

Research Application Summary

Social collaborative e-Learning Contextual Model

Otto, F., Amitu, D.M. & Akena, M.

Regional Universities Forum for capacity Building in Agriculture (RUFORUM), P. O. Box, 16811,
Wandegeya, Kampala, Uganda

Corresponding author: f.otto@ruforum.org

Abstract

This paper introduces a contextual model for adopting Social Collaborative e-Learning (SoCeL) in institutions of higher learning. It is based on a study that was conducted in two universities in Uganda to provide a better understanding of learning environments within institutions of higher learning in a developing country in order to explore ways of improving learning using social collaborative technologies. There are four components in the model, namely Students, Lecturers, Learning materials and External world. The paper explores how technology platform influenced by social and pedagogical factors determines the interaction among these four components in a learning environment. This is aimed at guiding decision makers on the choice and use of social collaborative technologies for teaching and learning in higher education institutions.

Key words: Informal learning, learning environment, learning materials, learning technologies

Résumé

Cet article présente un modèle contextuel pour l'adoption de l'apprentissage en ligne collaboratif et social, dans les établissements d'enseignement supérieur. Il est basé sur une étude qui a été menée dans deux universités en Ouganda afin de fournir une meilleure compréhension des environnements d'apprentissage au sein des établissements d'enseignement supérieur dans un pays en développement pour explorer les moyens d'améliorer l'apprentissage en utilisant les technologies de collaboration sociale. Le modèle comprend quatre composantes, à savoir les étudiants, les enseignants, le matériel d'apprentissage et le monde extérieur. Cet article a exploré comment la plate-forme technologique influencée par des facteurs sociaux et pédagogiques détermine l'interaction entre ces quatre composantes dans un environnement d'apprentissage. Il vise à guider les décideurs dans le choix et l'utilisation des technologies de collaboration sociale pour l'enseignement et l'apprentissage dans les établissements d'enseignement supérieur.

Mots clés: apprentissage informel, environnement d'apprentissage, matériel d'apprentissage, technologies d'apprentissage

Introduction

The use of social collaborative technologies such as Facebook and Twitter is increasingly becoming a common trend in higher education (Benson, 2014). Recent studies (Bunney, 2015; Lewis, 2015; Lytras *et al.*, 2015; Xu *et al.*, 2015) , suggest that this trend has led to the continuous evolution of

e-learning, resulting in what is referred to in this paper as social collaborative e-learning (SoCeL). It is important to note that SoCeL focuses on learning which is characterized by interactions (Alenezi and Shahi, 2015; McLaughlin and Rhoney, 2015; Violante and Vezzetti, 2015;) and collaborations (Du *et al.*, 2012; Kahiigi Kigozi, 2012; Bunney, 2015; Xu *et al.*, 2015).

This research contextualizes SoCeL as learning in an environment that involves integrated informal and formal learning scenarios with interactive and collaborative tools. This kind of learning model emphasizes informal sharing and construction of knowledge among participants using social collaborative technologies as their primary means of communication or as a common resource (Selwyn, 2007; Vivian, 2011; Kassens-Noor, 2012). In many institutions of higher learning, lecturers and students are using these technologies to support their learning (Prestridge, 2014; Thompson *et al.*, 2014; Zhou *et al.*, 2014; West *et al.*, 2015).

Some studies (Zaidieh, 2012; Tess, 2013) have however shown that using these technologies to enhance the learning process have not had definite success. Success in this case refers to attainment of a desired outcome (expectations) especially in terms of the impact on the delivery and quality of learning (Kahiigi Kigozi *et al.*, 2011). Lewis and Wilson (2011) argues that information technology (IT) initiatives particularly, software systems are often implemented without strategy, policy or detailed project planning and therefore they may fail to deliver the desired outcome. As suggested by these studies, there are several challenges which contribute to the failure in implementing e-learning using those technologies and include notably lack of frameworks to guide the effective integration of these technologies for learning.

This paper therefore introduces a contextual model for SoCeL environment to enhance e-learning in higher educational institutions especially from an African perspective. The model can be adopted in implementing e-learning in higher education institutions in other countries within and outside Africa as well.

Methodology

This paper documents a study that was conducted in two Ugandan universities (Makerere University and Uganda Christian University) in 2014/2015 to explore the adoption of social collaborative technologies by students and lecturers. It is an exploratory study based on an interactive model of research design (Maxwell, 2012) and it focuses on developing a model to guide the integration of SoCeL in higher education. This empirical study draws from requirements of engineering process and uses a mixed methods approach involving case study (Yin, 1993; Yin, 2009; Yin, 2011) and human-computer interaction ethnography (Martin *et al.*, 1997; Hollan *et al.*, 2000; Nuseibeh and Easterbrook, 2000). The purpose was to understand the environment in which social collaborative technologies were adopted within those universities and draw lessons that others can learn from whilst choosing to adopt social collaborative technologies for learning support.

A conceptual framework for SoCeL was designed (not presented here) and used to develop the data collection tools. Survey questionnaires, interviews, focus group discussions and participant observation were used to obtain data that were also used to validate the model. From the data that were initially collected using survey questionnaires, an analysis was carried out to understand the environment in which students and lecturers use social collaborative technologies to support the learning process.

Both qualitative and quantitative techniques were used to analyze these data and identify the requirements for learning environment and technology adoption based on the participants' experience. To validate these requirements and to carry out further qualitative exploration, three other techniques – interviews, focus groups, and participant observation were conducted. These methods are useful for validating software requirements and design specification (Boehm, 1984; Nuseibeh and Easterbrook, 2000) and also in ensuring respondent validation and triangulation, which are important in increasing validity of qualitative data (Maxwell, 2012).

The requirements identified in terms of SoCeL environment are presented as a technology platform with four components in the model.

Social collaborative e-learning contextual model

This model was developed based on the data presented here which were obtained through a survey questionnaire and a series of interviews. In order to establish the extent to which SoCeL is possible within the contexts of a university especially in a developing country, the study considered the learning environment in two dimensions: the method of delivery of learning material and the learning contexts. Three methods of delivery of learning materials were considered, namely: face-to-face, online, and blended learning. The learning contexts considered were: social, technological, and pedagogical learning contexts.

The study shows that there is evidence to suggest that students and lecturers would like to adopt a blended learning as opposed to purely face-to-face or purely online learning. The assumption this paper draws here is that the respondents acknowledge the increased availability and capabilities of online delivery at the same time would like to experience the benefits that are associated with the traditional classroom environment. This therefore poses a challenge on how to make the online classroom more accommodative of the traditional classroom characteristics. While the increased availability and capabilities of online delivery method is a positive change, questions emerge as to its effectiveness.

One way to address effectiveness of online learning is through a careful blending of learning contexts. SoCeL approach aims to achieve this through providing a combination of technologies to reflect students' and lecturers' desire for a blended e-learning environment. In order to explore the environment under which SoCeL may be adopted in higher education level, three contexts have been considered namely; social, technological and pedagogical contexts. E-learning environment must address simultaneously these contexts (Hudson, 1999) for effective implementation. A SoCeL model (Fig. 1) is proposed and discussed in this paper.

SoCeL aims to provide an environment characterized by (a culture of) active social interactions and collaborations between student and lecturer or among students themselves or students with external world using learning management system or social software (technology) in order to support effective formal and informal learning (pedagogy). SoCeL environment combines the advantages of online collaborative learning and social networking.

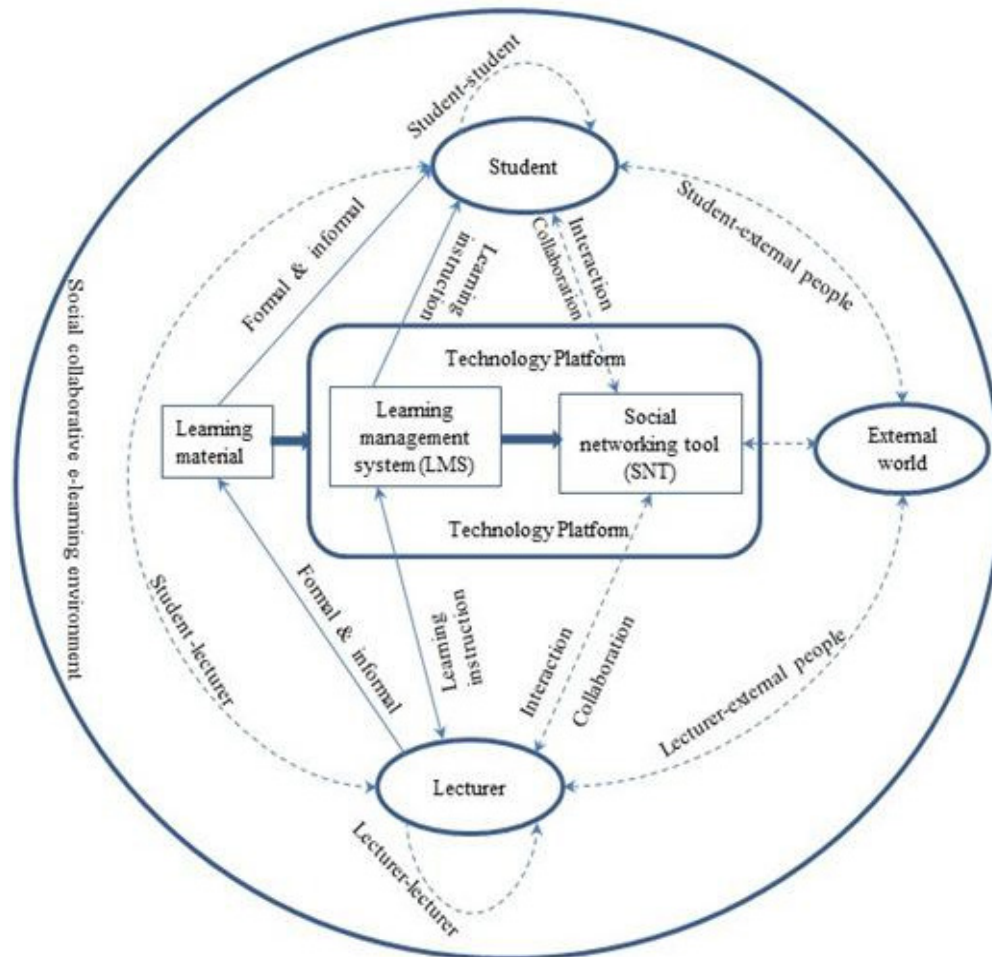


Figure 1. Social collaborative e-learning contextual model

The Internet does not only support accessing information but it also facilitates the creation of online communities through what is referred to as interactive Web. New advances in Web-based technology have brought opportunities to education and training in particular through online instruction (Johnson *et al.*, 2000) and interactions. The interactive Web supports interaction among individuals who share common interests and goals.

This study sought to develop a model for SoCeL as an interactive approach to e-learning implementation. The learning environment may be interpreted as the contexts in which learning occurs and which affect students' achievement and attitudes. The SoCeL environment is defined to include social, pedagogical, and technological contexts in which students and lecturers actively interact and collaborate as illustrated in Figure 1. This proposed model illustrates how the SoCeL environment is an integrated e-learning approach, highlighting social, technological and social texts in which learning is made interactive and networked. The key concepts in the model are learning material, learning management system, social networking tool, which have been explained in respect to the three learning contexts. The next sections explore each of these contexts and how they shape the environment for the adoption of SoCeL by university students and lecturers in a developing country.

As depicted in Figure 1, the choice of what tool and how to use it for learning / teaching is dependent on the SoCeL contexts as explained in the following sections. The following determine the type of interaction within a SoCeL environment: Learning materials (can be formal and informal), and people involved (who is providing material and for who and for what purposes). These determine whether the interaction is formal or informal characterized with presence of deliberate learning instruction (represented with solid lines) of social interaction including for collaboration (represented with dotted lines). For example, when a student is interacting with a peer, it can be either informal interaction or a formal interaction for the social or collaboration. The contexts of the SoCeL environment can be categorized into social, technological, or pedagogical as explained in the following sections.

Conclusion

This paper has highlighted the critical components to be considered in designing a learning contextual environment whilst promoting social collaborative e-learning in higher education institutions. The focus was on three environmental contexts under which SoCeL is adopted. These are social, technological, and pedagogical contexts, which were used to conceptualize a model for SoCeL environment presented in this paper. It is hoped that this paper provides lessons for institutions of higher learning especially in Africa and encourages adoption of SoCeL contextual model in a bid to improve the quality of learning through use of social collaborative technologies.

Acknowledgement

This paper is a contribution to the Sixth Africa Higher Education Week and RUFORUM 2018 Biennial Conference.

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