Editorial for EAIT Issue 3, 2018

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To begin this issue is an article by Fanny Pettersson from Sweden: “*On the issues of digital competence in educational contexts – a review of literature*” (<https://doi.org/10.1007/s10639-017-9649-3>). The article focuses on how digital competence has been addressed in research over the last ten years in terms of policy, organisational infrastructures, strategic leadership, teachers and their teaching practices. The analysis shows that knowledge on digital competence related to organisational infrastructures and strategic leadership is sparse. It is suggested that research needs to address these issues, to elaborate on theoretical frameworks to close the gap between research on policy, organisational infrastructures, strategic leadership and teaching practices, and to become involved in development of new approaches to enhance digital competence in educational contexts.

“*Inclusive dyslexia-friendly collaborative online learning environment: Malaysia case study*” by Loren Pang and Chen Chwen Jen, from Malaysia, points out that current web page accessibility guidelines focus more on reading and writing, but with inadequate attention to other aspects of online learning such as computer-mediated communication (<https://doi.org/10.1007/s10639-017-9652-8>). Their study explores engagement of Malaysian secondary school students with dyslexia and students without dyslexia on various synchronous and asynchronous communication interaction technologies in an online collaborative learning environment.

In the next article: “*Effective instruction for persisting dyslexia in upper grades: Adding hope stories and computer coding to explicit literacy instruction*”, Robert Thompson, Steve Tanimoto, Ruby Dawn Lyman, Kira Geselowitz, Kristin Kawena Begay, Kathleen Nielsen, William Nagy, Robert Abbott, Marshall Raskind and Virginia Berninger, all from the USA, address the issue of persisting dyslexia in grades 4–6 children (<https://doi.org/10.1007/s10639-017-9647-5>). They note that despite early intervention, these children, who had persisting dyslexia (impaired word reading and spelling), were assessed before and after computerised reading and writing instruction

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aimed at sub-word, word and syntax skills shown in four prior studies to be effective for treating dyslexia.

The article that follows: “*The effects on the student-teacher relationship in a one-to-one technology classroom*” is an embedded case study that explores the student-teacher relationship in this sort of environment (<https://doi.org/10.1007/s10639-017-9648-4>). It was contributed by Kevin Higgins and Shawna BuShell, also from the USA. Their study was guided by the self-system theory of motivation and its three characteristics of autonomy, relatedness and competency as a theoretical framework. Their findings revealed a notable change in the relationship between teachers and students within the one-to-one environment.

“*Mobile phones and/or smartphones and their apps for teaching English as a foreign language*” is by Blanka Klímová from the Czech Republic (<https://doi.org/10.1007/s10639-017-9655-5>). The article notes that there is an increasing trend in the shift from use of desktop computers and other traditional technologies towards mobile technologies. As nearly all students own a mobile device they are well equipped for mobile learning. This research aimed to explore the use of mobile devices and smartphones for teaching foreign languages, specifically English, and to highlight their benefits and limitations for use in the teaching of English. The findings indicate that these devices have positive effects on learning English as a foreign language, especially in the development of learners’ vocabulary and increased motivation to study.

There are many ICT tools that teachers can use to support teaching and learning, and Learning Management Systems (LMS) are present in most higher education institutions. Their availability in K-12 is, however, more recent. In an article titled: “*Acceptance of learning management system: The case of secondary school teachers*”, Alain Stockless from Canada suggests that LMS are promising for K-12 teachers in face-to-face learning contexts as they have educational support features (<https://doi.org/10.1007/s10639-017-9654-6>). The reported study aimed to identify factors that influence the acceptability of LMS by teachers, to see if their ICT use influences their intention to use the LMS, and to see if teachers’ ICT use influences their perception of the affordances of LMS educational features. To study made use of the Technology Acceptance Model (TAM).

Next, Shabir Ahmad Bhat and Makhmoor Bashir from India write on: “*Measuring ICT orientation: Scale development & validation*” (<https://doi.org/10.1007/s10639-017-9656-4>). Their paper measures ICT orientation of higher education teachers in the Indian context and their study identified four factors of ICT orientation and examined their impact on job performance. The findings of this study present a factor scale measuring ICT orientation of teachers among which ‘advantage’ emerged as a significant factor. The study further highlighted that ICT orientation has a direct and positive relationship with job performance.

“*Exploring computer science students’ continuance intentions to use Kattis*” comes from Ram B. Basnet (USA) and Tenzin Doleck, David John Lemay and Paul Bazelaïs (all from Canada) (<https://doi.org/10.1007/s10639-017-9658-2>). They note that teaching programming concepts to enhance students’ problem solving and computational thinking skills is a challenging task, especially when students enter college with little to no preparation, or they lack the interest or capacity for programming. This article discusses use of an online automated practice and assessment system called Kattis for homework assignments and final project in three

computer science courses. Their findings suggest that intentions to continue to use Kattis is driven by students' level of satisfaction with the system, the degree of student confirmation of expectations, and the perceived usefulness of the system.

James Sunney Quaicoe and Kai Pata, from Estonia next offer: “*Basic school teachers’ perspective to digital teaching and learning in Ghana*” in which they propose a model for describing the situation of Digital Teaching and Learning (TD-TaL) in Ghanaian schools using the perspectives from basic school teachers (<https://doi.org/10.1007/s10639-017-9660-8>). This model was developed based on the theories of Valsiner’s Zone of Free Movement (ZFM – comprising Digital environment factors and Personal attitudinal and Digital Culture factors) and Zone of Promoted Action (ZPA – comprising Teacher Training factors) and Vygotsky’s Zone of Proximal Development (ZPD). They tested the model using the survey data collected from teachers in schools across the Western Region of Ghana.

Human-Computer Interaction research has shown significant gender differences while users interact with End-User Development systems. “*Examining gender issues in perception and acceptance in web-based end-user development activities*”, by Tzafilkou Katerina and Protogeros Nicolaos from Greece examines the potential gender differences in the perception and acceptance of these environments (<https://doi.org/10.1007/s10639-017-9650-x>). The results of their field test show significant gender differences in Risk-Perception and Perceived-Ease of Use. As it was predicted, male users perceived significantly higher ease of use and female users perceived significantly higher risk. Gender differences also exist in the correlations between different pairs of perception and acceptance items.

An article titled: “*Digital competencies among student populations in Kosovo: the impact of inclusion, socioeconomic status, ethnicity and type of residence*” by Arif Shala and Albulene Grajcevc from Kosovo, follows (<https://doi.org/10.1007/s10639-017-9657-3>). They point out that much present research in Kosovo studies the impact of variables such as inclusion, exclusion, residence, socioeconomic status, gender and parental education on digital competences among student populations. Their findings reveal that inclusion and exclusion in academic settings predict levels of digital competences reported by participants and students who reported being included also reported the highest levels of digital competences. Participants who reported feeling excluded reported the lowest levels of digital competences.

Rdouan Faizi from Morocco, then reports on: “*Teachers’ perceptions towards using Web 2.0 in language learning and teaching*” aiming to explore perceptions of language teachers in Moroccan higher education institutions towards using Web 2.0 in language learning and teaching (<https://doi.org/10.1007/s10639-017-9661-7>). This research study demonstrated that just like students, instructors are also immersed in these web-based applications and have recourse to them for both personal and educational reasons. It was, however, noticed that though the vast majority of the surveyed teachers claimed that Web 2.0 technologies have a positive impact on language teaching and learning, many of them are still reluctant to effectively incorporate them in education settings.

The next article, by Adina Shamir, Ora Segal-Drori and Ilana Goren from Israel examines the effect of an activity with an educational electronic book (e-book) on language retention among children at risk from learning disabilities. “*Educational electronic book activity supports language retention among children at risk for*

learning disabilities” looks at two modes of the educational e-book – with and without metacognitive guidance (<https://doi.org/10.1007/s10639-017-9653-7>). Findings showed a long-term effect of the activity with the e-book on vocabulary. However, for story comprehension, a decrease in recall of words and quotes and an increase in the recall of main ideas from the story were found seven weeks after the activity with the e-book.

“*Examining pre-service teachers’ acceptance of technology-rich learning environments: A UAE case study*” was contributed by Scott Parkman, David Litz and Nicolas Gromik from the UAE (<https://doi.org/10.1007/s10639-017-9665-3>). Their study addressed the extent to which pre-service teachers at a teachers’ college in the United Arab Emirates accepted and intended to utilise technology-rich learning environments in their future teaching practice. The effect of other significant factors, such as Computer Self-Efficacy and Perceived User Resources on their overall acceptance, was investigated. Perceived Usefulness and Computer Self-Efficacy were the two strongest predictors of Behavioural Intention with results supporting the validity of TAM-based research within the Emirati sociocultural environment.

The article that comes next: “*Examining pre-service teachers’ opinions about digital story design*”, notes that Mathematics is a subject in which students are generally not very interested and are unsuccessful compared to other courses (<https://doi.org/10.1007/s10639-017-9666-2>). Fatma Gizem Karaoglan Yilmaz and Hatice Durak from Turkey point out that it has been suggested that digital stories designed for educational purposes could be used to prevent students’ lack of interest and failure in this subject. The purpose of the described study was to investigate pre-service teachers’ opinions about how they could utilise the steps of Gagne’s model while designing digital stories for maths lessons. It was found that pre-service teachers had designed digital stories in which they often chose to attract students’ attention by creating interesting characters.

Soultana Karga from Greece and Maya Satratzemi from Turkey then write on: “*A hybrid recommender system integrated into LAMS for learning designers*” (<https://doi.org/10.1007/s10639-017-9668-0>). In the field of e-learning the Learning Design sector is important as it has the potential to preserve and disseminate effective pedagogical approaches and enhance the quality of the educational process. Their article examines how to leverage Recommender Systems and reuse pre-existing Learning Design solutions in order to support teachers in the Learning Design process. They present the implementation and the first evaluation results of Mentor, a Recommender Systems that supports teachers in finding pre-existing Learning Design to cater better for their needs and preferences so as to re-design them.

“*An adaptive mechanism for Moodle based on automatic detection of learning styles*”, by Ioannis Karagiannis and Maya Satratzemi from Greece proposes an automatic approach that detects students’ learning styles in order to provide adaptive courses in Moodle, based on students’ responses and the analysis of their interaction behaviour within Moodle by applying a data mining technique (<https://doi.org/10.1007/s10639-017-9663-5>). An adaptive mechanism that builds the user model based mainly on the proposed approach for automatic detection of learning styles, in order to adapt the presentation and the proposed navigation to students’ different learning styles and educational objectives, was implemented in Moodle.

From Sweden, Åke Grönlund, Matilda Wiklund and Rickard Böö present: “*No name, no game: Challenges to use of collaborative digital textbooks*” (<https://doi.org/10.1007/s10639-017-9669-z>). Collaborative digital textbooks – comprehensive materials covering entire curricula – are developing from being books in pdf format to becoming collaborative digital environments where teachers and students can communicate and engage in feedback and discussions, share and manipulate materials, test knowledge, and monitor results. Their reported study investigates how these digital environments are used in school practice and how collaborative tools are used to improve learning.

The next article is by Todd J. B. Blayone, Olena Mykhailenko, Roland vanOostveen and Wendy Barber from Canada and explores the Digital Competency Profiler, which is an online application for surveying the technology preferences and abilities of students in higher education. “*Ready for digital learning? A mixed-methods exploration of surveyed technology competencies and authentic performance activity*” explores this as a digital-learning-readiness tool (<https://doi.org/10.1007/s10639-017-9662-6>). Three authentic scenarios, comprised of six tasks mapped to self-report items, were constructed. Several situational influencers related to problem-solving strategy, device comfort, task difficulty and motivation, beyond the purview of the Digital Competency Profiler, were identified.

The final article for this issue: “*Mapping creative pedagogies in open wiki learning environments*” is by Mario Barajas and Frédérique Frossard from Spain (<https://doi.org/10.1007/s10639-017-9674-2>). They note that as applied to education, creativity has become an increasingly common, yet often unattainable learning objective and that educators need innovative approaches and tools to effectively apply creative teaching practices. Their study investigated how wiki methodologies can foster creative pedagogies. They suggest that Wikis constitute a good candidate for stimulating creative teaching approaches and can provide flexible and open environments which foster collaboration and students’ active participation. They propose a map of creative pedagogies that appear as the most prominent in the context of wiki-based learning, together with their characteristic components.

This issue of the journal of Education and Information Technologies (EAIT) has articles from researchers in Sweden, Malaysia, USA, Czech Republic, Canada, India, Estonia, Kosovo, Morocco, Israel, UAE, Turkey, Greece and Spain.

As Editor-in-Chief of this journal I am keen to see articles on *all aspects* of the use of Information Technologies in Education from the micro to the macro and from theory to practice. I hope to see articles from Education Faculty academics, School Teachers, Educational Administrators, academics from Computer Science and Information Systems and from others interested in any aspect of the use of computers in education. It would also be good to see articles covering an even greater diversity of topics relevant to Education and Information Technologies and from an even wider range of contributors.

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