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DELIVERY OF E-LEARNING THROUGH SOCIAL LEARNING NETWORKS

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ABSTRACT

Over the past two decades policies and speculations have been evident about the importance of internet use including technologies in education and learning at all levels to individuals and societies. The purposes, theories and ways in which learning with technologies ought to be conceptualised and functionalised is generating an increased body of literature. With the arrival of Web 2.0 and Semantic Web however not enough is known about the ways in which these online technologies interact and may interact with student's learning experience. There are gaps in our knowledge on the role of social networking sites on student learning experiences. Social media tools have become ubiquitous. You can see our students use them all the time. Among them most popular tools are Facebook, Wiki, YouTube, bulletin board, LinkedIn, blogging, and twittering. The advancement of modern technologies tries its best to accommodate the needs from people, especially the younger generation. As educators, how can we take advantage of this momentum? With the advent of Web 2.0 tools, educators are looking to these new technological tools to examine its potential in enhancing teaching and learning. While its runaway success as a social networking tool is now renowned, the use of Facebook for educational purposes may be considered still at its infancy stage. This paper will bring together recent research findings on how learning experience of students at higher and further education level is influenced by the latest development and technological advancements of social networking sites.

KEYWORDS

Social Learning Networks, Web 2.0 technologies, e-learning, social learning technologies.

1. INTRODUCTION

Social networking sites have seen tremendous growth and are widely used around the world. Nevertheless, the use of social networking sites in educational contexts is an under explored area (Ryan et al, 2011). Social networking sites (SNSs) have the potential to facilitate interaction, communication, and collaboration, and as a result have been prominently featured in discussions centring on the use of technology to support and amplify educational endeavours (Greenhow, Robelia, & Hughes, 2009). Empirical research on their role in complementary education is limited, even though researchers have identified an accelerating use of social software in formal learning contexts (Schroeder, Minocha, & Schneider, 2010).

Facebook™ is one of the most popular SNSs used today, as evidenced by its 500 million active registered users and its rapid growth rate estimated at 105 percent from 2008 to 2009 (Facebook, 2010a; comScore, 2010). It has been identified as a potential educational tool because it is already used extensively among college students. Bowers-Campbell (2008, p. 82) states, "Facebook™ is student-friendly, student centred, and student-controlled; the social nature of Facebook™ invites participation instead of mandating it." In addition, Charnigo and Barnett-Ellis (2007) suggest that "by exploring new types of Internet services such as Facebook™ instead of quickly dismissing them as ir-relevant, we might learn new ways to reach out and communicate with a larger segment of our [academic library] users" (p. 31). Therefore, exploring a SNS tool such as Facebook™ in an educational context is both relevant and timely. Our objective is to evaluate factors, effects and influences of social networks on students social technology mediated learning.

The research problem: The use of social media by students has evolved the teaching and learning strategies but research on the influences of sharing collaborative tools in classroom such as social networks has not been fully investigate.

The research question: Are social networking software an influential tool in student's learning?

Hypothesis 1:"The use of social networks helps as a complementary tool to enhance student's learning experiences".

2. RESEARCH SCOPE

This research study aims to close the gap in the literature by drawing conclusion about the social learning technology as a framework that addresses the overlapping pedagogical needs of e-learning and social networks with suggestion of methods for implementation of social networks in learning environments. This study aims to use mixed methods of qualitative data analysis using case study and quantitative data analysis using descriptive statistical methods.

The literature review conducted identifies the work of many researchers focusing on the use of social networks and its effects on learning for many years since the emergence of information and communication technology in e-learning environments. Research studies suggest that using social networks with a potential to substitute learning management systems has pedagogical, social and technological affordances which allows distribution of announcement, sharing ideas and resources and implementation of online discussions. However, substitution of a Learning Management System (LMS) with social networks has constraints due to lack of support for file format that allows direct uploads and also the lack of organisation in developing discussions. Using Facebook for example; as a substitute for LMS enables learners to interact with peers and conducts easy communication but it fails to provide a safe environment as student's perceived privacy is decreased. Research performed in this area suggest that for effective use of Facebook in learning, many other factors such as effective instructional design, positive instructor's attitude and strong technical support are crucial. (Ozkan & Koseler, 2009).

One of the research areas that have been neglected is the information sharing feature of social media and its implications for learning. Other under searched areas are studies that focus on the challenges faced by higher education learners and the cause of learning difficulties with social networking for learning purposes. The need remains for qualitative investigations that enables our understanding of how social media impacts academic learning.

Another area which has been under researched is the effectiveness of social networks in higher education due to lack of studies that supports the successful implementation strategies of social networks for learning in higher education. Studies suggest that many factors need to be giving careful practical attention such as the type of learner and also learner's characteristics need to be considered. Wang, Q., Woo, H. L., Quek, C. L., Yang, Y. and Liu, M. (2012).

3. LITERATURE REVIEW

Constructivist pedagogy focuses on students constructing knowledge. From a social constructivist (and constructionist) perspective, this construction occurs primarily through social interactions (Berger & Luckmann, 1966; Vygotsky, 1978; Wertsch, 1986). Web 2.0 collaborative technologies promote social interaction. They allow students' work to be read and commented on by a larger participant audience than afforded in traditional constructivist education. Using collaborative technologies, students can communicate with classmates as well as with others around the world. Comments made by this diverse, participatory audience often generate discussions that enhance learning.

Web 2.0 tools can promote user participation and knowledge production and thus fit well with social constructivist pedagogical theories. These tools have the potential to transform classes from teacher-centric, transmission instruction to social constructivist, student-participatory approaches, from individual-focused pedagogies to learning community approaches. Even as constructivism has and continues to be a main focus of learning theorists, the technological tools used in education have become increasingly powerful and crossed the gulf between day-to-day life and education. These tools relate to one another under the term technology and are the subject of this study i.e. Social Learning Technology.

Social Learning Technology has been embraced by some and disgraced by many, yet today's digital natives navigate virtual worlds without hesitancy or misgivings. Research suggests that "Students are far more technologically savvy than the institutions that support them" (Desai, Hart, & Richards, 2008, p. 329).

This poses a problem as teachers try to reconcile personal constructivist pedagogies with a tool they are unaccustomed to or intimidated by. Yet, it's this very social learning tool which opens the door to new and innovative applications of constructivist teaching and learning methods. According to Desai, Hart, and Richards (2008), "The vast amount of information that computers supply on a daily basis has allowed teachers and students new ways to explore education compared to ordinary instructional tools" (p. 329). Social Network Technology offers flexibility and adaptability reflective of pedagogies across various learning models based in constructivism.

According to Wenger (2002),"The community creates the social fabric of learning" (Wenger et al., 2002, p. 28). The community is a group of people who learn and interact together, building relationships that result in a feeling of belonging and mutual commitment (Wenger, 1998).

Brown (2001), states that interaction is at the heart of communicative competence. When a learner interacts with another learner he/she receives input and produces output. Young people can learn more readily when communicated information is tangible and directly accessible to their senses—visual, auditory, tactile, and kinaesthetic. With experience, learners grow in their ability to understand abstract concepts, manipulate symbols, reason logically, and generalize.

Communication provides opportunities for learning. In the cognitive learning tradition, participating with others in groups can provide an opportunity to generate explanations, which results in deeper individual cognitive processing and hence, better learning (Chi, de Leeuw, Chiu, & LaVancher, 1997).

Research and practice indicates that communities provide fertile ground for socio-cultural appropriation (adopting expert practices through social processes) as well. (Lave & Wenger, 1991) discuss the reciprocal relationship between communities and learning.

Virtual learning environments (VLEs) are widespread in higher education today, typically used

to deliver instructional materials and facilitate communication within a course. Remote delivery of courses became a viable option with the World Wide Web and online education of various sorts is now routinely available to vast numbers of students (Peffers & Bloom 1999; Alexander 2001; Chen & Dwyer 2003). Various terms have been used to label or describe forms of education supported by information technology. These include e-learning, web-based learning, online learning, distributed learning and technology-mediated learning; with e-learning probably the term most commonly used to describe education and training that networks such as the Internet support. A virtual learning environment (VLE) is an information system that facilitates e-learning. VLEs process, store and disseminate educational material and support communication associated with teaching and learning.

In terms of using new social networking tools and environments as a supplement to current

Classroom teaching, one of the initial challenges will be to develop learning activities that use these tools to leverage student motivation and learning. Researchers argue that this is made more challenging as children of the "digital age" have different needs than previous learners (Brown, 2002; Schrum & Solomon, 2007; Green & Hannon, 2007). Pedagogical methods may need to be adjusted in order to allow for students to increasingly learn from each other. Green & Hannon (2007, pg. 26) indicate, "with the advent of blogging and tools such as Wikipedia, young people are just as likely to seek feedback from their peers and strangers as they are from teachers and parents. This has led to the blurring of the boundaries between expert and amateur, friend and mentor."

4. METHOD

In this study the interpretive research method with the aid of pilot study method was used to investigate the use of social networks in classroom. The constant comparative method (Glaser & Strauss, 1967) was used to analyse online survey responses, arriving at categories and data patterns. We engaged in open coding of all data in order to identify emerging patterns with regards to student's online learning experiences on the same course of study. The patterns were compiled and codes confirmed across all participants. Open coding of data resulted in patterns that could be grouped into themes. Learners found their interactions with others were important in helping them make Sense of the subject matter and reported that these interactions extended their learning.

The ease with which participants were able to communicate was also deemed to be important to the social connectivity. 17

The participants in this study included students at a Higher Education Institution and its associated Further Education College studying on degree and advanced level courses. Learner's achievement data and online performance in a pilot study were collected and compared in order to establish the match between student's level of attainment and their online performance while using social networks such as Facebook as a complementary study platform.

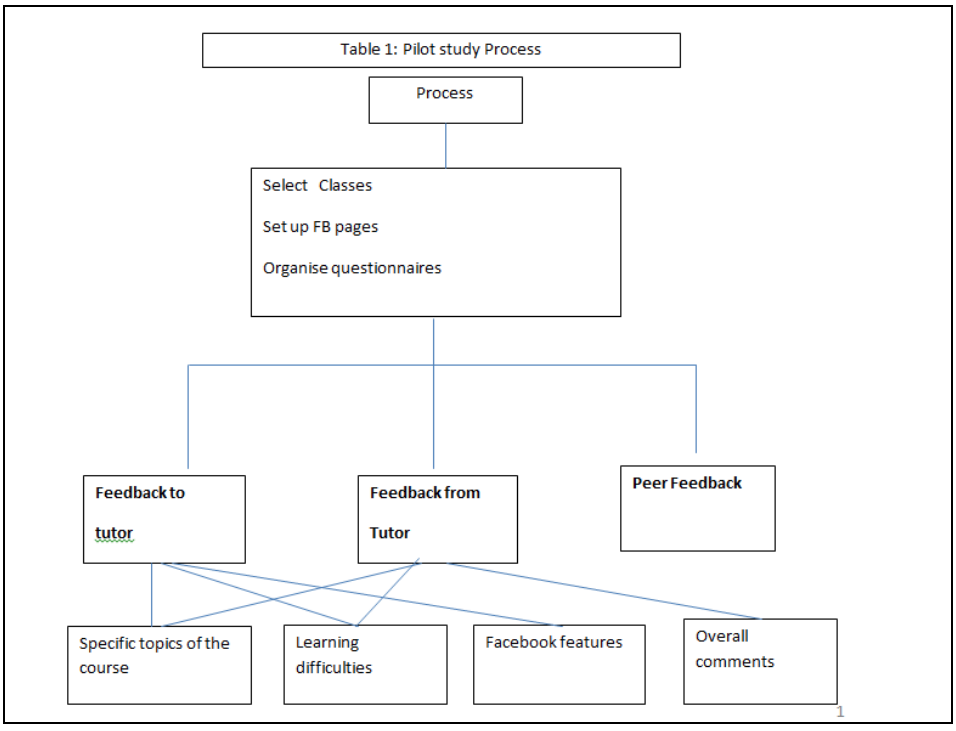
Second series of pilot study were conducted in order to evaluate the role of social networks and its effects on learning outcomes through enhancement of communication methods. Both qualitative and quantitative data were gathered and analysed with some suggested guidelines. Experiments were designed according to participant's level of study. The first pilot study involved three groups of students at Middlesex University on the first year of an I.T. Degree course on a study period of two weeks. The second pilot study involved four groups of students at an associated FE college on an advanced level ICT course on a study period of two months.

5. DATA COLLECTION

The survey was primarily used to collect responses to open-ended questions that sought feedback about (a) student experiences, and (b) specific learning activities and attributes of the course. The first study survey consisted of questions related to student's learning activities, tutor's teaching style and learner's attitude towards their tutor, learner's assumptions and regards towards using social networks as a tool and its future potential.

Data collected related to participant's response to questions. Data was coded and themes identified. Also data related to participant's predicted achievement grades were analysed against the data collected related to some open ended questions that relates to learner's feedback on their instructor's level of support and tutoring style. This statistical analysis identified that a positive correlation coefficient identified through this study suggest that there is an strong relationship between participant's level of achievement and their preference for their tutor's teaching style and their attitude towards using Facebook as a collaborative tool that enhances student's learning experiences.

Table 1. Pilot study process



5.1 Findings

The noticeable theme is that almost all members of these groups liked their tutors teaching style and their responses indicate that they were satisfied with the level of feedback and the support received from their tutor, although some results indicate that participants did not take part in the process; either because they did not regard the question as relevant or supportive. Another noticeable trend is that almost all participants found the creation of a Data Flow Diagram (DFD) a difficult task, as well as the creation of an Entity Life History (ELH), identifying entities for the Business Information Systems (BIS) module and drawing relationships. Another trend was the lack of or the irresolute responses as to whether the groups regarded Face Book (FB) to be a medium for enhancement of their learning with BIS module.

In the direct question and answer of 42 participants, 81% stated that they like using FB and 52% said it does facilitate communication and connection between people. Around 14% thought it causes distraction from studying and 10% said they did not like doing difficult things using FB while also 10% did not know FB's potential use. Around 7% thought they do not like the lack of privacy and also around 5% said that FB pages lack required structure for learning. Less than 1% said they do not like using FB at all.

5.2 Interviews

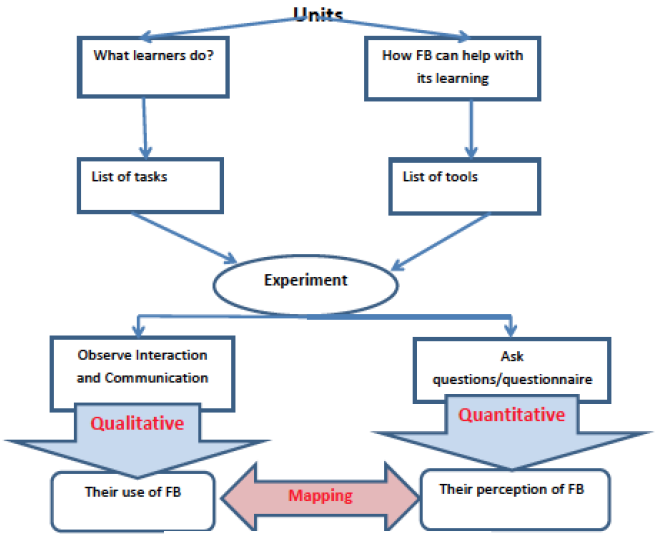
Interviewing participants in the three groups identified some themes. It can be seen from the pattern of its use that those participants who favoured and enjoyed using Face Book as a social media also used it for establishing communication and connecting to others within the same group or other groups outside university. A large proportion of those who favoured using Face Book also regarded its use as a positive aspect that enabled them to use instant messaging, chatting, tagging photos, watching videos etc. A comparison of the themes indicates that a user with a high positive response also corresponds to a low negative aspect. Amongst the implicit themes, there are a few anomalies that do not follow the pattern. For example user25 has a high positive response and also a relative high negative aspect in comparison to the other users. This could be an indication of the user's balanced view of Face Book use.

This implies that this participant has either informed views on positive and negative aspects of Face Book or that is in favour of use of this media on moderation. A small proportion of approximately 4.8% of the users were able to lend themselves to both the positive and negative aspects of Face Book use; obviously indicating that the vast majority were very one sided.

5.3 Pilot Study Process Analysis

Participants in this experiment belong to two groups of first year and second year students. The unit delivers content on learning about computer systems that include both hardware and software. This group learns how the components of motherboard work and relate to each other in operating the hardware and also how the different software of a computer system including operating system and application software complement the tasks of the hardware. Students are assessed on the knowledge of these topics by completing tasks within projects that include individual and groups work and submit their reports through the Virtual Learning Environment (VLE) environment on the college's website. Another module undertaken by the second year groups is software design in which students learn the history of development of different programming languages along with learning how to program within a fourth generation language such as visual studio. Assessment is based on demonstrating their knowledge of history of different programming language generation and classification, characteristics and features as well as development; testing and documentation of software designed and programmed using a 4GL. Majority of student's work is based on independent learning and assessment while a small fraction of each module is based on group work and presentation.

Table 2. Mapping of Pilot study processes



5.4 Focus Groups

This study examined the effectiveness of using social network Facebook for improved communication by learners on advanced level of ICT course. All students who had completed their first semester at college were given the opportunity to participate in this study. Almost all students who were invited took part in this activity with a minority of those who had a more isolated presence and were not welcoming interactions with other classmates or tutor.

Once member of groups were selected and recruited, participants were informed that one aspect of the study would require them to photograph themselves and upload it on their profile. These photos were then to be uploaded to the Facebook research group created specifically for this study, and they were instructed to make brief comments about their posts. What transpired from there became a wealth of information from which it was possible to collect valuable data to build upon and report back as findings. The group was private, so activity such as photo uploads and messages was only visible to the members and administrators of the group, allowing participants to speak freely without sharing these updates with their entire Facebook network. This feature is also beneficial in that the group members can see and comment on each other's uploads, which creates discussion and an interesting dynamic to observe where tutor asked to perform similar tasks react to each other's interpretations of the task. What's also great about it is that we can communicate to the entire group at once to notify them of study changes, additional aspects of the study, let them know their posts are well received, and so on.

The biggest benefit is that Facebook's ubiquitous popularity makes it a simple tool for the participating groups to use – browsing, receiving messages, uploading photos and many other characteristics of the site are fairly common to most people, especially among the demographic we were studying (ages 16-24). The rise of smart phones and the many options for mobile uploads to Facebook (via text, email or through a mobile app) allowed participants to upload their content live from the location wherever convenient. As a result, this process was not cumbersome to participants and made it that much more enjoyable for them.

5.5 Observations

There was a diversity of expected and unexpected outcomes. Most students showed somehow an uncertain view on use of Facebook in presence of their tutor and although some seemed more forward for the idea, few could not understand the relevance at first. At first very few students communicated that they do not use this media at all and therefore lacked the required ability to enable them make a comment on Facebook's suitability for its purpose. It was interesting to see the same few participants had a totally different view following couple of sessions using Facebook for the purpose of this experiment.

The online interaction on Facebook indicated that instant messaging feature of communication to be a more favoured aspect of its use with these participants. Many students favoured the ubiquitous characteristic of Facebook and accessing this social network on Mobile technology. Many students were concerned about privacy issue with Facebook use and therefore did not regard its use for learning and communication to be a favoured feature to the point that even the issue of separating personal status from educational status on Facebook did not seem an attractive alternative to them. The major problem reported by some students was the issue of distraction and diversion from the focus of activities due to the social nature of Facebook.

6. DISCUSSION

The asymmetric information flow is a dominant characteristics of personalised platforms created. Web 2.0 creates the use of centralised nodes for social networking users. Through the shared online social networking sites, web users interact and exchange information with others which mirrors real life networks between people. Use of Web 2.0 emphasises collaboration, knowledge sharing and conversion amongst people. This is seen as a superior characteristic than just simply having a discussion within a public domain. The focus of Web 2.0 is on user driven content in which user messages do not represent goal orientated communication. As the concept of "Web 2.0" has quickly gained widespread popularity, a new generation of E-learning associating with Online Social Networking sites will impact students' learning experience. Social networking software has provided many features that can serve the learning sector in many ways.

(Howe, 2006) claims that users recognise the web as first a service delivery platform and second as the collective wisdom of the crowd. These are the two important attributes of Web 2.0 technology. Facebook as a strong example of Groundswell phenomenon (Li & Bernoff, 2008), exists both as a service delivery platform and also as a stockpile for collective groupthink. Facebook promotes the user as a centralised node around which information revolves. The use of Web 2.0 and social networking technology represents an attractive force that empowers people's ability to communicate and foster social connections with one another to create a variety of communities of practice.

For the purpose of next phase of this study, a series of pilot studies are considered. Under the pragmatic research approach and using mixed methods of qualitative and quantitative data collection, learner's online response to surveys, interviews, and questionnaires will be logged as well as observation of their methods of communication, comment, tags, message and online pokes and chats will be collected. Also quantitative data related to performance and grades of these candidates using online media against these data obtained through traditional teaching methods are to be analysed through simple statistical methods, and interpreted.

7. CONCLUSION

The social learning technology framework proposed in this research study is a solution based on Web 2.0 tools and technology which defines a model for its role and application. It is aimed that this framework also will address the needs of its implementation in higher education and reach beyond its needs to persevere its integrity of use. The SLT framework focuses on social aspects evaluating group dynamics based on electronic learning and communication styles. This framework relies on technology support with the advent of web 2.0 technology tools and advanced e-learning systems.

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