The extra comments show that they were motivated to acquire more knowledge about impaired people and practical ways to treat and support sensory-impaired visitors.</p>
<p>CP3089 14:45-15:00</p>	<p>Multi-user system for virtual interaction of a pasteurizer plant Alex P. Porras, Carlos R. Solis, Víctor H. Andaluz, and Jorge S. Sánchez Presenter: Carlos R. Solis Universidad de las Fuerzas Armadas ESPE, Ecuador</p> <p>Abstract-This article presents the development of a virtual Multi-user system of an industrial process, of a pasteurizing plant. The system will have a realistic and intuitive environment, in order to train and train operators in tasks of visualization, monitoring and control, through immersion and interaction with the devices and instrumentation present in the industrial process. The development of the virtual environment is carried out by means of CAD design software for the modeling of all the elements together with the Unity 3D graphic engine, in</p>

SESSION II

	<p>addition to the MATLAB tool that provides information on the simulation of the process, while virtual reality devices are used for immersion. The characteristic of Multi-user is given by the creation of a server which synchronizes and allows the exchange of information between several users at the same time. The experimental tests allow the operator to interact with the virtual environment and acquire monitoring and control skills with the different stages of pasteurization of the dairy industry without risks and labor problems.</p>
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Coffee Break

<15:45-16:00>

SESSION III

October 29, 2019

Session III

[Computer and Information Engineering]

🕒 **13:30-15:45**

📍 **Sky Meeting Room 6 (3/F)**

Chaired by Prof. Esma Aimeur

University of Montreal, Canada

9 Presentations—

CP1012, CP3019, CP3042, CP3057, CP3086, CP3091, CP3059, CP3125, CP3067

***Note:**

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<p>CP1012 13:30-13:45</p>	<p>The Development of DT-NB hybrid algorithms for classifying some defective dataset types for software quality prediction Kattiya T. Yangyuen and Vichuda Rattanapian Presenter: Kattiya Tawsopar Yangyuen Rattana Bundit University, Thailand</p> <p>Abstract-This research is the presenting the development of hybrid algorithms that is called DT-NB or Decision Tree – Naïve Bayesian to predict about the software quality. Besides, it can develop the new technique of data mining for software industry or the current software engineering. Then, these techniques to make the comparison are Decision Tree, Rule-Based and Naïve Bayesian. Similarly, according to the analysis result of making the comparison for quality planning, it was found that the technique DT-NB had the correctness result of 96 percent. Additionally, it was found that according to the analysis result of making comparison for quality assurance, the technique of DT-NB had the correctness result with 76 percent. On the same way, according to the result analysis of making comparison of quality control, it was found that the technique of DT-NB had the correctness result of 92 percent.</p>
<p>CP3019 13:45-14:00</p>	<p>Learning local part motion representation for skeleton-based action recognition Zhen Qin, Yang Zhang and Zhiguang Qin Presenter: Zhen Qin University of Electronic Science and Technology of China, China</p> <p>Abstract-Skeleton-based action human recognition has drawn increasing attentions due to its properties of robustness and conciseness, while studies in recently years mostly have focused on extracting global motion features of skeleton but ignored the correlation among joints of local parts of skeleton. In this paper, we proposed a multi-stream network model based on local part joints motion features, our model focus on features extraction of local part joint motion and effect of fusion method on action recognition, utilizing LSTM and CNN structure a new network unit to grasp spatio-temporal information of joints in skeleton sequences. In order to explore distinctive motion modality of skeletal part, multi-stream mode is adopted and conducting effective recognition with weighted-score fusion. We evaluated our method on the NTU-RGB+D dataset, our result demonstrate a comparable performance of the proposed model in human action recognition.</p>
<p>CP3042 14:00-14:15</p>	<p>The impact of video-vignettes to enhance the financial literacy level of Ecuadorian university students Silvia Mariela Méndez Prado, Patricia Everaert, Martin Valcke Presenter: Silvia Mariela Méndez Prado ESPOL Polytechnic University, Ecuador</p> <p>Abstract-An intervention of three sessions with video vignettes has been applied to measure the impact of this kind of visual tools in the financial literacy (FL) levels of the participants. The intervention builds on video animated response-based simulations. The house, car and pension plan choosing as the key financial decisions (KFD) are the focus of this research. The content of the videos was designed with the related case format, where the participants have been involved in a story reacting with the question-answer action. A randomized sample of</p>

SESSION III

	<p>university students was evaluated with a financial literacy survey, already proved to compare the results ex-ante vs. ex-post. During the mean session of this intervention, the 4 videos vignettes about key financial decisions and the 20 questions about knowledge, self-efficacy, and confidence were used as a feedback system to measure the impact of the tool on financial literacy levels of the participants. The robustness of the survey involved in the video has been proved statically and the improvement of the financial literacy level has been demonstrated. The FL score of the participants have been increased after this trial intervention and among the three sections, knowledge shows the highest positive changes know. Their impact on public policy and the Implications for future research have been discussed.</p>
<p>CP3057 14:15-14:30</p>	<p style="text-align: center;">Collaborative Education Teams Development Using Alternative Methodologies Mircea-Florin Vaida Presenter: Mircea-Florin Vaida Technical University of Cluj-Napoca, Romania</p> <p>Abstract-The objective of the paper is to present collaborative teams construction able to be used in education and software companies based on alternative methodologies. Starting from previous dedicated developed applications based on Enneagram and Myers-Briggs Type Indicator (MBTI), new methodologies, new elements concerning typologies based on oriental and occidental cultures, other alternative methodologies are analyzed. Based on the Jungian-Keirse system many companies integrated MBTI that offers some potentialities in collaborative education and working teams. More refinements can be realized considering correspondences with the nine-enneagram typologies, the Belbin's nine clusters of behavior, and other elements based on occidental zodiac and oriental inner discovery. All these elements should be integrated in modern companies to improve the efficiency within harmonious employer's activity. An open web architecture proposal based on components, services and micro-services will be used to integrate all facilities.</p>
<p>CP3086 14:30-14:45</p>	<p style="text-align: center;">Training assistant for industrial processes through augmented reality Jonathan A. Romero, Washington D. Quero, Jorge S. Sánchez, Víctor H. Andaluz Presenter: Washington D. Quero Universidad de las Fuerzas Armadas ESPE, Ecuador</p> <p>Abstract-This article presents an application of augmented reality, as a contribution to the industrial and education sector, through a technological tool for the assistance of operators in industrial processes. It facilitates the identification of equipment and instruments, granting the management and visualization of the parts constitutive of the elements of the process. Additionally, it guides in the calibration of instruments and the simulation of a closed loop control algorithm that allows control by regulation. Its development focuses on the recognition of equipment through a Smartphone for detect characteristic points of objects and image recognition, 3D modeling through CAD software and integration in a multiplatform, incorporation of animations and mathematical modeling of industrial processes that allows of the development of closed loop control algorithms. The tests performed on the augmented reality application demonstrated an easy handling and high interactivity with the user. The results provide greater knowledge in the operation and structure of the equipment, instrument and process. Finally, the results support the skills development for the tuning of</p>

SESSION III

	PID controllers in industrial processes.
CP3091 14:45-15:00	<p>YouTube assessment as a means of documentary research students Benjamin Maraza-Quispe; Luis Alfaro-Casas; Olga Alejandro-Oviedo; Walter Choquehuanca-Quispe; Crisia Vivanco-Chavez; Yrma Esther Alay-Palomino; Kevin Quispe-Chambi; Nicolas Cayturo-Silva Presenter: Nicolas Cayturo-Silva Santa Maria Catholic University, Peru</p> <p>Abstract-The research determines to what extent YouTube can be used as a research tool. To carry out the analysis, the design proposed by [1] in the "Journal of Child Neurology" was followed.</p> <p>The importance of this research lies in determining to what extent YouTube can be reliable to be used as a documentary research resource for students in the teaching-learning processes To this end, thirty videos are selected on three different topics, which are analysed for their effectiveness in terms of technical concepts and for their reliability with respect to the information, they need; two videos, the highest and lowest score, are selected for an experimental group, comparing and contrasting results with a control group. The analysis shows that the videos with the highest scores obtained better grades. It can also be determined that YouTube can be used as a tool for documentary research, however, the correct search, selection and reliability practices are still the key to making the most of this platform. A rubric is also proposed to evaluate videos for using documentary research.</p>
CP3059 15:00-15:15	<p>Development of mobile application for freezing point calculation in ice cream mixes Nuntaporn Aukkanit, Shutchapol Chopvitayakun and Nuntipa Khumkarjorn Presenter: Nuntaporn Aukkanit Suan Sunandha Rajabhat University, Thailand</p> <p>Abstract-Traditional manual calculation method for ice cream freezing point based on the predefined formula applying linear interpolation requires too complicated steps to achieve. The result is, it takes too much time and effort to find an output. Additionally, Microsoft Excel spread sheet is easier for user but it must be executed by computers not friendly to smartphones. Some of these Excel files requires Internet connection to retrieve some necessary data or formula to calculate. Therefore, mobile application is great solution and it is more user-friendly than manual method and spreadsheet in term of real-life use. This work applied linear interpolation equation and Java for Android to create a mobile application capable of calculating initial freezing point of ice cream which affects ice cream quality under the storage. Once, users download and install it from Google Play Store. It works efficiently without advertising nonfiction or any in-app purchase requirement. It is available even on the offline mode. Its interfaces come in graphical designs a lot easier than its predecessors. Then, user is capable of using it single handedly while other preparation of ice cream is also running concurrently.</p>
CP3125 15:15-15:30	<p>Applying ELECTRE TRI ME for evaluation the quality of services provided by a Library Helder Gomes Costa and Maria Bernarda Teixeira Duarte Presenter: Helder Gomes Costa Universidade Federal Fluminense, Brazil</p>

SESSION III

	<p>Abstract-This paper describes an original proposal for modeling the evaluation the Quality of Services (QOS) provided by libraries under the view point of multiple evaluators that take into account multiple criteria. The research was based in applying ELECTRE TRI ME for evaluating the quality of services provided by a library devote to nuclear studies in Brazil. The ELECTRE ME avoids the contradictory approach of using of compensatory algorithms (such as weighted mean) as an input in non-compensatory outranking methods, despite the non-compensatory principle is in the heart of the ELECTRE methods. It was not found a previous proposal with that incorporate outranking concepts in situations where more than one evaluator is present, and, to apply it to evaluate the quality of the services provided by a library.</p>
<p>CP3067 15:30-15:45</p>	<p style="text-align: center;">IOT smart home for elderly and unattended residence Shutchapol Chopvitayakun and Suebsak Jantamala Presenter: Shutchapol Chopvitayakun Suan Sunandha Rajabhat University, Thailand</p> <p>Abstract-Aging society has expanded and sprawled to every nation in this world expeditiously. Number of elder has been increasing rapidly in contrast to the new born and birth rate. They have been decreasing continually with high significance. This phenomenon is causing social concerns among younger generations over their elderly family members e.g. parents or grandparents. Unattended residence with home alone elderly people is a challenging problem for new generation workers to worry and to solve. Thanks to the rise and advancement of 5G mobile network powered with the significant potentiality of Internet of Things (IOT) technology, these 2 factors are driving and shaping the concept of making smart home leap forward. Smart home, this idea has been widely adopted by worldwide home owners aimed to make a better living for the residence. Elderly people and unattended property are 2 target groups objective to get helpful services from this smart home concept. This work is an implementation of IOT sensors integrated with mobile application to create a smart home system to support unattended residence and to prevent unwanted incidents e.g. fire, smoke, and gas leak. Moreover, this smart home system enables users to fully control all home electronic devices over the Internet e.g. light bulbs, door lock and coffee machine. Each sensor and circuit board communicate to each other over the cloud base platform.</p>



Coffee Break

<15:45-16:00>

SESSION IV

October 29, 2019

Session IV

[Advanced Teaching Methods and
Techniques]

🕒 **16:00-18:15**

📍 **Sky Meeting Room 2 (3/F)**

Chaired by Assoc. Prof. Shoichi Nakamura

Fukushima University, Japan

9 Presentations—

CP3068, CP3074, CP3066, CP3098, CP3102-A, CP3103, CP3119, CP3106-A, CP1010

***Note:**

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SESSION IV

<p>CP3068 16:00-16:15</p>	<p>Employing automatic speech recognition for quantitative oral corrective feedback in Japanese second or foreign language education Yuka Kataoka, Achmad Husni Thamrin, Jun Murai and Kotaro Kataoka Presenter: Yuka Kataoka Keio University, Japan</p> <p>Abstract-In Second or Foreign Language (SFL) education, a number of studies in applied linguistics have addressed a common issue of how teachers can provide effective feedback to correct learner’s erroneous utterances during a classroom hour. Oral Corrective Feedback (OCF) is generally time-consuming and labor-intensive work for teachers. The use of ASR (Automatic Speech Recognition) in SFL education has drawn attention from both teachers and learners to increase the learning effect and efficiency. We designed and integrated Quantitative OCF using Google Cloud Speech-to-Text as a part of the oral assessment using an LMS (Learning Management System) for Japanese SFL courses. The level of learners is a starter’s level without any prerequisite knowledge of Japanese language. Preliminary experiments using a total of 214 audio datasets by non-native speakers exhibited that 37.4% of the datasets were recognized properly as Japanese sentences. However, as the remainder of the datasets contains erroneous utterances, characteristics of intonation, or noise, ASR successfully detected word-based errors with high accuracy (82.4%) but low precision (28.1%). Oral assessment employing ASR is highly promising as a complementary system for teachers on partially automating the assessment of audio data from learners with evidence and priority orders as well as significantly reducing teachers’ scoring workload and time spent on the most problematic part of the students’ speech. While our implementation still requires teachers to double-check, such overhead is small and affordable.</p>
<p>CP3074 16:15-16:30</p>	<p>Using e-assessment to address mathematical misconceptions in engineering students Indunil Sikurajapathi, Karen Henderson and Rhys Gwynllyw Presenter: Karen Henderson University of the West of England, UK</p> <p>Abstract-Students, when answering a mathematical question, may make a mistake in their answer for a variety of reasons. For example, not reading the question properly, making a mistake due to carelessness or due to a mathematical misconception. It is this latter category, which is of particular interest to us in this paper. When such mistakes occur in handwritten work then, in general, the teacher is able to identify the mistake(s) during the marking process and give written detailed feedback on the student’s script. The disadvantage of this approach is the time and effort it takes to mark and to get feedback back to the student. As a result, e-assessment is becoming a standard means of providing formative and summative assessment of mathematical techniques. The research problem that we have identified is how to detect mathematical misconceptions when students answer e-assessment questions incorrectly, and how to improve the feedback provided to the student in such cases. By analyzing students’ rough paper-based workings for an e-examination, we have captured mathematical misconceptions made by first year engineering students. This has enabled us to catalogue common student errors made by students. By amending the e-assessment feedback code, students who make these errors will subsequently benefit from</p>

SESSION IV

	<p>enhanced, tailored feedback, highlighting the mathematical misconception/error made. In addition, detailed guidance on how to improve their knowledge related to the topic will be given. The aim of our work is to improve the e-assessment experience for students as well as addressing and tackling misconceptions in a timely fashion.</p>
<p>CP3066 16:30-16:45</p>	<p style="text-align: center;">Combining programming with audio explanations Anders Kluge, Kristina Torine Litherland, Per Harald Borgen and Gløer Olav Langslet</p> <p style="text-align: center;">Presenter: Anders Kluge University of Oslo, Norway</p> <p>Abstract-Increasing emphasis on programming in schools in Europe raises specific challenges. Many teachers enter the subject having limited competence and teaching experience in programming. This article reports on an exploratory study where students in one lower and three upper secondary schools learn programming. The students use a specific learning tool as their programming environment. The tool combines a code editor, an output window and audio recordings. The study investigated how the pupils could explain and expand on their program code in this environment. The qualitative study showed that all the students could present their code verbally using the facilities in the learning environment and that the upper secondary students were more elaborate, expanding on coding process and alternative solutions. The rich environment of the tool and the pedagogical structure in the project reported make programming a multidimensional activity, with promising learning opportunities.</p>
<p>CP3098 16:45-17:00</p>	<p style="text-align: center;">Teaching software engineering tools to undergraduate students Claudia Raibulet, Francesca Arcelli Fontana and Ilaria Pigazzini</p> <p style="text-align: center;">Presenter: Claudia Raibulet University of Milano-Bicocca, Italy</p> <p>Abstract-Today, software development is characterized by keywords such as collaborative, teamwork, distributed, agile, dynamic, qualitative and tool-supported among many others. In this paper, we present our experience in teaching three software development tools often used in industry in a software engineering course for undergraduate students: GitHub, SonarQube, and Microsoft Project. The main reasons behind the use of these tools during the development of a software project were: (1) students become familiar with examples of tools adopted in industry and academia, (2) students are enabled to collaborate in teams for the achievement of a common goal, and (3) students become aware of the management tasks needed by a project developed in teams. We exploited these tools in the software engineering course in the last three academic years. The students feedback on using these tools gathered through a questionnaire was positive. Students were enthusiastic in learning about new tools and their support for software development and management. In this paper we summarize the students feedback during three academic years and the lessons we have learned from their feedback.</p>
	<p style="text-align: center;">“I didn’t know you could do that in Minecraft”: Examining the impact of professional development on teachers using digital games Jennifer Jenson and Cristine Hebert</p> <p style="text-align: center;">Presenter: Jennifer Jenson</p>

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<p>CP3102-A 17:00-17:15</p>	<p style="text-align: center;">The University of British Columbia, Canada</p> <p>Abstract-For decades, teacher professional development on the use of emerging technologies and their integration into the curriculum has been viewed as an urgent issue by policy makers, educators, parents, faculties of education, and other stakeholders. This research project sought to examine the impact of a professional development session, held over an eight hour day on classroom teaching practice, using the video game Minecraft. Minecraft, in builder mode, allows players to create their own worlds, populating them with plants, animals, buildings, rivers, and so on. There are very few limitations, other than skill and know-how, and the game was selected by the Superintendent of the school district as being “most relevant” to the learning goals for the year. In total, 18 teachers participated in the study, volunteering to allow researchers to visit their science or math classrooms two times prior to the professional development (PD) day and twice following it. The PD lasted a day and was conducted by the researchers and a teacher who is also a highly skilled Minecraft player, and who has run over 100 workshops for teachers on its uses. During the day, teachers learned how to navigate and build in Minecraft (16/18 had never used the game before), and by the end of the day they developed lesson plans for Minecraft implementation within their own classes. In this paper, we report on the outcomes of the qualitative study, including observational fieldnotes, audio and video recordings, and interviews with teachers after their Minecraft unit was completed. This study contributes to a better understanding of how to support teachers when implementing game-based learning, and provides much needed research on the impact of PD on teachers’ classroom practices.</p>
<p>CP3103 17:15-17:30</p>	<p style="text-align: center;">IP geolocation underestimates regressive economic patterns in MOOC usage Daniela Ganelin and Isaac Chuang Presenter: Daniela Ganelin Massachusetts Institute of Technology, USA</p> <p>Abstract-Massive open online courses (MOOCs) promise to make rigorous higher education accessible to everyone, but prior research has shown that registrants tend to come from backgrounds of higher socioeconomic status. We study geographically granular economic patterns in ~76,000 U.S. registrations for ~600 HarvardX and MITx courses between 2012 and 2018, identifying registrants’ locations using both IP geolocation and user-reported mailing addresses. By either metric, we find higher registration rates among postal codes with greater prosperity or population density. However, we also find evidence of bias in IP geolocation: it makes greater errors, both geographically and economically, for users from more economically distressed areas; it disproportionately places users in prosperous areas; and it underestimates the regressive pattern in MOOC registration. Researchers should use IP geolocation in MOOC studies with care, and consider the possibility of similar economic biases affecting its other academic, commercial, and legal uses.</p>
<p>CP3119 17:30-17:45</p>	<p style="text-align: center;">Conceptual framework of an intelligent tutor for teaching English grammar to high school students Parneet Kaur, Harish Kumar, Sakshi Kaushal Presenter: Parneet Kaur UIET, Panjab University, India</p>

SESSION IV

	<p>Abstract-This paper presents a framework for an intelligent tutoring system (ITS) to teach English grammar to high school students. The framework includes scripts to teach a student about a particular topic followed by assessment related to the topic. It also provides learning material in the form of gifs and videos to supplement text for better understanding. Deep learning methods have been used to automatically fetch answers to Multiple Choice Questions (MCQs) based assessments. Machine learning algorithms have been used to automatically detect student’s learning styles for language. The framework also includes analyzing cognitive thinking level of the student according to bloom’s order of thinking skills.</p>
<p>CP3106-A 17:45-18:00</p>	<p style="text-align: center;">Transforming pedagogy through partnership Suzanne de Castell, Kisha Macpherson and Keri Ewart Presenter: Suzanne de Castell The University of British Columbia, Canada</p> <p>Abstract-Preparing all students to meet 21st century digital literacy standards is an aspiration increasingly difficult to realize under present-day conditions of austerity in public education. Expanding traditional methods of teaching (as well traditional, print-based, conceptions of learning and literacy) to incorporate digital competencies should support the transition to 21st century learning tools and practices. Effectively and consistently mobilizing technologies as pedagogical tools, however, calls upon resources not readily available in all schools: a persisting “digital divide”, not only in uneven access to digital devices for classroom use, but, as importantly, in an increasingly dysfunctional pedagogical mismatch between traditional means and innovative ends, calls for teacher preparation and support that is no more available in disadvantaged schools than is the technology itself. This study involved 10 teachers and 130 students across six elementary school classrooms over two years. Data are drawn from teacher and student interviews, classroom observations, fieldnotes, teacher questionnaires, videotaped professional development workshops, and illustrative examples of student work, to report on the design, implementation and results of a technology focused pedagogical program to support teachers in whose classrooms technology had little or no place, in mobilizing digital resources and practices to transform their daily classroom pedagogy. This project was part of a research partnership between a university Faculty of Education and its adjacent low-income, low achievement, high needs school district located in a Canadian city whose economic base is a (declining) automotive industry. The integrated literacies program (ILP) we used is a multiliteracies/multimodalities, technology infused literacy framework focused on developing 21st century competencies of critical thinking, problem-solving, communication, and collaboration, by advancing teachers’ curricular goals through innovative digital literacy pedagogies. While increasing access to digital devices most certainly played a key role, no less critical to this project’s success was the specific pedagogical training and ongoing support that enabled teachers in a low-income, high needs school to effectively embed digital tools as a regular part of literacy practice in their primary/junior classrooms. We conclude by sharing our project’s online open-access teachers’ manual designed particularly for those working in severely disadvantaged communities, to help bridge the digital divide that continues to impede their students from building the digital competencies they need for a fairer chance at educational and vocational success.</p>
	<p style="text-align: center;">Design and development of a PBL mobile application in Islamic education: A conceptual</p>

SESSION IV

CP1010 18:00-18:15	<p style="text-align: center;">framework Gamal Abdul Nasir Zakaria and Aliff Nawi Presenter: Gamal Abdul Nasir Zakaria Universiti Brunei Darussalam, Brunei</p> <p>Abstract-This article aims to design and develop a Problem Based Learning (PBL) Mobile Application for teaching and learning in Islamic Education at the Polytechnic Brunei Darussalam. The development methodology-based application that divides the ADDIE model of instructional development activities into five phases: Analysis, Design, Development, Implementation and Evaluation. Each phase is explained in detail to bring out what action is taken on each phase. ADDIE model has listed guidelines that should be implemented detailed and systematically which involves analysis, design, development, implementation and evaluation. The priority aspects such as the content, learning theory and learning strategies are taken into account in analysing and designing. The researchers applied the behaviorism and constructivist theory as the learning theory. While PBL strategies are embedded in the application throughout the designing and development phase. Development process of an effective mobile application is not easy or takes shorter time but, it requires detailed and systematic planning. A model conceptual framework is constructed to help researchers to make the action more regular. At the end of the study, the authors present each element of the conceptual framework for the design and development a mobile application in teaching and learning in Islamic Education.</p>
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Dinner @ Restaurant Romeo (G/F)
<18:40-20:30>

Note: Dinner coupon is needed for entering the restaurant.

SESSION V

October 29, 2019

Session V

[Curriculum Design and Teaching]

🕒 **16:00-18:30**

📍 **Sky Meeting Room 5 (3/F)**

Chaired by Assoc. Prof. Karen Henderson

University of the West of England, United Kingdom

10 Presentations—

CP1014, CP3029, CP3044, CP3050, CP4004, CP3053, CP3055-A, CP3064, CP3124, CP3107-A

***Note:**

- Please arrive 30 minutes ahead of the sessions to prepare and test your PowerPoint.
- Certificate of Presentation 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 at the dinner banquet.

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<p>CP1014 16:00-16:15</p>	<p>Use of ICT in the planning of the music class of the graduates of the distance education undergraduate degree in music of the university of Brasilia Josué Berto dos Santos Júnior and Paulo Roberto Affonso Marins Presenter: Josué Berto dos Santos Júnior Universidade de Brasília, Brazil</p> <p>Abstract-This text presents an outline of a master's dissertation in music about the use of information and communication Technologies (ICT) in the planning of the music class of the graduates of the distance education undergraduate degree in music of the University of Brasília (UnB). In this outline, it was sought to show how the graduates plan the use of the technologies for the music class and the results that were achieved. As methodological procedures, the research had a qualitative character, by means of an interview study with five graduates of the of the aforementioned degree with the class of 2011 of the learning center of Ipatinga-MG. It is understood that the technologies are present in the planning of the music classes of the graduates, from the elaboration to the practice, but there is a need to develop a critical-reflective thinking of the technologies for musical education. The graduates recognize that musical training through technologies has influenced a lot in their music classes and emphasize that technologies are tools and means that assist the contextualized music class for generations of digital natives.</p>
<p>CP3029 16:15-16:30</p>	<p>A design model for a degree programme in cyber security Karo Saharinen, Mika Karjalainen and Tero Kokkonen Presenter: Karo Saharinen JAMK University of Applied Sciences, Finland</p> <p>Abstract-The need for skillful cyber security workforce has increased dramatically during the last ten years. The contents of the degree programmes have not been able to respond to this need adequately and the curriculum contents have not always met the industry's knowledge needs.</p> <p>In this paper, we describe a model for designing a degree programme in Cyber Security. We establish the guiding frameworks and requirements within the European Union for a degree programme. Given the researched background, we propose a systematic way to implement knowledge, skill and competence objectives to a degree programme by using generally accepted frameworks. The framework targets engineering education in information technology, cyber security given on university level.</p> <p>By having a well-established model for the degree programme, the private and public sector can flourish by having competent personnel at their use as employees.</p>
<p>CP3044 16:30-16:45</p>	<p>Blending gamification and project based learning with rapid prototyping technologies in enhancing students' learning of design Angel Daniel Munoz Guzman Presenter: Angel Daniel Munoz Guzman Technological Institute and Higher Education of Monterrey, Mexico</p> <p>Abstract-New generations of students face new challenges in learning, many students are being left behind by old educational systems and common teaching methodologies. This study</p>

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	<p>intends to measure how the performance of the students is affected by the implementation of different techniques on educational innovation and rapid prototyping technologies. In this research, three groups of students enrolled in digital modeling courses were analyzed. During the analysis, the students' performance and experiences were assessed using different educational techniques such as Project-based learning (PBL), Gamification and technologies such as 3D printing and 3D scanning to improve their learning experience, grades. The results showed that the application of this learning technique, the personalization of the tests according to the abilities of each student, and the use of technologies such as 3D printing and 3D scanning helped the students to improve their learning experience, increase their grades and develop the necessary skills for their 3D modeling course.</p>
<p>CP3050 16:45-17:00</p>	<p>A practical technology-enhanced approach for programmable logic controller (PLC) training course Sasithorn Chookaew, Suppachai Howimanporn and Warin Sootkaneung Presenter: Sasithorn Chookaew King Mongkut's University of Technology North Bangkok, Thailand</p> <p>Abstract-In the twenty-first century, continuing education in engineering is a must, not only in teaching engineers what engineering is, but also how to understand and integrate knowledge and technology into the real world. Recently, there is more significant need to continue education and acquire essential competencies to adapt to the ever-changing world. This paper describes a PLC training course which employs an experimental kit that allows engineers to understand difficult concepts and equations, and how to apply these to real life situations. In addition, this article presents an assignment on how to overcome obstacles. This resulted in an experimental kit and using technology for learning activities, being added to the training course. The article also presents the results of participants' cognitive knowledge and performance on course objectives as a result of the models developed for use in the classroom. Participants had positive attitudes regarding their satisfaction towards the training course. Overall, significant improvements in learning outcomes, due to the addition of a training course using an experimental kit and technology for learning activities, were clearly observed.</p>
<p>CP4004 17:00-17:15</p>	<p>Real-time remote courses-A case study on student satisfaction and implementation Martha Elena Núñez and Miguel X. Rodríguez-Paz Presenter: Martha Elena Núñez Tecnológico de Monterrey, Mexico</p> <p>Abstract-Real-time remote courses offer the students the valuable resource of cultural diversity and the access to professors who are leaders in their field of knowledge. It also encourages the practice of several skills with technology as a learning tool. We have studied how courses taught by internationally experienced leaders, relying on communication technologies, impact the students and can be a valuable complement to traditional classes offering them a global perspective in its formation. This paper focuses on the validation of the experience looking at student satisfaction for a teaching methodology in a real-time remote model. It also takes into account the recommendations from their professors. This information can provide valuable data to consider in order to further promote this scheme of</p>

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	<p>classes and successfully continue teaching through real-time remote classes.</p>
<p>CP3053 17:15-17:30</p>	<p>A marking system designed for efficiency and fragmented or collaborative assessments Zhuhan Jiang and Jiansheng Huang Presenter: Jiansheng Huang Western Sydney University, Australia</p> <p>Abstract-While standard e-platforms do support a variety of teaching and learning activities in tertiary institutions to different degrees, they are typically designed to be “doable” and sometimes even theoretically so anyway, rather than taking efficiency as an equally high priority. In contrast, we developed a marking system to streamline the handling of marking allocations, irregular student transitions from class to class or from marker to marker, dynamic membership changes of student group work, instant creation and re-use of marker-defined feedback comments, along with other associated activities. In this work, we will however focus more on the functionalities and their design details on creating a marking system that especially well supports dynamically adaptable marking criteria and freely adjustable feedback data banks. The designing goal is to make this system as efficient as possible to the markers, as fair as possible to all the students, and as convenient as possible to the system operators.</p>
<p>CP3055-A 17:30-17:45</p>	<p>Evaluating computational thinking skills in relation to the comprehension of natural science lesson’s content Kanaki Kalliopi and Kalogiannakis Michail Presenter: Kalliopi Kanaki University of Crete, Greece</p> <p>Abstract-In the modern digital era, cultivating computational thinking is considered important at all stages of schooling. In fact, by the second half of the 21st century, it is expected to be evolved to a fundamental skill just like reading, writing and arithmetic are nowadays. Essential components of computational thinking are competencies such as collection, organisation and analysis of data, algorithmic thinking, abstraction and evaluation.</p> <p>Constructing valid and reliable assessment tools is a prerequisite for designing and implementing instructional interventions that facilitate the growth of computational thinking. In fact, initial assessment - diagnosis of computational thinking levels is of great importance in order to design targeted instructional interventions for its development. Moreover, assessment tools are necessary for evaluating the effectiveness of the instructional interventions in achieving their goals.</p> <p>Our research interests focus on building a relevant assessment tool, suitable for the students at first stages of schooling i.e. the first and the second grade of primary school. The necessity of our work lies in the fact that the subject of assessing computational thinking remains a research challenge despite the efforts made in the relevant field. The review of the international bibliography indicates that the research regarding the assessment of computational thinking is at an early stage and does not cover neither its whole spectrum, nor all age groups.</p> <p>Our research approach lies in the assumption that assessing the levels of basic components of computational thinking can formulate the basis of determining the levels of computational thinking itself. Within this concept, we have built an assessment tool that combines</p>

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	<p>quantitative and qualitative assessment methods. Its backbone is the digital platform PhysGramming, which we designed and implemented from scratch, in order to be developmentally appropriate for students at first stages of schooling. The innovative characteristic of PhysGramming is its constructivist nature. Indeed, while being assessed, children construct their own digital games and get a first contact with object-oriented programming commands.</p> <p>The assessment tool was applied to 450 students of first and second grade of primary school, in Greece, from February to June 2019. The research was conducted attuned to the ethical guidelines of educational research, within the framework of the physical and natural science courses.</p> <p>In our presentation, we intend to describe the assessment tool we propose. Moreover, we are going to discuss the results of our research that point out the correlation between the levels of computational thinking skills and the comprehension of the lesson's content. In other words, we intend to designate whether high learning performance is a necessary and sufficient condition for diagnosing high levels of basic computational thinking skills.</p>
<p>CP3064 17:45-18:00</p>	<p style="text-align: center;">Evaluation of teaching assistant robot for programming classes Kazuyoshi Yoshino and Shanjun Zhang Presenter: Kazuyoshi Yoshino Kanagawa Institute of Technology, Japan</p> <p>Abstract-This paper describes a robot for supporting teachers who are teaching computer programming classes. In its latest series of "Courses of Study", the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan strongly recommends the use of active learning systems and the introduction of computer programming education courses in elementary schools. Programming instruction typically includes explanations of the basic syntax used in programming languages, the application of that syntax, and related exercises. However, the teachers in programming classes commonly spend much more time correcting errors, that is, debugging their students' programs, than they spend teaching. These delays can affect the progress of programming lessons and the motivation of the participating students. With these points in mind, we have developed a teaching assistant robot that is designed to support efficient classroom management of programming classes by advising and assisting students who are encountering problems. Herein, we describe the tasks performed by the teaching assistant robot in a classroom environment in which actual programming lessons are assumed to be taught. In particular, we explain the problems encountered by students in the process of learning basic programming techniques, the causes of the problems, the method by which the teaching assistant robot identifies those problems, and the contents of advice provided by the teaching assistant robot corresponding to those problems. We also show the effectiveness of the teaching assistant robot by conducting evaluation experiments.</p>
<p>CP3124 18:00-18:15</p>	<p style="text-align: center;">Enabling primary school teachers to deliver STEM programmes with the Internet of Things: Challenges and recipes for success Alex Vakaloudis, Kieran Delaney, Brian Cahill and Jacqueline Kehoe Presenter: Alex Vakaloudis Cork Institute of Technology, Ireland</p>

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	<p>Abstract-The Internet of Things (IoT) offers opportunities for data collection, processing and visualisation driving fruitful mechanisms for the demonstration and execution of STEM activities. Nevertheless its application in a primary school setting is not straightforward. There are issues ranging from the capability to setup an IoT system in the class, sound knowledge of technical terminology, relevancy to curriculum and finally the provision of a positive experience to students. In this paper we discuss our experiences including lessons learnt towards providing an IoT platform for STEM promotion in primary schools, the challenges identified and the solutions formed to tackle them. The outcome, is a set of practices for making IoT practically applicable for STEM activities.</p>
<p>CP3107-A 18:15-18:30</p>	<p>Revisiting social construction of knowledge in computer mediated communications (CMCs): What should we change? Çiğdem Suzan Çardak Presenter: Çiğdem Suzan Çardak Anadolu University, Turkey</p> <p>Abstract-In this study, computer mediated discussion sessions were arranged and at the end of the discussions, participants' views were collected regarding the CMCs and construction of new knowledge. Though the Interaction Analysis Model (IAM) [1] was studied in numerous studies, why some CMCs result in low levels of social construction of knowledge is still an unknown phenomenon. The author also conducted a case study on this topic in the past and reached low levels of social construction of knowledge according to IAM. The motivation behind revisiting similar analysis was the author's suspicion about if the voluntary basis for participation to CMCs, students' familiarity to each other, moderating behaviors of the instructor or the moderator and the techniques of the discussions change, what does change? The aim of this paper is to identify the levels of social construction of knowledge in CMCs of the graduate students of a university in Turkey, compare and discuss the results with the results of the previous IAM study of the author and other similar studies. This study was designed as a case study. The case being studied is two discussion sessions in CMCs moderated by the author with the participation of masters and doctorate level students of the curriculum and instruction. The first discussion topic was conducted as a debate on a specific topic (which one is best for active learning: e-learning vs. face-to-face?) and the second one was conducted as a free flow discussion on a general topic (globalization and e-learning). During six weeks discussions in June and July 2019, 65 messages were sent to discussion forum of Blacboard provided by the university. 14 graduate students were willing to participate in the discussions though not all of them actively participated. At the end of the discussions, an open-ended questionnaire was send to the participants as an electronic survey. Eight of the participants answered the questions. Quantitative content analysis was conducted on the CMC transcripts by using IAM and qualitative descriptive analysis on the open-ended questionnaire data. The results of this case study address the iteration of the results of the previous study conducted with the participation of Turkish graduate students. The results were discussed in multiple dimension such as participating in CMCs on voluntary basis or as a requirement of an online course, familiarity of the participants to each other, moderating behaviors, discussed topics, discussion techniques and the attributes of the Turkish culture. According to the lessons learned from this and the previous studies, some recommendations were put forward in order</p>

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	to enhance high levels of social construction of knowledge in CMCs.
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Dinner @ Restaurant Romeo (G/F)

<18:40-20:30>

Note: Dinner coupon is needed for entering the restaurant.

SESSION VI

October 29, 2019

Session VI

[Educational Quality Service and Assessment]

🕒 **16:00-18:30**

📍 **Sky Meeting Room 6 (3/F)**

Chaired by Prof. Betsy J. Bannier

Lake Region State College, USA

10 Presentations—

CP1015, CP3021, CP3041, CP3014, CP3039, CP3081, CP3040, CP3108, CP3020, CP3100

***Note:**

- Please arrive 30 minutes ahead of the sessions to prepare and test your PowerPoint.
- Certificate of Presentation 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 at the dinner banquet.

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<p>CP1015 16:00-16:15</p>	<p>Assessing student learning across delivery modes in chemistry Betsy Banner, Kory Boehmer, Cindy Brown, Lloyd Halvorson, Brandi Nelson and Tammy Riggan Presenter: Betsy Banner Lake Region State College, USA</p> <p>Abstract-A comprehensive statistical analysis of shared assessments was conducted using student assessment data (n=152) gathered over a three-semester cycle from three general education chemistry courses taught both online and on-campus at a public, two-year community college in the upper Midwest United States. Item difficulty values, item discrimination values, difficulty ratios were used to evaluate the efficacy of the shared assessment instruments in assessing student learning toward intended course outcomes. Two-sample t-tests were conducted to determine the statistical significance of differences in assessment means by course delivery mode.</p>
<p>CP3021 16:15-16:30</p>	<p>Model to personalize the teaching-learning process in virtual environments using case-based reasoning Benjamin Maraza-Quispe, Olga Alejandro-Oviedo, Betsy Cisneros-Chavez, Maryluz Cuentas-Toledo, Luis Cuadros-Paz, Walter Fernandez-Gambarini, Lita Quispe-Flores, Nicolas Cayturo-Silva Presenter: Benjamin Maraza Quispe San Agustín National University of Arequipa, Peru</p> <p>Abstract-In recent years, new research has appeared in the area of education, which has focused on the use of information technology and the Internet to promote online learning, breaking many barriers of traditional education such as space, time, quantity and coverage. However, we have found that these new proposals present problems such as linear access to content, patronized teaching structures, and non-flexible methods in the style of user learning. Therefore, we have proposed the use of an intelligent model of personalized learning management in a virtual simulation environment based on instances of learning objects, using a similarity function through the weighted multidimensional Euclidean distance. The results obtained by the proposed model show an efficiency of 99.5%; which is superior to other models such as Simple Logistic with 98.99% efficiency, Naive Bayes with 97.98% efficiency, Tree J48 with 96.98% efficiency, and Neural Networks with 94.97% efficiency. For which we have designed and implemented the experimental platform MIGAP (Intelligent Model of Personalized Learning Management), which focuses on the assembly of mastery courses in Newtonian Mechanics. Additionally, the application of this model in other areas of knowledge will allow better identification of the best learning style of each student; with the objective of providing resources, activities and educational services that are flexible to the learning style of each student, improving the quality of current educational services.</p>
<p>CP3041 16:30-16:45</p>	<p>Development of a method for evaluating quality of education in secondary schools using ML algorithms Rakhmanov Ochilbek Presenter: Rakhmanov Ochilbek Nile University of Nigeria, Nigeria</p>

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	<p>Abstract-Machine learning algorithms may have very wide area of applications. In this paper we used machine learning algorithms to establish a method for evaluating the quality of educational in secondary schools, depending on their past experience. The tool developed can be used for performance comparison between different schools and future score prediction. We collected and compared the results of almost 650 students from various regions of Nigeria to establish a relationship between their academic performance in internal and external exams. Internal exams are those conducted by their respective schools while external exams are those held by independent bodies, like WAEC and JAMB. We conducted a regression test on UTME (JAMB) scores and classification test on WASSCE (WAEC) scores. With simple but effective algorithms, we managed to reduce the mean squared error by %75 for regression model, and improved the prediction accuracy in classification by %35. Model development was done by using Python libraries. With a developed model, we compared performances of the schools from different regions in Nigeria. Results show that findings are acceptable and applicable for further use.</p>
<p>CP3014 16:45-17:00</p>	<p style="text-align: center;">Application of quality function deployment for the environment in service education: A case study of SSRU by Google forms Chaiwat Waree Presenter: Chaiwat Waree Suan Sunandha Rajabhat University, Thailand</p> <p>Abstract-This research aimed to study the needs and the satisfaction of Suan Sunandha Rajabhat University students towards the university's environment and services. Systematic sampling was used to determine the sample group, which herein consisted of 381 students who studied in the academic year of 2017. The study also included a design and guidelines that would be useful for the improvement of the university with regard to the environmental activities, resource utilisation, and the university's services. "Quality Function Deployment for the Environment Technique (QFDE)" was employed as the analytic instrument in examining the needs and the satisfaction. Factors considered to be most important were identified so that the most appropriate technique to meet the needs and the satisfaction may be specified. Moreover, an Importance-Satisfaction Model (I-S Model) was used for the integration of the factors, which would help provide greater accuracy. The research begins with transforming the Voice of Customers (VOCs) into four phase models as follows: (1) Product Planning, (2) Design Deployment, (3) Process Planning, and (4) Product Operations Planning to become a Procedure Manual.</p>
<p>CP3039 17:00-17:15</p>	<p style="text-align: center;">Information and communication technologies based teaching methodologies for Peruvian children with down syndrome Josué Villasante, Stefanny Poma, Juan Gutierrez-Cardenas, Nadia Rodriguez-Rodriguez Presenters: Josue Villasante and Stefanny Greys Poma Beltran Universidad de Lima, Peru</p> <p>Abstract-Learning disabilities are found in people that experience difficulties in the acquisition of basic intellectual skills, which are fundamental to succeeding at school, work or in life in general. An example of a learning disability is Down Syndrome (DS). Children with DS are usually unable to follow the traditional educational systems. As a result, these children need tailored methods and techniques that adapt to their learning styles. Therefore, new educational tools are being</p>

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	<p>developed that allow Down Syndrome Children (DSC) to sharpen their intellectual capacities in a better way. In this research, we implemented and modified two literature-based mobile tools that could aid in acquiring mathematics and linguistic skills oriented towards DSC. We performed a quasi-experimentation to test the improvements in mathematics and language skills in a group of children with DS. Moreover, we found that measuring the response time of children with disabilities is a complex task; and the continuous assistance from a tutor was also found to be necessary. Despite the difficulties encountered, such as distraction from the children because of being curious to interact with a technological tool, the results show that it is possible to increment the mathematical and language skills in a group of DSC by using an Information and Communication Technology (ICT) based tool in contrast with a classical teaching methodology without ICT tools.</p>
<p>CP3081 17:15-17:30</p>	<p style="text-align: center;">Information technology in multicultural educational environment: Teaching art students fractal geometry Pesetskaya Tatiana and Zhylinskaya Tatsiana Presenter: Pesetskaya Tatiana Belarusian State University of Culture and Arts, Belarus</p> <p>Abstract-This paper discusses the challenges of learning in multicultural educational environment. It proposes approaches of using information technology tools such as on-line internet resources, mobile devices, mobile programs for calculations etc. in international students groups for teaching art students fractal geometry. Some exercises for easy comprehension of such mathematical concepts as self-similarity, iterative process, recursion, convergent and divergent sequences, infinite sequences are designed. The paper considers the phenomenon of using technology as medium of instruction in the international students groups. The challenge of considering and using the means of information technology when developing pedagogical tools, techniques and approaches to teach students in multicultural educational environment is posed.</p>
<p>CP3040 17:30-17:45</p>	<p style="text-align: center;">Learning Calculus with augmented reality and virtual environments Linda Margarita Medina Herrera, Marlen Aguilar Abalo, Saul Juarez Ordonez Presenter: Linda Margarita Medina Herrera Tecnologico de Monterrey, Mexico</p> <p>Abstract-In this paper, we present how spatial visualization skills can be developed in engineering students, using augmented reality and remote virtual environments in calculus courses. Two tools have been specifically developed for this purpose: AVRAM (Remote Virtual Environments for the Learning of Mathematics), which allows the visualization and manipulation of surfaces in a virtual three-dimensional space and ARC (Augmented Reality in Calculus), which uses activity cards for each multivariable calculus topic. This paper describes the type of skills that can be developed with the use of these two apps in the dynamic visualization framework and presents some activities that have the purpose of developing logical thinking and problem solving and spatial abstraction skills. More than 1200 students have used these apps. The results of their use in calculus classes indicate an increase in students' engagement, visualization skills and a significant improvement in final grades.</p>
	<p style="text-align: center;">Video games, homer to Hesiod: What ancient Greek content do video game players see?</p>

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<p>CP3108 17:45-18:00</p>	<p style="text-align: center;">Alan Garfield and Amy Manders Presenter: Alan Garfield University of Dubuque, USA</p> <p>Abstract-Studies suggest strong motivational effects of video games in educational environments. Rather than simply listening to lectures or viewing power point presentations, video games allow students to immerse themselves in a virtual world that they, in various ways, control and interact in and with. They become invested in their game world. But motivation notwithstanding, what do students really learn from these games? The literature is strangely silent on this question. This study examines ten popular video games (console, computer, mobile and internet) for their use of classical content. Does gamification really lead to content acquisition or is it mainly a strategy without direction? What are students learning about Ancient Greek mythology in these games?</p>
<p>CP3020 18:00-18:15</p>	<p style="text-align: center;">Virtual reality and collaborative interdisciplinary work in the development of competences Jorge A. González-M, Miguel X. Rodríguez-Paz, Eduardo Caballero-Montes Presenter: Jorge A. González-Mendivil Tecnológico de Monterrey, Mexico</p> <p>Abstract-The development of a competence not only implies that activities are carried out to fulfill a learning objective but that these activities obey the formation of the competence in a direct and organized way [1]. In addition, the development of the competition should not only be sought from the perspective of the professors who designed the activity, but from the perspective of the student who at the time, recognizes that this or that competition has developed in it. Working in a virtual environment has proven to be an excellent tool to train skills in its users, in the same way, we are sure that those who work in the design of it also develop important skills for their disciplinary and professional performance. The measuring of a competence has two main actors, the professor and the students the first one designs how to develop a competence and the second one performs the object designed, this paper will focus on the second actor. The way decided to develop a competence was the design of a 3D interactive virtual ambience to help people learn a simple task. This work presents a qualitative analysis of how a sample of 67 students acknowledge the development of three competences according to four levels, these levels vary from a basic level of a competence to a high achieved level. The results indicate that the students acknowledge a high level of developing such competences and this proves that this type of activities are an important approach to help not only students but people in general to assure that they have achieved a certain level of a competence.</p>
<p>CP3100 18:15-18:30</p>	<p style="text-align: center;">Make 21st Century Education: the importance of teaching programming in schools Shorena Abesadze and David Nozadze Presenter: Shorena Abesadze The University of Georgia, Georgia</p> <p>Abstract-During recent years, there are huge discussions regarding 21st century education; Experts, scientists, educational specialists offer different ideas, results, and conclusions about how to improve educational processes in schools and how to develop students' 21st century</p>

SESSION VI

skills; one of the important steps that have been taken in this direction is to introduce programming (coding) from the first grade as an independent subject in schools. The goal of this paper is to find out why it is important to teach programming in school. The main questions about this issue are: what are the reasons to teach programming? What are the main problems in the teaching process? How to teach programming? Answers to these questions are not always connected with each other and the teachers, who really create education in the classroom need much more precise and complete information to what to teach and how to teach. Because of these issues, we decided to research this field and share our own experience, which we believe is successful in our school: we teach programming through the project-based learning method. Using this method, it is possible to develop 21st century skills and teach the basics of computer science from elementary school. In this paper we will discuss about secondary school students; by the end of the project, the 10th grade students have solved one of the problems of the school community - they have created educational games on the topic of ecology; games were created by the request of elementary school teachers, and this year the games are successfully used in learning process.

Dinner @ Restaurant Romeo (G/F)

<18:40-20:30>

Note: Dinner coupon is needed for entering the restaurant.

SESSION VII

October 30, 2019

Session VII

[Student Ability Innovation and Training]

🕒 **9:30-12:15**

📍 **Sky Meeting Room 5 (3/F)**

Chaired by Dr. Fang Lou

University of Hertfordshire, UK

11 Presentations—

CP3027-A, CP1009, CP3022, CP3047, CP3083, CP3084, CP3096-A, CP3110, CP3113, CP4006,
CP1031-A

***Note:**

- Please arrive 30 minutes ahead of the sessions to prepare and test your PowerPoint.
- Certificate of Presentation 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>CP3027-A Video 9:30-9:45</p>	<p>Developing citizenship competencies from a playful approach in the classroom Martha Torres-Barreto, Mileidy Alvarez-Melgarejo and Maira Camila Paba Medina Presenter: Maira Camila Paba Medina Universidad Industrial de Santander, Colombia</p> <p>Abstract-Project management in the classroom encompasses innovation in educational models. "Loop" is a formal and structured playful exercise, which aims to foster citizenship competencies among university students, while integrating technical engineering concepts in the solution of social issues. Here, we present the results of the application of this gamification exercise in a sample of 140 bachelor students in Engineering, Natural Sciences and Social Sciences. Our results show an increase in the motivation of the students, a sensitization towards social issues and a propitious scenario to exercise skills in logical and critical thinking, decision-making, strategic planning and formal argumentation.</p>
<p>CP1009 9:45-10:00</p>	<p>Research on the model of graduates' innovative ability cultivation Yi Yang and Dekuang Yu Presenter: Yi Yang Southern Medical University, China</p> <p>Abstract-Innovative, composite and applied talents are the main guarantee for the development of economic construction and scientific and technological progress in the new era of our country. The cultivation of postgraduate innovation ability plays an irreplaceable role in satisfying the needs of China's modern development and cultivation of high-quality innovative talents with disciplinary characteristics. This paper analyzed the current situation and reasons for the innovation ability of graduate students in China, studied the mechanism of graduate students' innovation ability training, proposed the construction of graduate students' innovation ability training system, and put forward the idea of attaching equal importance to basic courses and interdisciplinary courses by setting up a scientific teaching system. We suggested combination of teaching activities with scientific research activities as to cultivate graduate students' interest and exploration spirit, and attach importance to measures such as the combination of school education and enterprise scientific research projects, and establish a long-term mechanism for the cultivation of graduate students' innovative abilities, with the result of improving the teaching level and education level of graduate students, and nurture more innovative talents with innovative spirit, practical ability and interdisciplinary cultural quality.</p>
<p>CP3022 10:00-10:15</p>	<p>How to increase the students' prosocial behavior in the era of technology? Abdul Kholiq and M. Solehuddin Presenter: Abdul Kholiq Indonesia University of Education, Indonesia</p> <p>Abstract-Development of technology affects many aspects of human life. One of them is its negative impact on prosocial behavior of students. This important behavior must be increased in order to help the students to live adaptively. This research employed qualitative method with ethnographic study and the data was collected through in-depth interview with many school counsellors in Indonesia. The results showed that to improve prosocial behavior can be</p>

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	<p>done in several ways, namely considering its urgency, the impact of technology on prosocial behavior, management of the influencing factors, and the services of guidance and counselling that utilize the enhancement of technology. Thus, the school counsellors are suggested to discover the effectiveness of the ways and invent another new technique to increase prosocial behavior.</p>
<p>CP3047 10:15-10:30</p>	<p style="text-align: center;">Developing social responsibility in university students Ingrid Fonseca, Milthon Betancourt, Juan Cobo, Jayson Bernate, Benjamín Barón Presenter: Ingrid Patricia Fonseca Franco UNIMINUTO, Colombia</p> <p>Abstract-Social responsibility is a component of economic and social sustainability that influences the quality of life of communities. Therefore, people must be the starting point, as they participate in solving the problems of society. In this process, the universities have a fundamental role because in them there is a relationship between academia and reality and they are agents of social change. In this way, university social responsibility emerges as a policy of performance, of students, professors and managers by influencing the loyalty, satisfaction and perception they have of HIEs. Consequently, it is a reflection of the curricula and substantive functions of universities (research, projection and extension). From this perspective, the objective of the study is to measure the level of social responsibility and commitment of the main actor of the educational process that is the student. The incidental sample of the research was 120 students aged between 18 and 38 years. In the study, the instrument used for data collection, called construction of Social Responsibility of the University Student (RSEU), consisting of 21 items. The results show that the level of social responsibility and commitment of students in general is high (4.70). With respect to the scores of the dimensions of the study, it should be taken into account that they are in the following order; professional practice from social commitment (4.98), personal discovery of values (4.74), item criteria (4.61), social responsibility training (4.60), commitment to others and the environment (4, 52). It is concluded that the students in the sample have a high level of social responsibility, taking into account the elements of vocation and service, teamwork and influence in the immediate environment. Similarly, the results show that the commitment to others and the environment, the search for the common good, empathy and service to the other, represent the elements with the lowest values. It is recommended that social responsibility permeates the entire curriculum and that academic programs offer subjects and courses that involve social, scientific and cultural activities in which students participate. Consequently, projects and activities that lead to sensitivity should be encouraged in academic programs and classes to strengthen skills such as leadership, creativity, tolerance, responsibility and self-esteem. According to the above, the university must prepare responsible professionals with a vision for the development of their immediate contexts, the construction of a country and a global world. This study invites us to rethink the need for more research in this regard.</p>
<p>CP3083 10:30-10:45</p>	<p style="text-align: center;">Measuring undergraduate science students satisfaction for the services provided by chemistry laboratories in SSRU university Chanyapat Sangsuwon and Netdao Yooyong Presenter: Chanyapat Sangsuwon</p>

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	<p style="text-align: center;">Suan Sunandha Rajabhat University, Thailand</p> <p>Abstract-The department of chemistry at Suan Sunandha Rajabhat University; Bangkok; Thailand has eleven laboratories room. The laboratory methods in fundamentals of chemistry are using three laboratories room and serves of 400 students which were programmed of applied biology, applied physics, biotechnology, chemistry, domestic science, food science technology, industrial microbiology, statistics science, mathematics science and environmental science. The study was conducted to measure the student satisfaction towards the services offered for four convenient for the instruments, chemical reagents, glassware, and ergonomics safety in the chemistry laboratory room. The questionnaires 400 papers were sent to the first year undergraduate students of The Faculty of Science and Technology, and were used as an instrument for collecting the data. The data collected were analyzed using percentage, mean and t-test statistical measures. The results showed the first year undergraduate students the satisfaction were 45, 50, 55, and 60% for the services of instruments, chemical reagents, glassware and ergonomics safety, respectively. The satisfaction showed range of fairly which showed the supporting tools must be improved continuously to meet the needs of the students as the users of the services and permit the learning lab works in the cause of chemistry laboratory.</p>
<p>CP3084 10:45-11:00</p>	<p style="text-align: center;">The children's congress: A benefit to all levels of schooling by strengthening computational thinking</p> <p style="text-align: center;">Sara Hinterplattner, Jakob Sebelin Skogø, Corinna Kröhn and Barbara Sabitzer</p> <p style="text-align: center;">Presenter: Corinna Kröhn</p> <p style="text-align: center;">Johannes Kepler University Linz STEM Education, Austria</p> <p>Abstract-The Children's Congress is an event, developed to meet a demand for strengthening computational thinking and to increase the interest in STEAM subjects. This congress brings teachers, university students and pupils together to work interdisciplinary on real-life problems. During these proceedings, the pupils slip into the role of researchers and scientists, supported by their teachers, university staff and university students. In every project team, at least one student from the Honors program of the Johannes Kepler University in Linz takes part. This support helps the pupils both in their projects and in their personal development, through mentoring by the talent students of the university. To find out more about these benefits and to improve the congress for the next years the Honors students were asked to give feedback after the congress. In these interviews, the Honors students described the Children's Congress as a very inspiring and motivating project for all the participants. The results show that the students experienced a lot of appreciation through the work with the pupils, and that they faced many new challenges. They see many benefits for the pupils, starting from the increasing academical knowledge to skills like team- and time management. Furthermore, the benefit of getting used to computational thinking was described. Besides the advantages for the pupils, benefits for teachers were mentioned. Overall, the results show that the Children's Congress successfully combines computational thinking, real-life problems, interdisciplinarity, project work and mentoring, benefitting all participants involved.</p>
	<p style="text-align: center;">The effectiveness of game design studios and robotics at enhancing women's domain identification with computer science</p>

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<p>CP3096-A 11:00-11:15</p>	<p style="text-align: center;">Ali Alshammari Presenter: Ali Alshammari University of Tabuk, Saudi Arabia</p> <p>Abstract-Arising from the idea that gender determines cognitive capacities and that male cognition is superior to female cognition is the belief that men excel over women at performing within certain disciplines, such as computer science (CS). The underrepresentation of women in CS is a serious issue with ramifications that affect, not only women working in the field but also, the field at large and the national economy. In an effort to eradicate the issue and move CS closer toward an egalitarian model, this presentation addresses several factors that contribute to the underrepresentation of women in CS, and demonstrates the impact of coupling constructionist gaming with studio pedagogy in a Game Design Studio (GDS) on students', especially women's, domain identifications with CS. The results compared the implementation of the GDS with robotics and traditional pedagogical practices.</p>
<p>CP3110 11:15-11:30</p>	<p style="text-align: center;">Holistic assessment of computational thinking for undergraduate: Reliability and convergent validity Debby E. Sondakh, Kamisah Osman and Suhaila Zainudin Presenter: Debby E. Sondakh Universitas Klabat, Indonesia</p> <p>Abstract-This paper reports a pilot test to a scale called 'Holistic Assessment of Computational Thinking (Hi-ACT. Hi-ACT is seven-point Likert type scale comprises 155 items, resulting form a consensus study completed earlier, which aimed at measure undergraduate students computational thinking skill. The questionnaire was piloted among fourth-year undergraduate students recruited from five faculties in two universities (N=548) in Indonesia. Structural equation modeling with partial least squares technique was followed to establish the factor structure of the scale. The internal consistency reliability was assessed using composite reliability. The convergent validity was evaluated based on two criteria, the outer loadings and the average variance extracted. Accordingly, 44 items that did not load properly on a particular construct were excluded, and the refined scale has confirmed its reliability and validity to the acceptable requirements.</p>
<p>CP3113 11:30-11:45</p>	<p style="text-align: center;">The effect of a flipped classroom in a SPOC: Students' perceptions and attitudes Zenun Kastrati, Arianit Kurti, Johan Hagelbäck Presenter: Zenun Kastrati Linnaeus University, Sweden</p> <p>Abstract-The advent of Massive Open Online Courses (MOOCs) and Small Private Online Courses (SPOCs) has brought opportunities to higher education institutions. Despite this, one of the main drawbacks of MOOCs and SPOCs has been relatively low retention rate of the registered students. Having this in mind in this paper we report our research efforts with a SPOC on Applied Machine Learning specifically tailored for professional students. More concretely, we report our findings with regard to the effects of the flipped classroom approach on the students' perceptions and attitudes. The initial results show that flipping the class had direct effects on students' knowledge and skills compared to a fully online class setting. These</p>

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	findings have offered complementary explanations of the survey regression analysis which revealed that course structure/instructional approach followed by course content are the main drivers in accounting for the variance in students' overall perceptions of the course.
CP4006 11:45-12:00	<p style="text-align: center;">An attempt to quantify a training session Czahajda Radoslaw Presenter: Czahajda Radoslaw Kozminski University, Poland</p> <p>Abstract-This paper summarizes pilot research that aimed to identify easy-to-measure indicators that could be used to quantify important constructs affecting training efficiency: participants interactions, mood, and engagement as well as training design. The results show there are differences between the level of these indicators among different training sessions and thus they could be used in further research to evaluate their relative impact on the training quality. Currently, the use of these indicators is limited as their relation to constructs measured was not yet proven. Moreover, the paper proposes a new way to evaluate trainer interaction during the session and points out directions for further research.</p>
CP1031-A 12:00-12:15	<p style="text-align: center;">Perceived benefits and drawbacks of learners in using corpora in second/foreign language learning: A review of the literature between 1990-2017 Huifen Lin Presenter: Huifen Lin National Tsing Hua University, Taiwan</p> <p>Abstract-A corpus is defined as a systematic collection of electronic texts. Pedagogically, tools and techniques offered by a corpus can be used by language learners and teachers to search for, identify, and explore uses of words, phrases, sentences, or even discourses. Research has suggested that by observing concordance lines of a target word used in various contexts, learners are able to “identify, classify and generalize” word use patterns, the process of which requires deeper information processing compared to being told the word usage, and therefore results in strong word retention (John, 1991, p. 4). This study aims to investigate the characteristics of corpus tasks or activities used in the primary studies and the perceived benefits and drawbacks of learners in using corpus to learn a foreign or second language by reviewing primary studies conducted between 1990 and 2017. The results suggested that the perceived difficulties reported in the literature have never been solved and that learner style, learning tasks and difficult level of the language used in corpus all combined to determine the benefits of corpus-based language learning. Also typical tasks used in the corpus classroom are of two kinds-research based and reference based. The former tasks demand much more cognitive loads than the latter one and instructors are advised to choose appropriate tasks on the basis of students' learning style.</p>

Lunch @ Restaurant Romeo (G/F)

<12:15-13:30>

Note: Lunch coupon is needed for entering the restaurant.

SESSION VIII

October 30, 2019

Session VIII

[Learning Mode and Method]

🕒 **9:30-12:00**

📍 **Sky Meeting Room 6 (3/F)**

Chaired by Prof. Mircea-Florin Vaida

Technical University of Cluj-Napoca, Romania

10 Presentations—

CP3072, CP3073, CP3013, CP3030, CP3063-A, CP3065, CP3095-A, CP3121, CP3077, CP1002

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<p>CP3072 9:30-9:45</p>	<p>Using dynamic learning process to solve science subject- learning problem in undergraduate study in Thailand Jaruwan Chutrtong, Waradoon Chutrtong and Somporn Tiyasri Presenter: Jaruwan Chutrtong Suan Sunandha Rajabhat University, Thailand</p> <p>Abstract-This paper emphasizes the importance of the dynamics of group learning process. Firstly, we provide an overview of the classroom understanding the concept of hazard analysis. Investigating the level of understanding of the concept by the written test, only 20 percent of third-year university students were consistently able to apply this concept. Learning Together (LT) model was used subsequently. The five discourse groups of four students were observed. Within-group and across-group comparisons were made. It was determined that students became much better at using the scientific method after construct convincing arguments. Students could develop conceptual understanding of the issues by themselves. They can process ideas in systematic way and can explain it better. Based on the results, it shows that using dynamic learning process make better learning results.</p>
<p>CP3073 9:45-10:00</p>	<p>A context model for intelligible explanations in adaptive personalized learning environments Mandy Goram and Dirk Veiel Presenter: Mandy Goram FernUniversität in Hagen, Germany</p> <p>Abstract-Supporting user friendly intelligible and comprehensive explanations in context-based, adaptive systems is a big challenge. They are important for a personalized system to support user acceptance and user trust. In cases, where privacy laws like the General Data Protection Regulation (GDPR) are affected, it's even more challenging. GDPR e. g. demands explanations of data usages, i. e. explanations where and for what purpose personal data is being processed. Currently, users cannot retrace the usage and the storage of their personal data in context-based adaptive collaboration environments. We address the aforementioned problem by developing a context-based adaptive platform linked to an adaptive personalized learning environment (APLE) to support learners with intelligible, comprehensible explanations of system processes.</p>
<p>CP3013 10:00-10:15</p>	<p>Assessing the effectiveness of teaching anatomy with virtual reality Mildred V. López Cabrera, José Gerardo Carrillo, Juan Pablo Nigenda, Ricardo Treviño González, Jorge E. Valdez-García, Belinda C. Carrión Chavarría Presenter: Mildred Vanessa López Cabrera Tecnologico de Monterrey, Escuela de Medicina y Ciencias de la Salud, Mexico</p> <p>Abstract-When performing medical procedures, physicians must rely on their mental representations to understand complex internal structures that are not directly visible on the skin. In their training, this knowledge is acquired through the study of two-dimensional images. Currently, virtual reality (VR) is revolutionizing the teaching-learning process because it offers an experiential, low cost and easy to manage alternative for teaching anatomy. Especially if compared with performing cadaveric practices. The objective of the study was to assess the effectiveness of virtual reality for teaching anatomy. The design was quantitative</p>

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	<p>and quasi-experimental. Three groups were defined for analysis: the self-directed practice of VR, an instructor lead practice of VR, and the control, no VR. The sample consisted of 120 medical students in their second year of the program. A descriptive research scope was defined. The results indicate that VR had a positive impact on learning of the spatial location of anatomical structures. The students found innovation motivating and engaging. It is necessary that medical educators establish and consolidate standards for the implementation and assessment of VR, in order to guarantee an educational experience that guarantees the achievement of learning objectives of trainees.</p>
<p>CP3030 10:15-10:30</p>	<p>A scaffolding design for pedagogical agents within the higher-education context Ati Suci Dian Martha, Harry Budi Santoso, Kasiyah Junus and Heru Suhartanto Presenter: Ati Suci Dian Martha Universitas Indonesia, Indonesia</p> <p>Abstract-The use of scaffolding in the design of pedagogical agents has been carried out by many researchers and has a significant impact on online learning. However, how scaffolding by pedagogical agents is applied to individual and group settings is not clearly understood. The scaffolding design in this study consists of a integration of metacognitive scaffolding and motivation scaffolding. The integration of scaffolding will be utilized by a pedagogical agent to facilitate blended learning in a higher education context and we will evaluate the effectiveness of our pedagogical agent model using a quasi-experiment. In this research, we design scaffolding for pedagogical agents within the higher-education context.</p>
<p>CP3063-A 10:30-10:45</p>	<p>To enhance learning effectiveness for small private online courses by increasing learning attitude Chien-I Lee and Cheng-Yi Lu Presenter: Chien-I Lee National University of Tainan, Taiwan</p> <p>Abstract-The advent of information technology has impacted the trajectories of social and cultural development, and revolutionized the education and the types of jobs in the future. Students now have a vaster learning scope and enjoy a larger array of easily accessible resources for learning. Thus, building a sound infrastructure for information technology would effectively level the playing field in the realm of education, allowing such materials to be freely uploaded and downloaded by anyone for anyone. Massive Open Online Courses (MOOCs) becomes a well-known champion of the flipped classroom strategy, which platform allows for greater connectivity and interaction between students and their peers as well as educators and their students and enabled students to continue learning outside the physical classroom. Despite MOOCs open accessibility to its learning resources, students themselves have to be proactive in their learning progress. The resulting low course completion rate is thus an unavoidable problem. In order to solve this problem, this paper divided the students into two groups and made watching the pre-class videos into a competition. The aim was to raise the number of video views. Results from the study showed that using our new pedagogy to teach students about butterflies and their ecology was clearly superior to traditional pedagogy. In addition, results showed that under our new pedagogy, the number of video views and the willingness to watch them were significantly higher.</p>

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<p>CP3065 10:45-11:00</p>	<p>Student learning achievement through augmented reality in science subjects Kunyanuth Kularbphettong, Rujijan Vichivanives and Pattarapan Roonrakwit Presenter: Kunyanuth Kularbphettong Suan Sunandha Rajabhat University, Thailand</p> <p>Abstract-Augmented Reality or AR is a new technology that combines the real world with the virtual world through the smart technology devices. Using Augmented Reality technology to manage learning in classrooms is a new dimension in educational media and students give attention in learning. Teaching and learning of science subjects is challenging to make students understand when there are limited of equipment and student do not practice by his/herself. Now Thailand is facing with an education crisis and needs to reform education by focus on critical thinking skills. Therefore, this research proposes learning model by using AR technique and game based learning to enhance students' ability and data was collected both questionnaire and log data from e-Learning and e-Learning class activities consisted of the ability to perform problem analysis and design, development and testing, and evolution and testing. The participants were 200 teachers and students in the secondary school in Bangkok and surrounding areas who had applied the Augmented Reality (AR) in science subjects. The results showed that the mean score of posttest was significantly higher than the pretest and the average mean score of exercises was at a high level. To evaluate the result of students' attitudes toward learning via the proposed model, the questionnaire and interview form were applied to test students and the finding revealed that this proposed model are effective tools to learn and enhance self-practice and syntactic coding and problem-solving ability and student have positive attitudes to-wards learning model.</p>
<p>CP3095-A 11:00-11:15</p>	<p>A contextualized blended learning approach to using screen captures on a rural campus in South Africa Marthinus Delport Presenter: Marthinus Delport University of the Free State, South Africa</p> <p>Abstract-Educational institutions are increasingly moving towards technology mediated learning strategies with the aim of enhancing student engagement and success. Yet, despite its popularity few studies have integrated engagement theories with contextual factors that impact the quality of learning of students.</p> <p>Due to the high levels of poverty in South Africa, the academic endeavors of many students are being stifled because of non-conducive home environments. Students are plagued with challenging living conditions and financial concerns, while having to constantly deal with personal and family circumstances. These challenges are typically amplified when students reside off campus in a rural environment as they have limited interaction with other students and limited access to library and internet facilities</p> <p>This current study investigates the effectiveness of a contextualized blended learning approach to teaching in higher education on a rural campus in South Africa, with specific emphasis on the use of screen captures, collaborative learning techniques and exit tickets to enrich the learning experiences of students.</p> <p>A mixed method quasi-experimental cohort design was used to investigate student</p>

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	<p>perceptions as well as the impact of the intervention on academic performance. Findings revealed that students found screen captures and exit tickets helpful in improving learning and that the intervention significantly improved final marks and pass rates in the affected module. Implementation considerations are also discussed followed by limitations of the study and recommendations for future research.</p>
<p>CP3121 11:15-11:30</p>	<p>System for visually organizing documents and histories involved with research work aimed at sustainably cultivating learning strategies Shoichi Nakamura, Ryo Onuma, Hiroki Nakayama, Tsubasa Shimoyama, Hiroaki Kaminaga and Youzou Miyadera Presenter: Shoichi Nakamura Fukushima University, Japan</p> <p>Abstract-The importance of project-based learning has increased. However, existing systems and methods have not been effective enough at taking advantage of past experiences for progressive learning, which is one of the most promising approaches. In practical work situations, suggesting and recalling experiences with intuitive expressions such as “like that case” is often successful. In this research, we focused on the fact that examining learning/teaching strategies tend to close by each piece of work and issue. To solve this problem, we developed methods for accumulating and organizing documents and work histories involved with research activities. In this paper, we mainly describe a system for organizing the experience cases into visual sheets. We also discuss the characteristics of our methods on the basis of the results of experiments.</p>
<p>CP3077 11:30-11:45</p>	<p>Students’ perception on data sources from outside virtual learning environment for learning analytics Andharini D. Cahyani; Lindsay Marshall; Matthew Forshaw Presenter: Andharini Dwi Cahyani Newcastle University, UK</p> <p>Abstract-Every time a student interacts during their learning, they leave behind a digital footprint. The process of using this data to improve learning and teaching is called as Learning Analytics. Researches in this field grow and are more popular, specifically that usage of data outside the Virtual Learning Environment. Although often proposed data in previous research use students' personal data, their perception of the usage of those data is still underexplored. This study investigates higher education students' understanding of how useful the proposed data might be helpful as their input. Our study reveals that all degree level students (Undergraduate, Master, and PhD) participated in this research consider information from self-declared and tracker app as the most useful information. Furthermore, we may also notice that all top-five most sensitive data sources in all degree level responses are also from self-declared and tracker-app category.</p>
	<p>Analyzing the impact of introducing active learning in a blended educational environment Enosha Hettiarachchi Presenter: Enosha Hettiarachchi University of Colombo School of Computing, Sri Lanka</p>

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CP1002 11:45-12:00	<p>Abstract-In large classrooms, keeping students active for a prolonged period is a difficult task. Studies have shown that students can keep their attention active for a shorter duration such as 15-20 minutes. Thus, the importance of introducing active learning techniques to classrooms has arisen. Active learning will ultimately lead to students being deep learners. However, most of the lectures consist of 30-hour face-to-face sessions where students meet the lecturer for only 2 hours per week. Therefore, only introducing active learning in a face-to-face session, will not make students become self-directed deep learners. As a solution to this, active learning techniques can also be introduced in the online environment using a Learning Management System (LMS). This paper focuses on analyzing the impact of introducing different active learning techniques to promote deep learning in an Undergraduate Computer Science course conducted in a Blended Learning environment. The impact was analyzed using a mixed-method approach with respect to the student's active involvement, engagement, and performance in the assessments. For quantitative analysis, data obtained in the form of assessment marks, statistics based on three-most important points covered in the lecture, students feedback based on Likert and three-point scale questions, and LMS logs were used. For qualitative analysis, students' perceptions and observation techniques were used. Based on the results, it shows that students have actively participated in all activities in both the online and the face-to-face environment, and they also had good perceptions about the techniques introduced. Students' learning process has improved after introducing active learning techniques. Also, introducing formative assessments for active learning has a significant effect on the final examination.</p>
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Lunch @ Restaurant Romeo (G/F)

<12:15-13:30>

Note: Lunch coupon is needed for entering the restaurant.

POSTER

[October 29, 2019]

9:50-10:20



Poster Display



Sky Meeting Room 6 (3/F)

Chaired by Prof. Joy Kutaka-Kennedy, National University, USA

<p>CP3009</p>	<p>Impediments to online learning acceptance in two developing international locations ¹Solomon Oluyinka Ayodele and ²Endozo Anatalia ¹Baliuag University, Philippines ²Angeles University Foundation, Philippines</p> <p>Abstract-Several studies claimed that the benefits of online learning cannot be ignored, the statement yet endorsed in most of the developing countries. However, this current study compared online learning acceptance within the context of two developing international locations. Technology acceptance model adopted to recommend and compare impediments to learning through the use of technology among learners in Nigeria and Philippines. Version three of SmartPLs utilized as the statistical instrument to scrutinize over 1300 respondents. Hypothesized; the impact of electric power, technical resources, simple to use and perceived usefulness on learning through the technology found significant. Furthermore, the total variance explained of 53% for Nigeria and a total of 50 % variance explained achieved in the case of the Philippines. Impact of electric power regressed on the simple to use also supported in both models. Thus, replication of this study might also increase the generalizability of the results achieved.</p>
<p>CP3015</p>	<p>Teachers' experiences towards usage of learning management system: CANVAS ¹Anatalia N. Endozo, ²Solomon Oluyinka and ²Richard G. Daenos ¹Angeles University Foundation, Philippines ²City College of Angeles, Philippines</p> <p>Abstract-The automated way of learning and interacting with students bids a lot of advantages that can be accomplished through different system. Among them, the most popular approach is the use of a learning management system. Canvas, the world's most reliable LMS is a platform being introduced in universities of the Philippines. This research aims to examine the experiences of instructors towards usage of Canvas according to the UTAUT (Unified Theory of Acceptance and Use of Technology) model. A total of 130 instructors teaching different courses and are exposed to the use of CANVAS participated in this study. An adopted and modified set of questionnaire based on UTAUT used to collect data which is then descriptively analyzed using SmartPLS 3. Results of this study encourage teachers to maximize the use of technology. Significant results and information were also obtained for administrators, instructors and students on how to improve effective usage of the system.</p>
<p>CP3023</p>	<p>Reform and practice path of composite personnel cultivation model for postgraduates</p>

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	<p style="text-align: center;">Yi Yang and Dekuang Yu Southern Medical University, China</p> <p>Abstract-Postgraduate education of professional degree aims to cultivate innovative talents with both theory and practice capabilities. In order to achieve the training goal and enhance students' engineering practical ability and innovative spirit, this paper proposed a reform plan, including design of integrated training methods for graduate education of professional degrees, reconstruction of core courses and teaching content, building of a three-stage personnel training process, carrying out of distinctive project training by a multi-level joint training support platform, and implementation of a school-enterprise collaborative process guidance and evaluation mechanism.</p>
CP3052	<p style="text-align: center;">The effects of individual preparations on group creativity ¹Shijuan Wang, ¹Ruochi Li, ¹Dongqian Ma and ²Huichen Gao ¹Central China Normal University, China ²Hokkaido University, Japan</p> <p>Abstract-Although group creativity is considered to be a better way to generate creative ideas than individual creativity, it refers to two situations—individual creativity within the context of a group and group-level creativity. Many researches have discussed how to increase individual creativity within a group, however, the generating mechanism of group-level creativity needs more research. During group creativity process, members' ideas probably cannot be recognized and appreciated. However, if the individual preparations are relatively complete, the results might be different. In this paper, we investigated relatively complete preparations' effects on group creativity with the help of attentions collected by MindWave. Results showed that the relatively complete individual products were actually helpful to increase the originality and profundity of group creativity. The reasons were discussed.</p>
CP3079	<p style="text-align: center;">Bug report summarization: A systematic literature review Muhammad Irtaza Nawaz Tarar, Mubashir Ali, Wasi Haider Butt National University of Sciences and Technology, Pakistan</p> <p>Abstract-Natural language Processing techniques have been proved very helpful in optimizing the software development process. It has improved the accuracy and speed of different steps of development process. Summarization of software artifacts is one of application of natural language processing techniques to help the developers or testers. Summarization tools and techniques have been applied to many software artifacts in the past like source code, discussions and bug reports. In this paper, we present a systematic literature review of the natural language processing techniques applied for the summarization of bug reports. Bug reports are very important for development process because these have valuable knowledge of the problems and their resolution. By summarizing bug reports, a lot of developer's time can be saved during bug triaging when developers are looking for the similar problems from the past. Bug report summarization is done by various methods and techniques and it have helped the developer to save their time and better understanding of the problem at hand. This survey of the past techniques used for the summarization of bug reports will provide useful and wide background knowledge of this research field to the future researchers.</p>

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<p>CP3115</p>	<p style="text-align: center;">Fusion of research project in undergraduate subject course teaching: The case of south China university of technology</p> <p style="text-align: center;">¹Aihua Mao, ¹Xingming zhang, ¹Yupei Lin and ²Jie Luo</p> <p style="text-align: center;">¹South China University of Technology, China</p> <p style="text-align: center;">²Guangzhou University, China</p> <p>Abstract-With the promotion and accomplishment of the plan of “Emerging Engineering Education” construction issued by the Ministry of Education of China, the South China University of Technology (SCUT) has carried out the "exploratory experiments" teaching project to support the reform of practical teaching contents, which fuse the contents of research project into the undergraduate subject course teaching. It is helpful to develop students' practical and creative ability by applying basic knowledge to solve scientific research problems. Supported by this project, the course of computer graphics has implemented such teaching reform and exploration, which divide the contents of the research project undertaken by teachers into the contents of experimental teaching, and students involved this teaching reform has assessments of different aspects on the teaching effect. This paper thoroughly addresses the issues exposed in the actual teaching in the course of computer graphics, and then describes the specific content fusion of research into course teaching and also the teaching implementation. According to the statistics of students' teaching feedback, the fusion of research project in the course teaching has achieved good effect.</p>
<p>CP3117</p>	<p style="text-align: center;">Design and implementation of virtual simulation experiment for generation, transmission and application of Electric power</p> <p style="text-align: center;">Xueqin Zhang, Jirong Song and Zhenpo Li</p> <p style="text-align: center;">East China University of Science and Technology, China</p> <p>Abstract- Power system is an important knowledge point in the course of Electrotechnics. In order to solve the difficulties in the experiment of power system, the virtual simulation technology was introduced into the experimental teaching. a virtual simulation experiment system named " Generation, transmission and application of electric power " based on offshore wind power generation was constructed. The design idea, scheme, content, method and platform of the experimental teaching are elaborated in detail. Through this experiment, student can not only learn the "generation-transformation-transmission-distribution-application" whole process of electricity, but also associate the knowledge points learned in the theoretical course with the actual application scenarios. The student can carry out experiment on the virtual experimental platform just like in the real scene. This method can effectively improve the effectiveness of experimental teaching and cultivate the practical ability of student.</p>
<p>CP4011</p>	<p style="text-align: center;">Assistant teaching of linear algebra based on geometric interpretation and practical application</p> <p style="text-align: center;">Li Wang, Xiqiang Liu, Gui Zhang</p> <p style="text-align: center;">Army Engineering University of PLA, China</p> <p>Abstract-Linear algebra is not only a powerful tool in dealing with the problem of multi-variables, but also strongly logical. Students always feel that linear algebra is abstract, boring, and difficult to understand. For the teaching of linear algebra, the instructional design of linear algebra that combining the geometry intuition and practical application is</p>

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	<p>proposed to help students understand the abstract knowledge. As an example in our teaching process, the geometric interpretation of matrix, similar matrices, eigenvalues and eigenvectors are given in turn. This teaching method aims to help students shift perception from visual to abstract and thus improve the teaching efficiency of linear algebra. The practical application of eigenvalue in image compression, i.e. Karhunen-Loeve transform, is presented. It is advantages to promote students' motivation in learning and cultivate their abilities in using mathematics to solve practical problems.</p>
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