Editorial for EAIT Issue 5, 2017

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The journal of Education and Information Technologies is a highly successful and popular journal but this popularity also comes with some problems in the consequent of a wait by authors to get an article published. This popularity and wait comes in spite of the journal accepting only 48% of the submitted articles! We want to reduce this publication wait for authors and that is the reason that this is such a large issue.

This issue of the international journal: Education and Information Technologies has a total of 35 articles coming from: Brazil, France, USA, India, Finland, Egypt, Australia, Canada, Kazakhstan, Slovak Republic, Vietnam, Taiwan, Chile, Colombia, Greece, Sweden, Morocco, Spain, Norway, Nigeria, Russia, Qatar, Oman, United Kingdom, Ghana and Germany.

The first article in this issue: *How and why Brazilian and French teachers use learning objects* was contributed by Cacilda Encarnação (Universidade Estadual de Campinas- NIED/Brazil), and Augusto Alvarenga, Jacques Ginestie and Pascale Brandt-Pomares (Aix-Marseille Université, ENS de Lyon, France). Their study involved investigated the use of digital learning objects in elementary and secondary schools. The two main reasons for educational use were to motivate the students for their studies and to help them in the learning of new concepts based on the features of the objects. The data reinforces the importance of training teachers in the use of learning objects and teaching strategies that contribute to the knowledge construction process in an interactive way, while taking into consideration the characteristics of technology.

Next, Michael Corry, William Dardick and Julie Stella (George Washington University, USA) report on: *An examination of dropout rates for Hispanic or Latino students enrolled in online K-12 schools*. They note that as the number of online K-12 educational offerings continues to grow it is important to better understand key indicators of success for students enrolled in these classes, one of which is student dropout rates. This is particularly important in the case of Hispanic or Latino students who traditionally have high dropout rates.

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Assessment of computer-mediated module intervention in a pharmacy calculations course, by Edward C. Bell, David S. Fike and Dong Liang (Texas Southern University), Paul R. Lockman (West Virginia University School of Pharmacy) and Kenneth L. McCall (University of New England), USA, discusses computer module intervention in the process of exposing students to a series of discrete exercises for the purpose of strengthening students' familiarity with conceptual material. This study was conducted to determine the effectiveness of module intervention in improving and equalizing students' module assessment and comprehensive final exam grade outcomes in a pharmacy calculations course.

Following is an article by Sanjay Mohapatra and Rituparna Mohanty (Xavier Institute of Management, India) on: *Adopting MOOCs for affordable quality education*. Models to help in overcoming challenges while adopting technology with higher education need to be modified in the context of MOOCs. This article describes an acceptance framework which would provide guidance to the organizations wanting to venture into the online education sphere.

Insights into Finnish first-year pre-service teachers' twenty-first century skills focuses these skills, especially in relation to their learning strategies, collaboration and teamwork, as well as knowledge and attitudes related to ICT in education. It is by Teemu Valtonen, Erkkö Tapio Sointu and Jari Kukkonen (University of Eastern Finland), Päivi Häkkinen (University of Jyväskylä, Jyväskylä, Finland), Sanna Järvelä (University of Oulu, Finland), Arto Ahonen (University of Jyväskylä, Finland), Piia Näykki (University of Oulu, Finland), Johanna Pöysä-Tarhonen (University of Jyväskylä, Finland) and Kati Mäkitalo-Siegl (University of Eastern Finland). The article outlines how pre-service teachers perceive their twenty-first century skills, the relationships between different areas of these skills, and the differences among pre-service teachers in terms of perceived skills.

S. M. Baladogh, A. F. Elgamal and H. A. Abas (Mansoura University, Mansoura, Egypt) next write on: *Virtual lab to develop achievement in electronic circuits for hearing-impaired students*. Their article notes that results from a number of studies have proved that a virtual lab allowed students to build and test a wide variety of electronic circuits and describes a study that was implemented to investigate the effectiveness of virtual lab in improving hearing-impaired students' understanding of concepts and their skills in handling electronic circuits.

The effect of theme preference on academic word list use: A case for smartphone video recording feature was contributed by Nicolas A Gromik (University of New England, Australia). In the article he describes how 76 Japanese 'English as a Second Language' undergraduate learners completed one smartphone video production per week for 12 weeks, based on a teacher-selected theme. The reported findings indicate that there is a correlation between theme preference and the use of academic word list lexical items. The research outcome indicates that the smartphone video recording feature can be used to encourage language learners to speak in the target language about relevant themes and thus increase speaking abilities and word usage.

To follow is an article by Tenzin Doleck, Paul Bazelaïs and David John Lemay (McGill University, Canada) titled: *Examining the antecedents of social networking sites use among CEGEP students*. They point out that investigations in technology acceptance in education have largely overlooked certain unique populations like students from the Collège d'enseignement général et professionnel (CEGEP) system.

In studies examining CEGEP students' use of technology, the Technology Acceptance Model (TAM) perspective, proposed by Davis, has not previously been taken into account, nor have modalities of beliefs underlying the TAM framework. This study uses TAM to explore CEGEP students' use of social networking sites.

LMS Moodle: Distance international education in cooperation of higher education institutions of different countries. This article, by N. Kerimbayev (Almaty, Kazakhstan), J. Kultan (Bratislava, Slovak Republic) and S. Abdykarimova and A. Akramova (Almaty, Kazakhstan) argues that an enhanced sharing of experience in the sphere of practical teaching activities implies an increase in the quality of teaching processes and of scientific cooperation. The article describes the process of teaching students from different countries using the system of LMS Moodle, beginning with preparing study materials, giving lectures by foreign lecturers, practical tasks and ending with passing an examination.

The next article presents a model using peer assessment to evaluate students taking part in blended - learning courses where teaching activities are carried out in the form of traditional face-to-face and learning activities are performed online via the learning management system Moodle. *A peer assessment approach to a project based blended learning course in Vietnamese higher education* is from Viet Anh Nguyen (Vietnam National University). The reported results of student feedback suggest that the usage of various peer assessments created positive learning effectiveness and a more interesting learning attitude for students.

Can learning motivation predict learning achievement? A case study of a mobile game-based English learning approach. This article by Chia-Hui Tsai (Transworld University, Taiwan), Ching-Hsue Cheng (National Yunlin University of Science & Technology, Taiwan), Duen-Yian Yeh (Transworld University, Taiwan) and Shih-Yun Lin (National Yunlin University of Science & Technology, Taiwan) and describes a study to investigate the influence and predictive power of learner motivation for achievement, employing a mobile game-based English learning approach. A system called the Happy English Learning System, integrating learning material into a game-based context, was constructed and installed on mobile devices to conduct the experiment.

Factors affecting the adoption of information and communication technologies in teaching comes from Álvaro Salinas and Miguel Nussbaum (Pontificia Universidad Católica de Chile), Oriel Herrera (Universidad Católica de Temuco, Chile), Mario Solarte (Universidad del Cauca, Colombia) and Roberto Aldunate (University of Illinois at Urbana-Champaign, USA). Their study describes the level of adoption of information and communication technologies in teaching in three Latin American countries and factors that affect the process by which teachers incorporate these technologies into their classrooms. It suggests the need for a better understanding of the complex relationship between the culture, the various actors involved, and the degree to which teachers adopt technology in education.

The level of functional illiteracy in the North American context, amongst others, appears to be reaching epidemic levels. This article: *Texting, reading and other daily habits associated with adolescents' literacy levels* by Dmitri Zebroff (School District No. 22 (Vernon), Canada) and David Kaufman (Simon Fraser University, Canada) notes that the necessary linguistic and intellectual tools required to adequately function in our complex, highly-literate societies are not being sufficiently developed in many of

our homes or schools. Their findings suggest that the type of reading that is occurring while texting is substantially different, in terms of its associations with literacy, from more traditional forms of reading.

Marwah Alian (Princess Sumaya University for Technology, Jordan) and Adnan Shaout (The University of Michigan, USA) then contribute: *Predicting learners styles based on a fuzzy model*. They describe how learners style is grouped into four types mainly; Visual, Auditory, Kinesthetic and Read/Write and that each type of learners learns primarily through one of the main receiving senses, visual, listening, or by doing. In this work, a fuzzy model for predicting learner style depending on characteristics of the learner is proposed.

Exploring the educational potential of three-dimensional multi-user virtual worlds for STEM education: A mixed-method systematic literature review by Nikolaos Pellas (University of the Aegean, Greece), Ioannis Kazanidis (Eastern Macedonia and Thrace Institute of Technology, Greece), Nikolaos Konstantinou (Panteion University, Greece) and Georgia Georgiou (Ministry of Education, Research and Religious Affairs, Regional Directorate of Primary Education of Thesprotia, Greece) provides a literature review building on the results of fifty research articles published from 2000 until 2016 dealing with studies of various learning tasks in the domain of Science, Technology, Engineering, and Mathematics (STEM) education using three-dimensional multi-user virtual worlds for Primary, Secondary and Higher education.

Many school districts across the United States have enacted one-to-one (1:1) programs to boost students' twenty-first Century Skills by providing a laptop or other personal digital device to every student, with the expectation that teachers will employ modern instructional processes and students will benefit from greater access to knowledge, tools, and both collaborative and individualized instruction. *The impact of technology exposure on student perceptions of a 1:1 program* by Jeffrey A. Stone (Pennsylvania State University, USA) discusses the partial results of a year-long 1:1 laptop program evaluation in one Pennsylvania district.

Representing and enacting movement: The body as an instructional resource in a simulator-based environment, is from Charlott Sellberg (University of Gothenburg, Sweden). The article indicates that simulation-based training is often discussed in terms of realism in relation to real-world work practices as the nature of situations encountered in high-risk domains is complex and dynamic. In this study video-recorded data is used to explore these glitches between a simulation and the real world. The analysis is focused on maritime instructors' use of body and talk to represent aspects of the real-world missing in high-fidelity simulators.

The next article: *Applying a conceptual design framework to study teachers' use of educational technology* is from Jörgen Holmberg (University of Gävle and Stockholm University, Sweden) and begins by pointing out that theoretical outcomes of design-based research (DBR) are often presented in the form of local theory design principles. This article suggests a complementary theoretical construction in DBR, in the form of a design framework at a higher abstract level, to study and inform educational design with ICT in different situated contexts.

Enhancing collaborative learning in Web 2.0-based e-learning systems: A design framework for building collaborative e-learning contents, from Abderrahim El Mhouti, Azeddine Nasseh and Mohamed Erradi (Abdelmalek Essaadi University, Morocco) and José Marfa Vasquz (HulvaUniversity, Spain) seeks to find conceptual solutions for

computer design and development of pedagogical knowledge, which should be adequate for current e-learning practices based on Web 2.0 features for collaborative e-learning. The article presents a process of online and collaborative design-development of e-learning contents as concept maps, process which takes place in an online environment.

What follows: *Understanding student retention in computer science education: The role of environment, gains, barriers and usefulness* is an article by Michail N. Giannakos, Ilias O. Pappas and Letizia Jaccheri (Norwegian University of Science and Technology, Norway) and Demetrios G. Sampson (Curtin University, Australia) that looks at the high dropout rates in computer science (CS) education. It notes that despite the great demand for CS professionals little is known about what influences individuals to complete their studies.

In the next article, Shailaja Jayashankar (National Academy for Learning, Bangalore, India) and R. Sridaran (Marwadi University, India) offer: *Superlative model using word cloud for short answers evaluation in eLearning*. Teachers are thrown open to an abundance of free text answers which can be daunting to read and evaluate and automatic assessments of open ended answers have been attempted but none guarantees 100% accuracy. The ‘unique superlative model’ discussed in this paper aims at providing improved accuracy by constructing word clouds.

Analytical study of E-learning resources in national open University of Nigeria. Fredrick Olatunji Ajegbomogun, Rifqah Olufunmilayo Afolake Okunlaya and Mariam Kehinde Alawiye (Federal University of Agriculture, Nigeria) next analyse e-learning resources in the National Open University of Nigeria. Their findings indicate that the majority of the respondents affirmed that elearning resources were available for use, accessible, used for their class assignments and to search for information that is germane to their academic work.

The next article is devoted to teaching engineering subjects in the field of study: *Restoration and renovation of architectural heritage. A new approach to teaching technical subjects in training restoration architects* by Yurii Vladimirovich Pukhareno, Vladimir Markovich Petrov, Natalia Vladimirovna Norina and Veniamin Aleksandrovich Norin (Saint Petersburg State University of Architecture and Civil Engineering, Russia) demonstrates the necessity of changing the existing approach to teaching engineering design and construction to renovation architects.

Technology integration in EFL classrooms: A study of Qatari independent schools, by Youmen Chaaban and Maha Ellili-Cherif (Qatar University) examines the impact of teachers’ individual characteristics and perceptions of environmental factors on the extent of technology integration into EFL (English as a Foreign Language) classrooms. Teachers revealed consistent perceptions about obstacles to integration, high levels of confidence in using technology and consistent beliefs about the importance of using technology as a learning tool. The extent of technology integration was predicted by technology availability, perceived importance and formal training.

Students’ acceptance of file sharing systems as a tool for sharing course materials: The case of Google Drive. Alaa Sadik (South Valley University, Egypt and Sultan Qaboos University, Oman) next argues that student perceptions about ease of use and usefulness are fundamental factors in determining their acceptance and successful use of technology in higher education. The aim of the reported study was to explore, making use of the technology acceptance model, how Google Drive is accepted as a

system for handling course materials and uncover the factors that influence and contribute to students' intentions to use it.

Next, *Assistive technology for students with learning disabilities: A glimpse of the Livescribe pen and its impact on homework completion*, by Kelly A. Harper, Kristin Kurtzworth-Keen and Michele A. Marable (Canisius College, Buffalo, USA) investigates the effectiveness of an assistive technology tool, the Livescribe Pen (LSP), with an elementary student identified with dyslexia. Using interview and focus group methodologies over the span of one academic year, the study probed the perceptions of teachers, parent and the child. While the LSP was primarily utilized for curriculum accessibility and an audio tool to promote academic independence, the study's findings reveal its impact as an assistive technology on both academic success for children with disabilities as well as non-academic gains.

Investigating teacher perceptions of teaching ICT in Wales was contributed by Jan Barnes (University of Wales) and Steve Kennewell (Cardiff Metropolitan University, UK). They point out that regardless of what is intended by government curriculum specifications and advised by educational experts, the ICT competencies or skills taught and learned in and out of classrooms can vary considerably. Their article explores how we can investigate the perceptions that individual teachers have of ICT as a subject, and how these and other factors may influence students' learning.

The next article presents an original method of identifying satisfaction of students with the activities of their university administration based on studying the content of comments on the social networks. *Monitoring social media: Students satisfaction with university administration activities*, from Andrey Petrovich Koshkin, Ilya Mihajlovich Rassolov and Andrey Vadimovich Novikov (Plekhanov Russian University of Economics, Russian Federation) shows that an analysis of student opinions revealed areas of concern and priority areas in the work of the university administration.

Another article by Tenzin Doleck, Paul Bazelaïs and David John Lemay (McGill University, Canada): *Examining CEGEP students' acceptance of computer-based learning environments: A test of two models* points out that as the use of technology in education advances and broadens and empirical research around its use assumes increased importance, literature investigating technology acceptance in certain populations remains scarce. The article poses the question: what factors affect Collège d'enseignement général et professionnel (CEGEP) students' technology acceptance, specifically, what are the antecedents to their computer-based learning environment use.

Tablets in education. Results from the initiative ETiE, for teaching plants to primary school students, is the next article and was offered by Emmanuel Fokides and Pinelopi Atsikpasi (University of the Aegean, Greece) It examines the learning outcomes from the use of tablets and an application as content delivery methods for teaching plants' parts, reproduction types and organs, photosynthesis, and respiration. The project divided primary school students into three groups: one group of students were taught conventionally using notes and the textbook, for another group a contemporary teaching method was used but the instruction was not technologically enhanced and the third group of students used the application.

Higher education is moving towards digitalized learning and an article by Mari Aulikki Virtanen and Maria Kääriäinen (University of Oulu), Eeva Liikanen (Tampere University of Applied Sciences) and Elina Haavisto (University of Turku), Finland: *The comparison*

of students' satisfaction between ubiquitous and web-based learning environments looks at this. The article describes how the rapid development of technological resources, devices and wireless networks enables more flexible opportunities to study and learn in innovative learning environments. The aim of the reported study was to compare student satisfaction with a ubiquitous learning environment based on 360° technology and a traditional web-based online learning environment.

The article that follows reports on a study that argues that in developing a robust framework for students in a blended learning environment, Structural Alignment becomes the third principle of specialisation in addition to Epistemic Relation and Social Relation. The article: *Reframing the principle of specialisation in legitimization code theory: A blended learning perspective*, comes from Yaw Owusu-Agyeman and Otu Larbi-Siaw (Ghana Technology University College). The article concludes that whereas epistemic and social relations define the knower and knowledge code, structural alignment explains the infrastructure and policy framework that supports knowledge acquisition in a blended learning environment.

Exploring instructors' technology readiness, attitudes and behavioral intentions towards e-learning technologies in Egypt and United Arab Emirates, is from: Shahira El Alfy (Higher Colleges of Technology, United Arab Emirates), Jorge Marx Gómez (Carl von Ossietzky Universität Oldenburg, Germany) and Danail Ivanov (Higher Colleges of Technology, United Arab Emirates). Their article explores the association between technology readiness, (a metaconstruct consisting of optimism, innovativeness, discomfort, and insecurity), attitude and behavioral intention towards e-learning technologies adoption within an education institution context. The study found that preference to human interaction is equally important in Egypt and UAE with a strong potential to affect instructor's behavioural intentions for adopting e-learning technologies.

The next article notes that the technological pedagogical content knowledge framework is increasingly in use by educational technology researchers as a generic description of the knowledge requirements for teachers using technology in all subjects. *Adapting technological pedagogical content knowledge framework to teach mathematics*, by Seyum Tekeher Getenet (University of Southern Queensland, Australia) describes the development of a mathematics specific variety of the technological pedagogical content knowledge framework.

The final article in this issue: *School children's use of digital devices, social media and parental knowledge and involvement – the case of Abu Dhabi*, is from Masood Badri, Ali Alnuaimi, Asma Al Rashedi and Guang Yang (Abu Dhabi Education Council) and Khaled Tamsah (Ministry of Education), United Arab Emirates. It looks at the usage of social media devices and applications, and parental knowledge and involvement among Abu Dhabi children in Grade 6 or higher and examines the young children's usage of personal computers, mobile phones and tablet PCs and social media related apps. The article tries to understand the reasons for joining or not joining online social networking.

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