The Singapore Education
Technology Conference

The Singapore Education Technology Conference 2018

PROGRAMME & ABSTRACT BOOK

O Organised by East Asia Research

S Supported by Siam University

S Sponsored by MDPI

Programme Book

30th August 2018

Venue: Holiday Inn Singapore Atrium Level 3 (Seletar Ballroom)

REGISTRATION: 09:30 – 09:50

SETC 2018 OPENING: 09:50 – 10:00

Professor Emeritus Dr. Chanita Rukspollmuang

Vice President in Academic Development

Siam University

KEYNOTE SESSION 1: 10:00 – 10:45

'Designing Education for Students in the New Normal Age'

Professor Emeritus Dr. Chanita Rukspollmuang

Vice President in Academic Development

Siam University

COFFEE BREAK: 10:45 – 11:15

KEYNOTE SESSION 2: 11:15 – 12:00

'Using artificial intelligence to improve learner engagement and motivation'

Jim Wagstaff

Co-founder and Managing Director of Jam Factory

LUNCH: 12:00 – 14:00

Room: Seletar Ballroom

Session Chair: Tshepo Batane , University of Botswana, Botswana

Factors Influencing College Students' Acceptance of Push Communication Technology as a Means of Receiving Course-Related Content
Lars Leader, Valdosta State University, United States; Eric Kobbe, Georgia College and State University, United States

Students' perceptions of the use of Kahoot, Padlet and Poll-Everywhere applications on a Contemporary Sexuality Course
Suthanya Doung-In, Walailak University, Thailand

Students and Academics Behavioural Intentions to Use M-Learning Forums in an E-Learning and Distance Course: A UTAUT Analysis and Structural Equation Modelling
Ratna Marta Dhewi, Universitas Terbuka, Indonesia; Hendrian Martunus, Universitas Terbuka, Indonesia

COFFEE BREAK: 15:00 – 15:30

SESSION II: 15:30 – 17:30

Room: Seletar Ballroom

Session Chair: Dr. Lars Leader, Valdosta State University, United States

Design of an Icon-driven Augmentative and Assisted Communication System for Children experiencing Difficulty with Speech and Language.
Ravi Poovaiah, IDC School of Design, IIT Bombay, India; Ajanta Sen, Solar Project, India; Sudha Srinivasan, IDC School of Design, IIT Bombay, India

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POSTER SESSION: 10:00 – 10:30

Development of an Authentic Blended Learning Programme for the preparation of Biotechnology students for Work-Integrated Learning at the University of Johannesburg, South Africa

Kevin Maclean, University of Johannesburg, South Africa

Competency Diagnosis between Curriculum Maps and Vocational Needs– The Case of a University of Technology in Taiwan

Tao-Ming Cheng, Chaoyang University of Technology, Taiwan, Hsing-Yu Hou, Chaoyang University of Technology, Taiwan; Dinesh Chandra Agrawal, Chaoyang University of Technology, Taiwan

Learning Support Website for Physics by Utilizing Simulations

Keita Nishioka, Kanazawa Institute of Technology, Japan; Tomoshige Kudo, Kanazawa Institute of Technology, Japan; Akira Nakamura, Kanazawa Institute of Technology, Japan

Learning Effect in VR-based Anatomy Class

Mun Young Lee, Honam University, South Korea

COFFEE BREAK: 10:30 – 11:00

Room: Seletar Ballroom

Session Chair: Professor Emeritus Dr. Chanita Rukspollmuang, Siam University, Thailand

Investigating the motivational effect of ICT on students in the Normal (Technical) stream: An insight into Singapore's Student Learning Space (SLS)
Jia Jun Justin Ng, Springfield Secondary School, Singapore; Shu Ling Judith Ho, Springfield Secondary School, Singapore

Investigating the Impacts of the Learning and Communication Strategies Instruction on Thai University Students' Speaking Ability
Mintra Puripunyavanich, Language Institute of Thammasat University, Thailand; Kittitouch Soontornwipast, Language Institute of Thammasat University, Thailand

My Speaking Apps: Non Face-To-Face (NF2F) Medium of Learning in 4.0 Education
Fazilawati Harun, Kedah Engineering Matriculation College, Malaysia; Supyan Hussin, National University of Malaysia, Malaysia

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Maria Puspa Sari, Politechnic of Akamigas Palembang, Indonesia

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Session Chair: Fazilawati Harun, Kedah Engineering Matriculation College, Malaysia

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Abstract Book

REGISTRATION: 09:30 – 09:50

SETC 2018 OPENING: 09:50 – 10:00

Professor Emeritus Dr. Chanita Rukspollmuang

Vice President in Academic Development

Siam University

KEYNOTE SESSION 1: 10:00 – 10:45

'Designing Education for Students in the New Normal Age'

Professor Emeritus Dr. Chanita Rukspollmuang

Vice President in Academic Development

Siam University

Abstract

Our world is changing at an accelerating pace. It now seems that the "old normal" is overtaken by the "new normal". The term "new normal" arose from the economists and policy makers with reference to financial conditions following the financial crisis of 2007-2008 and the aftermath of the 2008–2012 global recession. This term has since been used in a variety of other contexts, including education and technology, to imply that something which was previously abnormal has become commonplace. It is indeed time to rethink about "education" - "what", "why", "where", "when", "who", and "how". The "new generation" students hold different values about education prefer new learning methods, and need more freedom. Developing curriculum for the next generation can no longer be top down. It is vice versa. We should understand their needs and learning behaviors before designing curriculum, course content, learning materials and media which must be technological based. Taking into accounts the "new normal in education" trend along with other important factors such as the Thai national education reform policies, the new constitution, the new long-term national development strategic plan, and the latest policy on "Thailand 4.0", Siam University decided

to redesign our general education curriculum. A group of researchers employed a mixed-methods study, using document research, expert interview, and a survey. Data of the needs assessment questionnaire were collected from 440 students and 160 instructors (5% margin of error and 95% confidence level, Krejcie and Morgan, 1970). Differential value between desirable and current skills/literacy/characteristics needed for the students were assessed. The data was ranked by Modified Priority Needs Index (PNI Modified). In case the results from PNI Modified were at the same value, Priority Needs Index (PNI) would be considered (Wongwanich and Wiratchai, 2005). It was found that both students and instructors agreed that the most needed skill was Thai and foreign languages proficiency (PNImodified = 0.33, 0.45) followed by time management (PNImodified = 0.22, 0.44). As for literacy, both students and instructors indicated that the students needed political and legal literacy (PNImodified = 0.25, 0.39) the most, followed by financial literacy (PNImodified = 0.21, 0.38). The students also identified leadership and initiative skills as most needed characteristics (PNImodified = 0.22), followed by tolerance to uncertainty and ambiguity (PNImodified = 0.20). Eighteen topics were proposed to be included in the general education curriculum. Both students and instructors recommended that the university make some changes in the teaching and learning process as well as evaluation. A new student-based and research-based general education curriculum was then designed. "Freedom and Wisdom" slogan was proposed as the framework of the new program. The students will have more freedom to choose courses in accordance to their needs and interest. Selected numbers of faculty members were retrained in various methods of teaching. The university offered 17 pre-semester courses in relation to the proposed topics. The results were very positive and we are in the process of finalized our revised general education curriculum. It is truly time to adapt or be disrupted.

COFFEE BREAK: 10:45 – 11:15

KEYNOTE SESSION 2: 11:15 – 12:00

'Using artificial intelligence to improve learner engagement and motivation'
Jim Wagstaff

Co-founder and managing director of Jam Factory

Abstract

As cutting-edge developments in artificial intelligence (AI) rapidly become more mainstream, various AI applications are being widely adopted across multiple industries and businesses. Education is no exception as various applications of AI like machine learning, deep learning, advanced analytics, and natural language processing are now becoming more common in educational settings of all types. In fact, a frequent topic of popular discussion is when and how AI might automate many of the things that educators do. According to recent work published by the consulting firm McKinsey & Co., between 15% and 50% of these sorts of tasks can be automated. However, apart from being able to perform certain repetitive tasks that are normally carried out by humans, what about the ability of AI to assist educators, and extend the capabilities of these educators, as they seek to address issues of learner engagement and motivation? Artificial intelligence is widely viewed as the "engine" for what has been termed the Fourth Industrial Revolution. Education, like all other sectors, is being impacted by the Fourth Industrial Revolution. In this context, we will examine some of the key use cases for AI when applied toward tackling problems related to learner engagement and motivation in professional and lifelong learning settings.

LUNCH: 12:00 – 14:00

Room: Seletar Ballroom

Session Chair: Tshepo Batane , University of Botswana, Botswana

Factors Influencing College Students' Acceptance of Push Communication Technology as a Means of Receiving Course-Related Content

Lars Leader

Valdosta State University

Eric Kobbe

Georgia College and State University

Abstract

The purpose of this study was to identify the factors that influence college students' acceptance of push communication (i.e., email and SMS messaging) as a means of receiving course-related content. This research combined mobile learning models and technology acceptance theories, along with push communication literature, to identify the factors that impacted students' reception of push technologies. In the Unified Theory of Acceptance and Use of Technology (UTAUT) model, performance expectancy, effort expectancy, social influence, and facilitating conditions are all independent variables that are used to measure an individual's intention to use a certain technology. Venkatesh et al. (2003) observed that the UTAUT model provides a tool to "assess the likelihood of success for new technology introductions" (p. 426). At the time of the present study, there were no known models that analyzed instructor-sent texts and emails, when scheduled message was an independent variable, for their impact on students' intention to use these push communication technologies.

The study was conducted through two state universities, one in the southeastern U.S. and one in the midwestern U.S., and six professors with a total enrollment of 343 students in Business classes. Surveys were pushed to each student via email and SMS text messaging, with 301 students opting to participate in the study. Descriptive statistics, correlation analysis, and structural-equation path modeling were used to analyze the survey results. Also, chi-square tests were used to determine any significance to the students' usage patterns for each type of push communication, email and SMS, as measured with Google Analytics.

Four research questions were accompanied by sixteen hypotheses derived from review of the literature pertaining the focus of this study. Seven of the hypotheses were confirmed by analysis

of collected data. The first hypothesis was that effort expectancy would have a significant impact on a student's intention to use push communication as a means to receive course-related content, which was supported by the survey results. The results indicated that students' perception of ease of use had a significant positive effect on their acceptance of push communication (within a 95% confidence interval). Hypothesis two, that performance expectancy would have a significant impact on a student's intention to use push communication, was also supported (within a 95% confidence interval)). It is logical that students who believed that they would attain gains by using push technology would choose to accept it. Of most importance to this study was hypothesis four, which stated that scheduling messages would have a significant impact on a student's intention to use push communication. This hypothesis was not supported. It appears that the pushed content was rendered accessible because of the flexibility of the email and text message formats, regardless of whether or not the communication was scheduled.

The usage patterns of the students were analyzed by means of Google Analytics embedded in course HTML landing pages. Hypothesis ten, that course-related content delivered via SMS at pre-determined times would yield higher average student session durations than content pushed at random times, was supported ($p < .01$). By the convenience and ease of access to a well-scheduled pushed form of communication, students kept the course content pages made available by scheduled text messages open much longer than the pages accessed by randomly sent text messages.

This study added to the body of existing knowledge, with the results demonstrating that both email and text messages containing course-related content pushed at scheduled times have positive results. It is ineffectively limiting to expect that the educational experience of students, especially within the studied age group (18-22 years old), be kept within the classroom. Students not only respond to, but also actively incorporate, pushed material. Instructors can improve the quality of their students' education by extending courses with the use of media such as SMS and email.

Students' perceptions of the use of Kahoot, Padlet and Poll-Everywhere applications on a Contemporary Sexuality Course

Suthanya Doung-In

Walailak University

Abstract

This paper discusses a case study where digital formative assessment tools were used on a Contemporary Sexuality course at Walailak University. The purpose of the study was to investigate students' perceptions of the following tools: Kahoot, Padlet, and Poll-Everywhere. Twenty-five undergraduate students (purposive sampling) who had registered on the course in the second semester of 2017 completed a questionnaire. The three digital formative assessment tools were applied with an experiential learning (EL) approach to increase students' engagement and enhance learning outcomes. The results showed students' perceptions of using online digital tools as part of the EL approach was generally positive, with Kahoot being the most favorable application, followed by Padlet and then Poll-Everywhere. An overall evaluation of the use of digital formative assessment tools showed that the mean rating given by students on a five-point scale was 4.56 (n=25, SD=0.65). The course was therefore well received. The students found the digital tools very useful for mastering the content. Additionally, an analysis of open-ended survey responses clarified the different merits students perceived as arising from each activity. The variations provided by the experiential learning design of the course served to meet their learning needs and were experienced as fun.

Students and Academics Behavioural Intentions to Use M-Learning Forums in an E-Learning and Distance Course: A UTAUT Analysis and Structural Equation Modelling

Ratna Marta Dhewi

Universitas Terbuka

Hendrian Martunus

Universitas Terbuka

Abstract

The mobile learning (M-Learning) has supplemented E-learning courses. It encourages educators and students to conduct teaching and learning while they are on-the-go. Regardless the benefits, M-Learning encounter many challenges. For instance, in online moodle tutorials and M-learning forums, students and tutors face asynchronous communication which sometime delays in supporting an ongoing learning process where students need quick feedback and information. This might lead to learning demotivation and ineffectiveness of E-

Learning process. This study is then aimed to explore challenges of M-Learning and analyse the relationship of students' attitudes and willingness to use M-Learning forums. In doing so, this study conducts a survey in E-learning courses at Universitas Terbuka (UT). This study, based on the Unified Theory of Acceptance and Use of Technology model (UTAUT), examines Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), and Liabilities Intentions (LI)). This research uses a quantitative method. Structural equation modelling is used as the main technique for data analysis. The participants are 69 tutors and 136 students randomly selected representing UT's academia. The results indicate that FC and LI significantly influence the intention to participate in the M-learning forums. The theoretical and practical implications of the model are discussed.

COFFEE BREAK: 15:00 – 15:30

SESSION II: 15:30 – 17:30

Room: Seletar Ballroom
Session Chair: Dr. Lars Leader, Valdosta State University, United States

Design of an Icon-driven Augmentative and Assisted Communication System for Children experiencing Difficulty with Speech and Language.

Ravi Poovaiah

IDC School of Design, IIT Bombay

Ajanta Sen

Solar Project

Sudha Srinivasan

IDC School of Design, IIT Bombay

Abstract

With the emergence of new technologies has arisen the opportunity to augment certain debilitating life situations through assistive technologies. This paper presents the design of an Icon-driven Communication System called 'Jellow' that was created by us through our innovative solution called Emotional Language Protocol (ELP), to assist children afflicted with

cerebral palsy or autism or any other speech-related disabilities to be able to communicate with the outside world and in turn learn the language for communication.

The 'Jellow' Communicator is a friendly Augmentative and Alternative Communication (AAC) solution that uses icons to aid communications in children learning to speak or those with already existing difficulty with speech and language. The easy-to-learn interface comprising visual icons makes it a solution for beginner-level communicators (as part of their early childhood education) especially children in the age group of 3 to 9. That this can also extend to adults with speech difficulties is part of our ongoing research.

A novel visual Emotional Language Protocol (ELP), conceived in order to enhance the language learning through parallel use of visuals, texts and sounds, drives the 6 core expressive icons of the Jellow's interface. Using these 'core' buttons along with the 'central category' buttons, the user can very easily communicate his/her likes, dislikes, and needs with others. The interface is meant to be mutually beneficial not only between the peer group (the affected children) but also their caregivers in communicating with the children.

Jellow is designed as a complete communication system conceived with appropriate variations to cater to the needs of users with a varying range of abilities and available on different formats. The variations of Jellow extend to its availability (a) in the form of downloadable flashcards, (b) a downloadable booklet version, (c) an E-book, (d) a desktop version, as well as (e) in the form of an application compatible with tablets and mobiles and (f) devices with switch access. One can choose the form in which to use Jellow based on the particular level of speech and difficulties and abilities of the child. For instance, for a child just getting started, one could introduce Jellow flashcards with corresponding word labels to familiarize him/her with the icons that are used in the Jellow application.

Another unique feature in Jellow is its ability to teach children the sequential steps of daily activities such as brushing, going to the toilet, bathing, eating. Jellow has a child-friendly step-by-step pictorial depiction of each of these activities of daily living so that kids can follow along the daily activity pathway as they learn to perform these critical skills.

The paper will delve upon the iterative design process followed in the design of Jellow as well as the incorporation of the feedback that we have had with speech therapists and parents through focus group discussion sessions.

Jellow has been awarded the UNICEF Innovation Fund in recognition of its uniqueness and universal applicability

Assessment Practices and Technology Integration in the Botswana Education System

Tshepo Batane

University of Botswana, Botswana

Abstract

Assessment is an integral component of the education process, as such it is imperative that technology integration efforts in learning pay adequate attention to this dimension to ensure that it is also supportive of technology use. This study investigated assessment practices in the Botswana education system to find out if they are supportive of technology integration in learning. The study was carried out through an analysis of various documents relating to technology, teaching, learning and assessment processes in the education system in the country. These included; the curriculum, assessment syllabi, formative and summative tests/examinations papers and studies carried out on technology integration in the Botswana education system. The study found that the thrust of assessment in the Botswana education system is summative and norm-referenced. This assessment is carried out through 'high stakes' standardized examinations, which are offered at the end of each level of education (primary, junior secondary and senior secondary). The results of these examinations are mainly used to determine progress of students to the next level of education. The results are also used to rank schools according to their performance, a factor that has far-reaching implications on the perceived competencies of individual teachers, school leadership and the school regions. The predominant nature of questions used in the examinations is paper-based multiple choice and short answer questions. The questions mostly require students to recall taught information through low-order level of questioning. Also the assessment predominantly test cognitive skills, with the exception of a few subjects (mainly practical ones) which give students an opportunity to apply high-order skills through developing products required by their various subjects. The study found that schools carry out formative assessment through class exercises and monthly tests that are offered around the same time throughout the country. However, the study observed that these assessment activities mostly mirrored the final examinations.

The curriculum indicated a core subject called Computer Awareness (CA) which is meant to equip learners with basic computer skills. However, this subject was not examined which meant students' technology skills were not assessed anywhere in the education system except for a few students who did Computer Studies as an optional subject at senior secondary school level. From the various studies, teachers indicated that there was very high value placed on examinations in the country such that from a wide range of material to cover in the syllabus, they often concentrated more on what will be examined. The teachers indicated that they often

ignored un-examinable subjects, topics and learning activities because at the end of the day what mattered most for the Ministry of Education was whether students had passed or failed the examinations.

The results of this study indicate that technology does not feature anywhere in the country's assessment practices. The schools do not carry out any technology-based assessments that could afford students various platforms that are more flexible and can provide for innovativeness and contextualization, especially at the formative levels. The nature of the questions used for assessments also do not require students to demonstrate acquisition of a wide variety of skills beyond cognitive competencies such as critical thinking, collaboration, adaptability and creativity. The curriculum envisage that technology would facilitate attainment of these skills. It is evident that assessment practices in Botswana are not supportive of technology use in education. With the high level of value placed in the final examinations, it seems that promoting technology use would have to be motivated from here because it is clear that teachers will continue to be reluctant to engage in technology-based activities if they are not consistent with what is being measured on high-stakes examinations. One common feature of most technology adoption models is that if people see the benefit of the new innovation to their practices, then they will be motivated to use it. This study clearly demonstrates that in Botswana, technology use has not yet made it to the core of what matters most in the system, which could be the key to its wide and effective use. As such it is crucial for the country to design robust and diverse assessment procedures which are congruent with technology use because trying to infuse technology in learning by itself without making necessary paradigm adjustments to other factors such as assessment would not assist to effectively integrate it into learning.

Using Simple Software for Self-Assessment of L2 English Speaking Ability

Adrian Wagner

St Andrew's University

Abstract

This presentation is based around an action research project trialled over a one semester English oral communication course for second year university students at a university in Japan. The goal of the research was to use a combination of recording software and online surveys to allow for more meaningful assessment of speaking that encourages students to develop their speaking ability through practice and reflection. The ultimate goal of the assessment design is not merely to assign a grade, but for students to develop awareness of their own strengths and weaknesses,

encourage learner autonomy and to foster desire to improve. The presentation will include the academic basis and practical integration of the assessment program, the presenter's personal evaluation of this assessment program, as well as feedback from the students themselves. Attendees will be asked to consider their own priorities and methods of assessment and be introduced to an effective and user-friendly method of assessing speaking skills that they can adapt to their own educational contexts.

Tales from the exam room: Trialing an e-exam system for computer education and design and technology students

Jeremy Pagram

Edith Cowan University

Martin Cooper

Curtin University

Huifen Jin

Edith Cowan University

Alistair Campbell

Edith Cowan University

Abstract

The Technologies in education area at Edith Cowan University was asked in 2016 to be the Western Australian arm of a national e-exam project. This project used a bespoke usb based exam system to deliver what would have been traditional paper based exams in an enclosed computer based environment that was isolated from the internet and any resources other than those provided.

This paper looks at the two exams chosen by the Western Australian group for the trial. A programming exam for pre-service computing teachers and an occupational health and safety exam for pre-service design and technology teachers. Both groups were drawn from the Graduate Diploma in Education course at ECU. The paper looks at the nature of the exam environment and the procedure for creating e-exams. It also outlines the exam procedures used and examines the feedback provided by both the lecturers and students involved. Conclusions are drawn about the suitability of the e-exam system and improvements are recommended as well as a discussion about e-exams and digital assessment more generally.

Comparative Pairs Judgements for High-Stakes Practical Assessment

Hendrati Nastiti

Edith Cowan University

Jeremy Pagram

Edith Cowan University

Abstract

This paper presents a study on the use of the Comparative Pairs judgements in high-stakes assessment. The Comparative Pairs judgements method is an alternative form of assessment in which assessors assess a pair of student works and judge one work to be more superior than the other, instead of assigning a mark to individual student works as in the more widely used Analytical marking process. With an aim to investigate the suitability of this assessment method in a digital environment, two secondary school subjects with different types of creative practical tasks, Design and Visual Arts, were investigated. By comparing the findings in these two tasks, the researchers expect to contribute to the understanding of the issues surrounding the use of the Comparative Pairs judgements in different types of practical tasks. Data gathered from 16 assessors who judged 157 student practical works were analysed by employing the pragmatic research paradigm using the mixed research method. Findings from analysis results of students' scores and assessors' notes suggested that the Comparative Pairs judgements method could be an alternative scoring method that provides valid results for these two types of task.

The future is here: Thai and Australian Lecturers' use of technology in their teaching

Jeremy Pagram

Edith Cowan University

Martin Cooper

Curtin University

Huifen Jin

Edith Cowan University

Vijittra Vonganusith

Sakon Nakhon Rajabhat University

Abstract

The purpose of this study was to examine teacher educators' perception and practices with classroom technology integration at a higher education level. Data were collected from current teacher educators from Edith Cowan University (ECU) in Western Australia and two Rajabhat Universities in Northeast Thailand through online survey and informal interviews. Results suggested that the majority of teacher educators from three universities were familiar with technology classroom integration and utilized mobile phones for online access, but see them as important instruction tools. Technology may be enhancing the learning experience; there were still issues concerning using technology—teacher educators were reluctant to experiment with new technology. Therefore, the universities' support for the use of technology, and on-going staff training were critical.

POSTER SESSION: 10:00 – 10:30

Development of an Authentic Blended Learning Programme for the preparation of Biotechnology students for Work-Integrated Learning at the University of Johannesburg, South Africa

Kevin Maclean

University of Johannesburg

Abstract

In this pilot project an alternative method to current traditional classroom sessions was developed and evaluated with the aim to improve the preparation of 21st century students for Work Integrated learning (WIL) in the Department of Biotechnology and Food Technology at the University of Johannesburg (UJ). Forty percent of industry supervisors reflected that they were not satisfied with the preparation of students for WIL. Technology was used to develop an authentic blended learning programme to enhance the preparedness of students for WIL. Blended learning was used because it brings together the best of classroom learning and e-learning. Blended learning seems to be an ideal solution because it appeals to all learning styles, circumstances and demands of students. In addition, considering that South Africa has the highest number of cellular device owners in the world; 87%, the same as the United States, 57% percent of South Africans have smartphones, which shows an indication of the affinity for technology.

A WIL preparation programme was developed to bridge the transitional gap between the mind-set developed during a three year period of students exposed to traditional classroom teaching methodologies on campus to the technology based "world of work". This gap was identified using reflections from previous and current students and colleagues at UJ as well as industry supervisors. Some of the skills students lacked that were identified are: curriculum vitae writing, engaging in an effective interview, exhibiting appropriate communication skills which include demonstrating basic computer and report writing skills.

A design based research methodology was used to develop the blended learning program using Blackboard as the learning management system, which combined various teaching

methodologies to include technology, E Learning and face-to-face (F2F) classroom sessions to address the development of the identified skills. Students and industry supervisors had access to Blackboard. This trial followed a non-experimental exploratory sequential mixed methods design. Questionnaires and interviews with open and closed ended questions were developed using Google forms. The data were analysed using average percentages.

A cohort of 45 Biotechnology students, 7 colleagues and 15 industry partners participated in a pilot study where blended learning was used during the last six months during 2017 to prepare students for WIL in 2018.

Prior to this pilot study most of the industry partners as well as 28% of the UJ colleagues and most students had never heard of blended learning. After an introduction to blended learning 87% of students, 85% of colleagues at UJ and 87% of industries showed an interest to participate in a WIL preparation module using blended learning as the teaching methodology. Therefore, it can be concluded that blended learning should be considered to prepare Biotechnology students for WIL at UJ. Further and continual investigation to include the reflections of students, colleagues and industry supervisors need to be done to determine the impact of the WIL preparation programme developed during 2017.

Competency Diagnosis between Curriculum Maps and Vocational Needs– The Case of a University of Technology in Taiwan

Tao-Ming Cheng

Chaoyang University of Technology

Hsing-Yu Hou

Chaoyang University of Technology

Dinesh Chandra Agrawal

Chaoyang University of Technology

Abstract

The present study assessed competency diagnosis between curriculum maps and vocational needs of alumni at the case university. In the 'University Career and Competency Assessment Network' (UCAN) system, Deming's 'Plan-Do-Check-Action' (PDCA) methodology was used to investigate the link between competency diagnosis and vocational satisfaction among undergraduate via alumni questionnaire. Since the alumni survey was carried out after one year of work (between June to September 2016), therefore, the cross report from the UCAN system was created among graduates at the end of 2016. There were total 1,080 students who answered UCAN and alumni questionnaires in this study. The record of UCAN was the last score before

graduation at school. Thus, we were able to evaluate their readiness of common and professional competency after one-year of work experience. The results obtained can be summarized as follows: (1). Innovation was found to be the lowest in the College of Science and Engineering among the five colleges. (2). It was found that higher the 'Learn-Practice Fit', higher was the 'Satisfaction' at workplaces. (3). 'Responsibility' and 'discipline' were found to be significantly positive with regard to 'Fit', 'Communication and expression', 'Interpersonal interaction' and 'Teamwork'. (4). Common competency of information application was poor in the Department of Early Childhood Development and Education. (5). In the department of Information Management, 'Service' and 'Information technology writing' need to be improved. Alumni surveys are beneficial in detecting students' problems, trends in learning outcomes and allowing more adaption in their careers after they graduate and join the workplaces. Also, these are of immense help to instructors in improving their teaching strategies.

Learning Support Website for Physics by Utilizing Simulations

Keita Nishioka

Kanazawa Institute of Technology

Tomoshige Kudo

Kanazawa Institute of Technology

Akira Nakamura

Kanazawa Institute of Technology

Abstract

Recently, along with the development of internet technologies, various e-learning websites have been developed and put into practical use. As teaching materials about mathematics and science in Kanazawa Institute of Technology (KIT) by using internet technologies, we have been developing a learning support website of physics named "KIT Physics Navigation" since 2016 (http://w3e.kanazawa-it.ac.jp/math/physics/), in which contents are for the high-school and the first-grade physics education. Taking advantage of the e-learning website, we provide the motion simulations for physical phenomena in our website, such as a parabolic motion, a circular motion, a simple harmonic motion, and so on. The experience of these simulations with movement makes it easier for learners to visually image the relationship between the phenomena and the mathematical expressions appearing in physical laws. It not only entertains the learners but also leads to efficient learning. At SETC2018, we will make a presentation about KIT Physics Navigation focusing on the motion simulations.

Learning Effect in VR-based Anatomy Class

Mun Young Lee

Honam University, South Korea

Abstract

Anatomy is one of the fundamental areas of medical education. One side, the release of virtual reality (VR) devices allows learning to occur through hands-on immersive experiences. The aim of this research was to assess whether learning structural anatomy utilizing VR effects.

The experimenter consisted of two groups with similar levels of results in the pre-oral examination. And it was randomly extracted from students who took anatomy classes in the 'O' department of 'H' University. The control group(n=10) was studied using the muscle model and the experimental group(n=10) was studied using VR during 3 weeks (9 times a total of 3 times a week).

After the training, the two groups took oral examinations using their bodies. There was no significant change in the score of the group using the muscle model (15.2±1.4 to 15.3±2.7), but the score of the group studied using VR improved, significantly (15.0±1.8 to 16.9±3.0, $p < 0.05$).

These outcomes show great promise for the effective use of VR as means to supplement lesson content in anatomical education.

COFFEE BREAK: 10:30 – 11:00

Room: Seletar Ballroom

Session Chair: Professor Emeritus Dr. Chanita Rukspollmuang, Siam University, Thailand

Investigating the motivational effect of ICT on students in the Normal (Technical) stream: An insight into Singapore's Student Learning Space (SLS)

Jia Jun Justin Ng

Springfield Secondary School

Shu Ling Judith Ho

Springfield Secondary School

Abstract

This study sought to explore the effectiveness of Singapore's Student Learning Space (SLS) in actively and sustainably engaging Normal (Technical) students to tackle learning tasks, with specific reference to the internal cognitive processes (such as reasoning and analysing) of student learning. The methodology involved designing a scientific inquiry lesson on the SLS platform based on the Technological Pedagogical Content Knowledge (TPACK) framework. Two classes of Normal (Technical) students were exposed to a myriad of learning activities such as case studies, scientific argumentation, performance assessments as well as opportunities to solve different conundrums over a one-hour period. The motivational effect of the learning experience was measured based on four categories – a post-student response survey with reference to the Intrinsic Motivation Inventory (IMI), the average length of observed students' attention span, interviews with students as well as summative assessment results. IMI scales indicated a particularly high level of interest and an increased self-capacity to focus while attempting most tasks on SLS, although students raised significant competency concerns with scientific argumentation. Teachers reported sustained active learning by students with minimal lapses in attention, while interviews with students revealed a desire for more SLS lessons. These results provide evidence that motivation to learn among Normal (Technical) students has been positively enhanced with the introduction of SLS lessons designed within the TPACK framework, while there is little doubt on the ability of the SLS platform to support the delivery of traditional teaching as well as allow for opportunities to develop experiential teaching packages which support the new-age approach in learning.

Investigating the Impacts of the Learning and Communication Strategies Instruction on Thai University Students' Speaking Ability

Mintra Puripunyavanich

Language Institute of Thammasat University

Kittitouch Soontornwipast

Language Institute of Thammasat University

Abstract

This study examines the impacts of learning and communication strategies (LACS) instruction on Thai university students' speaking ability and looks at their attitudes toward the instruction. Twenty-three economics junior students participated in this study and were explicitly taught 13 LACSs in class based on the 3-Stage LACS Instruction. Two sets of pre- and post-tests – one for an informative presentation, and the other for an informal meeting, were administered to assess the impacts of the LACS instruction on students' speaking ability. Students' reflective journals (SRJ), semi-structured focus group interviews, and the teacher's observation notes were employed to explore students' attitudes toward the instruction. The results show that students' speaking scores in an informative presentation and an informal meeting test tasks improved significantly after the instruction. Also, the qualitative findings reveal students' positive attitudes toward the instruction. Based on the positive quantitative and qualitative results indicated in this study, it is suggested that the 3-Stage LACS Instruction be applied when teaching presentation and meeting skills to develop students' speaking ability regardless of their English language proficiency levels.

My Speaking Apps: Non Face-To-Face (NF2F) Medium of Learning in 4.0 Education

Fazilawati Harun

Kedah Engineering Matriculation College

Supyan Hussin

National University of Malaysia

Abstract

The need of Education 4.0 requires educators to be creative and innovative in their pedagogical approaches including mobile learning. To achieve Industrial Revolution 4.0, both parties, educators and learners, should familiarize themselves to be not only as users of sophisticated gadgets but also innovators when using, especially, the mobile gadgets. Thus, My Speaking App (MSA) is created as a tool for personal learning for non-face-to-face (NF2F)

communication. The app is designed in a way to help the language learners to practice their speaking skills. The app allows them to listen to the correct pronunciation of the words, listen to a recorded conversation, learn, and use the correct language expression in a flexible way. In addition, they are also able to record and listen to their own voice by using the app as it applies the artificial intelligent element by integrating the external resource: Google speech-text. This app has been introduced to 163 engineering students before they sit for Malaysian English University Test (MUET). They have been using the app for their preparation of MUET Speaking test at their own time without attending the oral classes. The findings of the research indicate positive feedback from users toward the use of My Speaking App. Furthermore, there seems to be a significant improvement in the use of language expression after they have been using the app. Therefore, it is hoped that MSA could be a driver for Education 4.0, especially in enhancing the English speaking skills, as to produce a fluent, polite and competence speaker. The use of MSA helped the language learners to be more confident in using the English language as they had their own preparation to practice using the language before they use it in a face-to-face (F2F) environment. Hence, M-Learning is the most preferable learning styles practiced by the Netizens, the use of the mobile app as a language learning tools could be the best medium for 4.0Eeducation.

Video Project and Social Media: A Collaboration for Shaping Learners' Speaking Ability

Maria Puspa Sari

Politechnic of Akamigas Palembang

Abstract

This research was conducted to figure out if there was significant difference of the speaking achievement between students who uploaded their video projects online and those who did not. Prior to the treatment, this experimental study randomly selected two groups of mining students and these groups were categorized into experimental and control group. The results revealed that posting video online showed a statistically significant change in the speaking performance of the experimental group. Finally, significant difference in the speaking skill was also found between the two groups. This study revealed that video project was absolutely effective to boost learners' speaking skill. However, posting them on Instagram is more effective and meaningful.

LUNCH: 12:30 – 14:00

SESSION IV: 14:00 – 15:00

Room: Seletar Ballroom

Session Chair: Fazilawati Harun, Kedah Engineering Matriculation College, Malaysia

Mobile Tourism Application Development for Learning Authentic Experiences

Pichsinee Soonsap

King Mongkut's Institute of Technology Ladkrabang

Abstract

Modern tourists appear to be interested in learning about destination, local culture and current affairs. Experiencing local tourism is currently widespread as a global tourism trend. Regarding to Tourism Authority of Thailand (TAT), it is revealed that more than 90 percent of tourists interested in authentic experiencing and local destination learning. They would like to get an opportunity to interact with local people. This phenomenon is contrast with using tourism mobile application trend which is better reach tourists and directly impact tourists' experiences. The purpose of conceptual paper is to develop mobile tourism application for tourists' learning authentic experiences. Developing ideas from the existing tourism components literature, a conceptual idea of new tourism application is provided. The application focuses on Community - Based Tourism (CBT). The detail of local area will be mentioned according to theory of 7A's components of tourism which are Attraction, Activity, Accommodation, Accessibility, Amenity, Ancillary Services, and Authentic Experience (Buhalis, 2000; Dickman, 1996; Taheri, Farrington, Curran, & O'Gorman, 2017). It offers tourists the guidelines to access the authentic experiences in a certain local area. Furthermore, this innovation promotes sustainable development of tourism in locality, creates cross-cultural understanding, encourages interaction and co-operations between tourists and local people.

The Development of Instructional Model to Enhanch Learning and Innovation Skills in 21st Century for Undergraduate Students in King Mongkut's Institute of Technology Ladkrabang, Thailand.

Patcharabhorn Sounthornwiboon

King Mongkut's Institute of Technology Ladkrabang

Abstract

The instructional model was factors for teaching method to develop learning and innovation skills in 21st. Therefore, instructional model were very important to develop student's 21st learning and innovation skills. This research uses semi-experimental research. The Objectives: 1) Develop teaching styles to enhance learning and innovation skills in the 21st century. 2) Study the effects of using teaching styles to enhance learning and innovation skills in the 21st century. The populations were 120 students from 2 classrooms. The samplings were 56 students from 1 classroom selecting by group cluster. The statistics were analyzed with the Percentage, Arithmetic Mean, Standard Deviation, and T-test dependent. The research found that: 1. The teaching style for enhancing learning and innovation skills in the 21stcentury consists of 5 main components: 1) K: Knowledge 2) M: Modern Technology 3) I: Interactive 4) T: Teacher and 5) L: Learning.2. Regarding the learning and innovation skills before and after using the learning and teaching styles to enhance the skills in the 21st century of the undergraduate students of King Mongkut's Institute of Technology Ladkrabang, Thailand, it was found that the learning and innovation skills in the 21st century before and after were different with statistical significance at.05 level.

The Effect of Digital Media Design to eTravel revenue in Thailand

Punyavee Visadsoontornsakul

King Mongkut's Institute of Technology Ladkrabang

Abstract

The research investigates the cause of revenue deceleration in eTravel Thailand concerning the design of digital media. As eTravel is the tourism services purchasing activity of customers, for example, the online travel services booking, and the online ticketing, which provided by the business who have an online presence, known as an eTravel service provider. The research determines the relationship between satisfaction factors in digital media design and conversion. The reason of failure in eTravel conversion is presented as association rules. The research result used as the input for developing the digital media design guideline, e.g., the recommendation for website design to engage more customer and eventually make the conversion. By applying

the guideline, the local eTravel service provider successfully increases the eTravel revenue once applying the guideline on digital media design. The eTravel were purchased increasing 42.50% on average compared to the same month in the previous year. It confirms the applicability of the proposed guideline.

COFFEE BREAK: 15:00 – 15:30

SESSION V: 15:30 – 17:00
END OF CONFERENCE/ NETWORKING

Virtual Presentation
Available on SETC.ear.com.sg on 25th August 2018

Living dyslexia in the foreign language
Sónia Leite
Polytechnical Institute of Maia

Abstract

English is an integral part of the curriculum of the Primary School, so we need to take a closer look at people struggling with problems in their mother tongue: the dyslexics. It is known that dyslexia is one of the factors associated with dropping out of school, depending the fluent reading on a series of cognitive factors that have to organize and work together to achieve their mastery. Any deficits that may arise at the level of these competencies will jeopardize the academic, personal and professional success of the dyslexic.

We intend to create pedagogical tools that allow these students to overcome the difficulties arising from their problems in English as a foreign language. This project has potential to contribute to one of the greatest current educational challenges, the re-education of the dyslexia in the foreign language through early intervention and phonological awareness training.

Representaton of expert knowledge for e-learning

Baba Mbaye

Effet B University of France-Comté, France

Abstract

Knowledge is the activity by which man seeks to understand reality. The term "representation" will be examined here in the context of the theory of knowledge. In fact, knowledge representation is a set of tools and technologies. In our research, this set is used to represent on one hand and on the other hand to organize human knowledge for the purpose of using it in an automated way and to share it.

In this article, we show a method and a technique that makes it possible to make a representation (modeling) of knowledge from written traces. These written traces are metadata resulting from interactions made on a learning platform by learners and experts (e.g. the expert in charge of the content of training courses, the expert responsible for evaluating training courses).

The purpose of this research is to refine the content of the learning platform (CLP) and to facilitate the management of the CLP online by choosing the relevance, accessibility useful knowledge to learners. This knowledge is refined and adapted to the learner's training path. CLP management was facilitated by replicating the actions of the experts on the learning platform in a automaton.

The results of this research are implemented on a mystery inquiry management and online learning management software. Tests carried out on a group of users, allowed us to obtain statistical results. These results are obtained on evaluation criteria related to the accessibility of knowledge allowing the learner to better follow his online training and criteria related to the relevance of the content of the platform.

In this article, we will present these facts and statistics obtained after implementation and testing to support our work.

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