Exploiting the Adoption and Implementation of Electronic Learning in a Technical University in Ghana

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ABSTRACT

Although in Accra Technical University (ATU), Ghana, there exists a traditional Face-to-Face (F2F) mode of education already in place, the implementation of electronic learning (e-learning) through ICT in education will increase the number of students admitted yearly. Lack of academic facilities makes e-learning an attractive alternative. Consequently, this article employed a questionnaire as a research instrument with reference to the Technology Acceptance Model (TAM-2) as a theoretical framework. In all, questionnaires were administered to 190 students and 14 lecturers in the Faculty of Applied Sciences in Accra Technical University (ATU). Based on the responses received, various types of e-learning systems were exploited and a SWOT (Strength Weaknesses Opportunities and Threats) analysis was conducted to validate the sustainability of proposing and developing a suitable e-learning system for ATU. It is envisaged that successful implementation of the e-learning system proposed in this article will practically increase the use of ICT in education by both lecturers and students in ATU.

KEYWORDS
Accra Technical University (ATU), Electronic Learning, Ghana, ICT in Education, Technical Education, Technology Acceptance Model

INTRODUCTION

Globally, education is the key to the national development of every developed or developing country. Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits. Educational methods include storytelling, discussion, teaching, training, and directed research. The traditional mode of education which involves physical Face-to-Face (F2F) between

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teachers and students in a classroom or a similar location setting was the first mode of education (Shachar & Neumann, 2003; Gamlil & Davidovitz, 2005; Shen, Chung, Challis, & Cheung, 2007).

With the advent of rapid and tremendous growth of Information and Communication Technology (ICT) in the past decades, traditional F2F mode of education has hastily migrated to educational modes that employ/utilize technology as part of teaching and learning processes. Some of these technological modes of education include: (i) Mobile Learning (Oyelere, Suhonen and Sutinen, 2016; Asabere, 2013); (ii) Mobile Social Learning (Xia, Asabere, Ahmed, Li, & Kong, 2013; Yamin, Al-Ismail, Gideon, & Sankaranarayana, 2016); (iii) Electronic Learning (Al-Adwan, Al-Adwan, & Smedley, 2013; Ansong, Boateng, Boateng, & Anderson, 2017; Almarah, 2014; Asabere & Enguah, 2012; Asabere, 2012); and (iv) Distance Learning (Tagoe & Abakah, 2014; Asabere & Enguah, 2012; Sampong, 2009; van Brakel & Chisenga, 2003).

Innovative modes of education through computer technology as mentioned above have become necessary and vital as a result of the fact that the F2F mode of education requires improvements such as: (i) making education more technological, (ii) admitting more students due to lack of physical classrooms, (iii) catering (support/substitute) for students currently in the working environments who may not be able to physically attend lectures/classes during the day, and (iv) paving the way for teaching and learning to have different approaches and phases, thereby making education more interesting (Tagoe, 2012; Ansong et al., 2017; Asabere & Enguah, 2012; Budu, Yinping, & Mireku, 2018). The migration of F2F or its combination with other modes of education requires critical research by educational establishments wishing to utilize such technological educational modes (Asabere 2012; Trifonova, 2006; Ansong et al., 2017). Because of the technological aspects in such educational modes, both teachers (lecturers) and students should be trained on how to use ICT, Internet and computers for teaching and learning activities respectively. As a consequence, the main stakeholders should be willing to accept technology as part of their education process (Asabere 2012; Trifonova, 2006; Al-Adwan et al., 2013).

E-Learning involves the use of computers or digital electronic devices as tools/facilities for the provision of teaching and learning activities in a particular educational institution (Moore, Dickson-Deane, & Galyen, 2011). E-Learning is usually limited to the role of aiding self-paced learning and distance education, thus terms such as online learning, web-based learning and distributed learning are also used as reference points for e-learning (Moore et al., 2011). Additionally, e-learning is one out of several concepts which is used for describing a host of new learning methodologies in parts of or in the entire learning process.

E-Learning is not confined to any particular part of the educational system, rather the contrary, one of the advantages of e-learning is that it makes it possible to extend the reach of educational and training systems into new areas. Through the provision of ICT in education, e-learning can be applied both in the formal educational system (public schools, colleges, universities etc.), as well as in vocational and technical training for knowledge sharing, participation, and lifelong education (Buabeng-Andoh, 2012; Asabere, 2013; Asabere, Togo, Acakpovi, Torgby, & Amapdu, 2017).

Teachers and lecturers in reputable and advanced tertiary institutions are facing different challenges than their predecessors in teaching students (professionals for tomorrow). In the past few decades, advances in academia have increased demands in academic faculty, resulting in less time for teaching than has previously been the case. This innovation that started in developed countries is rapidly becoming global. E-Learning has become more popular in developing countries (Tagoe, 2012; Ansong et al., 2017; Asabere & Enguah, 2012; Budu et al., 2018; Namisiko, Mindila, Chepkoech, & Nyeris 2014; Namisiko, Munialo, & Nyongesa, 2014). Consequently, e-learning has the potential to transform Ghanaian technical universities. E-Learning is increasingly gaining universal acceptance as a possible means of enabling large number of student’s access to education. Many tertiary institutions in Ghana utilize e-learning (Asabere & Enguah, 2012; Ansong et al., 2017). However, the implementation or availability of e-learning in technical education, specifically Accra Technical University (ATU) in Ghana is very scarce (currently not available).
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