Editorial: Using ICT to transform education

Stewart Marshall
The University of the West Indies, Barbados, West Indies

Wal Taylor
Cape Peninsula University of Technology, Cape Town, South Africa

Welcome to Volume 3 Issue 1 of the International Journal of Education and Development using Information and Communication Technology (IJEDICT). This issue contains articles concerned with using information and communication technologies (ICT) to transform education, especially in developing contexts. It brings articles from and/or about Africa, Australia, Caribbean, Hungary, India, Kenya, Mauritius, Nigeria, Romania and Saudi Arabia.

Female researchers and extensionists are important stakeholders in the development of agriculture in Nigeria because they are required to provide support to the female farmers who ordinarily would be more comfortable with female researchers. The article by E.I. Adebayo and O.M Adesope - "Awareness, access and usage of information and communication technologies between female researchers and extensionists" - examines awareness, access and utilization of ICT among female researchers and female extensionists. Information collected showed that female researchers and female extensionists are aware of ICT and both categories of respondents know how to access Internet on their own. However, respondents do not have adequate access to IT.

In her article "Exploring the use of computer technology in a Caribbean context: Views of pre-service teachers", Pier Junor Clarke presents a qualitative study of five pre-service secondary school mathematics (PSSM) teachers. The major goal of this study was to investigate the experiences and perceptions of the PSSM teachers as they explored the use of computer technology (CT) in their mathematics instructional practices, and to identify factors they consider necessary for successful integration of CT in mathematics instruction.

Gyorgy Katona examines whether applying ICT in teaching Physical Education (PE) increases pedagogical effectiveness in the article "The use of digital materials for instruction in sport topics at the University of West Hungary". A special e-book on sports was made in CD-ROM format, because of the low rate among our correspondence students who have access to the Internet. The CD-ROM contains theoretical and practical general material used in the course of teaching PE, demonstrates specialized vocabulary through videos and charts and provides the possibility for testing and self-testing. The CD-ROM also contains an audio version of the material for the benefit of sight-impaired students. The results indicated that using ICT increases effectiveness in teaching PE.

The incorporation of Information and Communication Technologies (ICT) into the educational curriculum has been promoted as a key step in bridging the digital divide. Despite considerable growth in the numbers of computers acquired by schools in Kenya in recent years and the sacrifices made to finance these, there has been little evaluation of their effectiveness. The article by Pádraig Wims and Mark Lawler – "Investing in ICTs in educational institutions in developing countries: An evaluation of their impact in Kenya" – describes research that seeks to redress this by examining the impact of ICT projects in educational institutions in Kenya. Teaching staff, current students and former students together with parents of current students were surveyed. Key informants were also interviewed to establish the current policies concerning ICT in

education in Kenya. The research revealed tangible benefits to students from exposure to ICT. It was also found that exposure to computers in schools influenced the career choices of former students.

In the article "Students' perceptions of prehospital web-based examinations", Brett Williams describes a study that examined the attitudes of prehospital undergraduate students undertaking a web-based examination (WBE) as an adjunct to the traditional paper-based examination (PBE). Students were asked to complete a questionnaire which was designed to obtain information about students' attitudes of WBE. Quantitative results produced high student satisfaction and acceptance of WBE as an appropriate teaching and assessment resource in the BEH degree.

A prototype application for an online coastal zone management module is described in the article "Computer mediated communication for effective teaching-learning of coastal zone management module" by Roshan Ramessur and Mohammad Santally. The prototype consists of three main components - the web-based interface, the mobile access interface and the adaptation mechanism that is used to provide just-in-time tailored content according to students' individual preferences. From a pedagogical perspective, this implies a complete re-engineering of courseware in CZM to meet the constraints imposed by an m-learning environment. Alteration of any of the component would cause an ecological imbalance in the system and the blending of the pedagogical approach in CZM to support mobile learners adds more flexibility to the learning process.

The advancements in ICT are reshaping the architectural design studio teaching and design practices. The digital-imperative to switch from analogue to digital mode has already begun to manifest itself at the schools of design. In "Revitalizing architectural design studio teaching using ICT: Reflections on practical implementations", Rabee Reffat introduces the application of two approaches representing various dimensions of revitalizing architectural design studio teaching using ICT: paperless design studio and collaborative virtual design studio. The paper reflects on the practical implementations of these two approaches including design process, communication and presentation, studio pedagogy, and students' learning. The next step ahead for architectural design studio teaching in which ICT acts as a partner is introduced.

In "Policy networks and the transformation of secondary education through ICTs in Africa: The prospects and challenges of the NEPAD e-schools initiative", Chijioke Evoh examines the prospects and challenges of the New Partnership for Africa's Development (NEPAD) e-schools initiative. Based on qualitative research approach, this study aims to critically evaluate the prospects and challenges facing the e-schools collaborative initiatives under the auspices of the NEPAD. At the organizational level, the study argues that sustained technology intervention is based more on the resolve of the partner members, especially the political will of African governments. Besides, the e-school initiative stands to gain from the experience of developing countries that have successfully integrated ICTs in education through collaborative strategies.

Although an increasing number of faculty are very enthusiastic about adopting technology because of the potential of newer tools for their students, there is still a large number of faculty who seem hesitant or reluctant to adopt technology for their teaching tasks. In their article "Integrating technology into the teaching-learning transaction: Pedagogical and technological perceptions of management faculty" Payal Mehra and Monika Mital describe a study that examined faculty perceptions about technology enabled constructivist pedagogy Vs the didactic pedagogy followed even today in most of the management education institutes.

In "Computer-based testing on physical chemistry topic: A case study", Sorana-Daniela Bolboacă "Iuliu Haţieganu" and Lorentz Jäntschi describe research designed to assess the knowledge on physical chemistry topic of the undergraduate first year students' at the Faculty of Materials

Science and Engineering, the Technical University of Cluj-Napoca, Romania by the use of an auto-calibrated system. The methodology of multiple-choice questions construction and the evaluation methodology are presented. The students performances in terms of number of correct answers and time needed to give a correct answer were collected and analyzed. The future plans of system development are highlighted.

The emphasis in IJEDICT is on providing a space for researchers, practitioners and theoreticians to jointly explore ideas using an eclectic mix of research methods and disciplines, and we welcome feedback and suggestions as to how the journal can better serve this community.

Stewart Marshall and Wal Taylor
Chief Editors, IJEDICT