An investigation in social network use for e-education: The case of Facebook

Georgios A. Dafoulas[1] and Azam Shokri[1]
[1]Computer Science Department, School of Science & Technology, Middlesex University, London, United Kingdom
(g. dafoulas||a.shokri)@mdx.ac.uk

***Abstract*- 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 reclaimed, 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.**

I. 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. 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" [1]. 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 [2].

This study, focuses on the investigation of social networking tools such as Facebook as aid tools for students in their educational progress when beginning a new program of study. The available literature on the support social media provide for student educational and cultural adjustment processes, is limited. This study makes several contributions to the literature. First, it attempts to review previous literature by examining popular learning theories and provide an overview of the role of learning technologies in education. The concept of Social Learning Technology is introduced followed by a framework for its use and implementation in further and higher education. The methodology of this study will explain how primary and secondary data is collected and how qualitative and quantitative approaches to data analysis contributed to the outcome of the experiments. The final part of this study will focus on examination and testing of the framework together with an evaluation plan. To fill in this gap in the literature we present a case of pilot studies of learner's perspectives and experiences at an undergraduate university computing course and at an advance level ICT college course in an attempt to capture the influence and role of social networks such as Facebook on learner's educational experiences.

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 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.

DOI: 10.978.819252/12228

II. LITERATURE REVIEW

Using Facebook 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. [3]. 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. [4]. 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.

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II. THE RESEARCH STUDY

The essential processes in this study included observation, investigation and analysis of participant's educational experiences in the complexity of real classrooms. The processes in this study allowed views of the participants and complex group interactions and interpretations in the group's natural environment. The description of participants experience is qualitative and analysis of data is inductive which help to enhance the possibility of some kind of objectivity to this study. Learning environments need to be effective with complex interaction of many variables. Assessment of learning is a better one when learning is taking place by observing how the learners are participating and progressing in the learning process. In this study the interpretive research method based on a pilot study was

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used to investigate the use of social networks in the classroom. The constant comparative method [6] was used to analyse online survey responses, arriving at categories and data patterns.

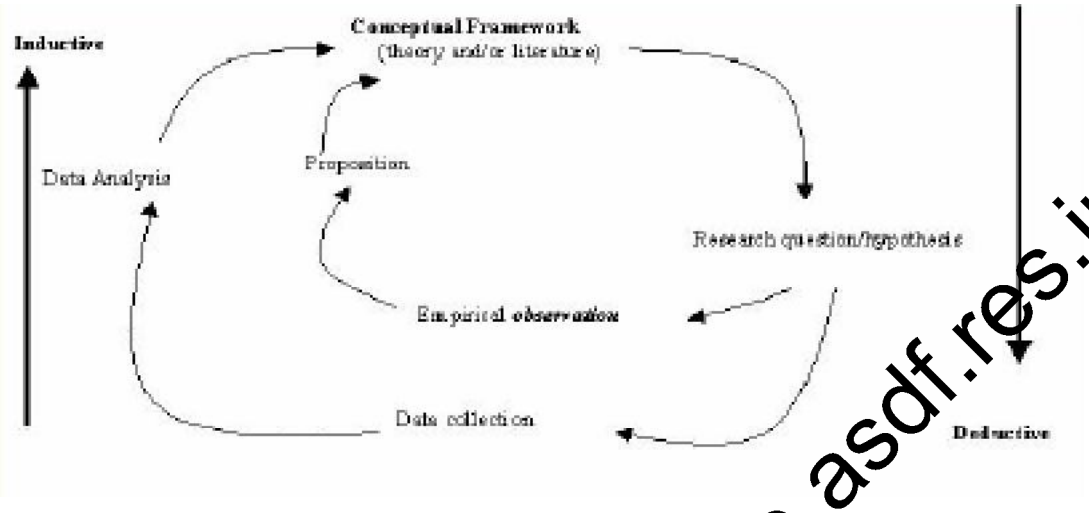

Figure 1. S*urviving Your Dissertation:* A Comprehensive Guide to Content and Process [7]

Open coding of all data was necessary 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.

The participants in this study included students at Middlesex University 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.

A second pilot study was 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.

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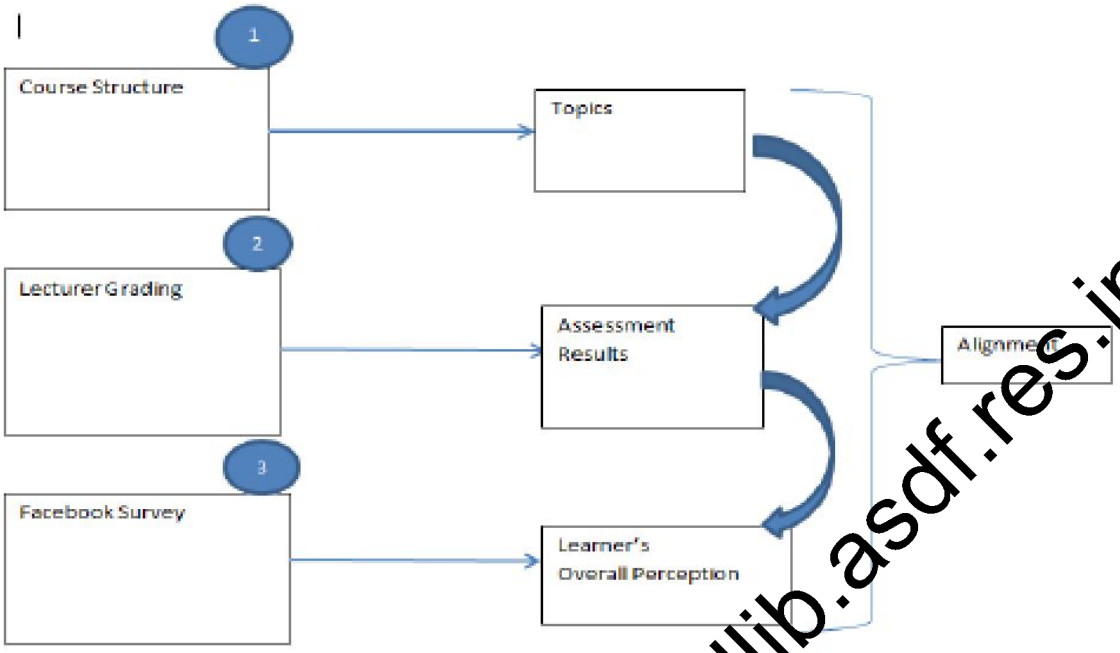

Figure 2. *Pilot study process*

III. DATA COLLECTION - SURVEY

A survey was 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 participants' 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. 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.

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.

III. DATA COLLECTION – INTERVIEWS

Interviewing participants in the three groups identified some themes. Those participants who favoured and enjoyed using Facebook 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 Facebook also regarded its use as a positive aspect that enabled them to use instant messaging, chatting, tagging photos,

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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 Facebook use; obviously indicating that the vast majority were very one sided.

IV. DATA COLLECTION – ASSESSMENT RESULTS

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 MLE 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.

V. DATA COLLECTION – USING FACEBOOK FEATURES

Students can use the present features in Facebook to upload their individual response to the questions or topics they have been asked to response to. The tutor can upload topics in more than one way. In order to upload presentations the tutor can convert its file format into a video format that can be then be uploaded for viewing by students within each group. The tutor can then post each student within the group to view the video and students can then upload their response within the group page. All students within the same group would be able to view each other's response and provide further comments on each other's answers to the questions or the topic of the video presentation.

VI. DATA COLLECTION – FACEBOOK FOCUS GROUP

The focus group held 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.

VII. FINDINGS

After analysis of the collected data, it became evident that the following themes emerged:

a) Social context of learning through social networks – All students who participated in the online pilot studies stated that they valued interactions with peers on Facebook. When asked to reflect about their course

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experiences, students predominantly focused on describing their connections and interactions with others, and the value they found in peer collaboration and support.

b) Pedagogical consideration – All learners indicated the ease of interaction and communication offered through the social networks and the opportunity of student centred pedagogy used by their lecturer has made positive contribution to his teaching style.

c) Mediated learning through SNs – All participants indicated that social networks promise true potentials in harbouring enhanced collaborative online learning environments.

The concept of social learning framework is useful as it is aimed to help us improve and change the way we learn. The problem faced by many educational institutions is the various use of e-learning across different levels of studies as the focal method of integration of technology in education. This method although still widely used in education, is reputed as deficient in bridging the gap in facilitating communication, participation and collaboration between social groups. With the rapid growth in the technology advancement and profound use of Web 2.0 tools and social networks, learners dedicate a great percentage of their time online within the communities of family and friends in order to exchange ideas and foster the feeling of belonging to social groups and networks of people from across different parts of the world.

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DOI: 10.978.819252/12228