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USING FACEBOOK© FOR COLLABORATIVE LEARNING FOR THE NET GENERATION: AN UNDERGRADUATE CASE STUDY

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Abstract:

Using engaging and entertaining learning tools and techniques inside and outside the classroom has become imperative in order to ensure, amongst others, subject-matter retention for the scholars of today. These technologies are not restricted to enriching course content alone and can also stimulate and encourage students to participate in collaborative learning processes. In this paper, the use of Facebook© is described to encourage collaborative learning. The research findings are supported with outcomes from student questionnaires. The research found that integrating Facebook© into undergraduate education will be beneficial for improving Information Systems knowledge and competence.

Keywords: Collaborative learning, Facebook©, Social Computing, Net Generation, Digital Natives, Higher Education

I. INTRODUCTION

From the time of using technology and the internet for teaching and learning, Information Systems education has been facilitated by the important element of collaborative learning. “We are entering a world in which we all will have to acquire new knowledge and skills on an almost continuous basis.” (Brown & Adler, 2008). This study focuses on Information Systems (IS) education which will investigate the use of the Facebook learning tool to facilitate IS education in the Informatics 112 1st year module of the University of Pretoria based on social collaborative learning principles.

The concept of social learning is the creation of understanding through interaction. Social learning focuses on the ‘how’ rather than the ‘what’ of education and emphasizes the need for students to be able to participate in study groups and the interchange of knowledge. There are a number of clear benefits to a social learning environment that cannot go unnoticed, one obvious benefit being that students are able to enter into a comfortable and non-threatening “peer learning environment” where they can clarify uncertainties while taking hold of the material more easily by asking questions and acquiring different views from fellow students (Brown & Adler, 2008).

The main inspiration for this paper is the research and analysis of an innovative method of learning, being the use of Facebook© for group work, which has been applied in the Department of Informatics at the University of Pretoria. The research is important to establish the feasibility of continuing with this learning method in the future. The author believes that this research paper will make a meaningful contribution to the body of knowledge regarding the use of web 2.0 technologies for education.

II. LITERATURE REVIEW

Collaborative Learning

Collaborative learning is best described as "an organizational structure in which a group of students pursue academic goals through collaborative efforts. Students work together in small groups, draw on each other's strengths and assist each other in completing the task." (Hilke, 1990:12).

Collaborative learning has five basic elements (Gabbert, Johnson & Johnson, 1986):

- Positive goal interdependence which occurs when learners undertake a group task believing that they cannot succeed unless everyone in the group succeeds.
- Face-to-face promotive interaction which occurs when a verbal interchange takes place. With technology today this need not be face-to-face or verbal, but can be using electronic communication.
- Individual accountability which means taking responsibility for learning material by giving individual tests, presentations, etc.
- Social skills which involves knowing how to communicate effectively and how to develop respect and trust within a group.
- Group processing to reflect on how well the group is working and to analyse the members' effectiveness and how it may be improved.

Collaborative learning is also referred to as group work in education or small group learning, although not all group work can be called collaborative learning.

There is a consensus among researchers, that collaboration involves the construction of meaning through interaction with others and can be characterised by a joint commitment to a shared goal (Hakkinen, Arvaja & Makitalo, 2003). Collaborative learning is often defined in a way that necessitates participants to be engaged in a co-ordinated effort to solve a problem or perform a task together (Littleton & Hakkinen, 1999). This coordinated, synchronous activity is the result of a continued attempt to construct and maintain a shared conception of a problem (Roschelle & Teasley, 1995).

Social Computing

Social computing, also referred to as social informatics, can be defined as "…the interplay between persons' social behaviours and their interactions with computing technologies (Fun & Wagner, 2008). Social computing involves both science and technology. As a domain of science, we seek to describe the relationships among social behaviours and machines so that we can reduce our uncertainty about how humans and machines will interact (Fun & Wagner, 2008). As a domain of technology, we seek to apply social and behavioural science to the design of information technology systems that enable efficient collaboration and support natural social behaviours." (Dryer, Eisbach & Ark, 1999). Social computing is "…any type of computing application that serves as an intermediary or a focus for a social relation…" (Fun & Wagner, 2008). A layman's understanding of this term would be that social behaviour, whether desired or otherwise, can be supported through information technology. When focussing on the latter, being the technology domain, then applications such as blogs, wikis and social networks could be used to support collaborative learning as these applications are a form of social software that encourages interaction and collaboration.

The author focuses on using social software in the form of Facebook in order to facilitate a participative educational process for collaborative learning for the Net Generation.

Facebook

'Facebook is a social utility that connects you with the people around you' (Facebook, 2008), and it 'is a highly interactive virtual social network' (Mazer, Murphy & Simonds, 2007).

Facebook members are able to create personalised profiles, find people, invite friends, collaborate via email and other multimedia methods, and socially interact with other members. Facebook and other social networks have an immense impact on social and academic interactions in academic institutions.

According to Mazer et al. (2007), Facebook is a unique social networking site because it creates connections between students and faculty within an online academic community.

Facebook was initially used for social interactions, but people soon started forming groups for academic purposes, where peer learning takes place. Mayer & Puller (2008) mention how social networks have an impact on student learning. Thus, sites such as Facebook are characterised by personal, academic and professional (work-related) groups where members interact for different purposes and to fulfil different needs.

The following are potential benefits of making use of Facebook in courses (Ellison, 2007):

- 'already integrated into students' daily practices;
- higher level of engagement;
- potential to make identity information more salient during class discussions;
- adds 'social' peer-to-peer component; and
- digital literacy skills'.

Another benefit includes:

- managing department Alumni through Facebook (We administer our Alumni page on Facebook and communicate events and post news of the department).

The following are potential disadvantages of making use of Facebook in courses (Ellison, 2007):

- 'reshaping of unwanted lecturer-student relationship;
- lecturer can harm his or her image;
- exposure to advertisements; and
- student resist use of Facebook'.

Other disadvantages include:

- privacy issues;
- productivity levels become lower as students prefer to interact for social purposes; and
- any form of abuse that might occur due to information sharing and interactions between peers.

The use of social networks should be an integral part of Information Systems higher education (Baker-Eveleth, Stone & Pendegraft, 2007). These technologies allow students to be more independent and self-sufficient, have increased pedagogic efficiency, and collaborate more

because of the appealing nature of the technology (Dodge, 2008). It is within this ambit that the author has chosen to implement the revised teaching and learning approach which will be detailed in the article.

The Net Generation

As has been mentioned during the introduction, the Net Generation (a.k.a 'The Millennials'or 'Digital Natives'), present a material challenge to the academic community, not only because they learn differently from traditional learning methods but also because they want to learn differently (Roodt, Joubert, De Villiers & Cloete, 2009). In terms of the defining characteristics mentioned above, there are ten features that have a potential impact on higher education (Oblinger & Oblinger, 2005):

- Digitally Literate – They can operate a variety of technological devices and are familiar with the internet, for example: laptops, cellphones and/or iPods ®.
- Connected – They are almost always connected to a technological network of some sort, for example: cellular networks and/or the internet.
- Immediate – They have fast response time and multi-task, for example: playing a game and instant messaging at the same time.
- Experiential – They have an exploratory style of learning and have a preference for 'learning by doing' which results in better memory retention of the subject matter, for example: creating an animation to teach peers about green IT instead of writing a document.
- Social - They seek to interact with others, whether in their personal lives, their online presence, or in class, for example: blogging and having social network profiles on a network such as Facebook ®.
- Teams – They prefer to learn and work in teams, for example: a peer-to-peer approach where students help each other.
- Structure – They like to know what it will take to achieve a goal, for example: rules, priorities and/or procedures for doing a task.
- Engagement and Experience – They like interactivity, for example: watching a YouTube ® video on a topic instead of reading slides.
- Visual and Kinaesthetic – They are more comfortable in image-rich environments than text, for example: looking at pictures showing the impact of global warming instead of reading text.
- Things that Matter – They readily take part in community activities and want to learn about things that matter, for example: environmental concerns.

The consequences of this is that educators have to adapt not only their teaching methods, learning tools, content and assessment criteria, but also themselves in order to effectively help educate these students.

III. COURSE OVERVIEW FOR THE FACEBOOK INTEGRATION

The course is titled "Business Driven Technology" and is a mandatory subject for all first-year undergraduate students enrolling in the Faculty of Economic and Management Sciences at the author's institution. The purpose of this course is to introduce students to computing and more specifically its application within a business context. There is a view that the digital generation is age related "…as there are plenty of mature students (and even old students) who make considerable use of Web 2.0 technologies, and many young students who do not use the technologies." (Franklin, 2007).

Part of the course included completing a group assignment which involved the following tasks:

- Creating a video on how businesses can use Web 2.0 technologies using Google Sites® (collaborative **learning tool** in the form of multimedia technology)
- Creating a Facebook® group which all of their team members need to join, containing their student details (collaborative **learning tool** in the form of a Web 2.0 technology)
- Creating a Google website for the group onto which they needed to upload their Google Sites® video to (collaborative **learning tool** in the form of a Web 2.0 technology)
- Linking 1, 2 and 3 above by placing a link to their Google® page on their Facebook® group profile.

The author required groups to have between 4 to 6 group members and they were **assessed** on the following **criteria**: Completeness, Creativity, Functional, Originality and Relevance. The assessment was conducted by the author and the author's assistant lecturers. Planning has commenced to revise the assessment process for the following year in order to include some form of peer-to-peer review.

IV. RESEARCH METHODOLOGY

Research Approach

This study was conducted in order to contribute to the body of knowledge relating to the use of the innovative learning tool, Facebook, for higher education. This was done by examining the experiences of 1781st year under-graduate students with regards to the effectiveness of the teaching and learning approach using Facebook for collaborative learning.

Upon completion of the group assignment discussed in the above section, the students were asked to complete an on-line survey which assessed the effectiveness of the teaching and learning approach with regards to the use of Facebook for the group work component. This paper focusses on assessing the learning tool Facebook.

Research Design

The author created a web-based questionnaire containing closed questions that was uploaded onto the institutions web-based course platform so that students could access the questionnaire both on-campus and off-campus. The questionnaire was setup to start at a certain time on a certain day and to end at a certain time on certain day and no maximum time limit was set for the completion thereof. Students were informed of this in class, on Facebook (through the course group) and on the course platform via a pop-up announcement. Students were incentivised to complete the questionnaire in the form of bonus marks.

Research Sample

The research sample was selected from 1st year undergraduate commerce students who are enrolled in a mandatory business driven technology course. The purpose of this course is to introduce students to computing and more specifically its application within a business context.

For the 2011 year, there were 1387 students enrolled for the course and 178 of them completed the questionnaire. The questionnaire contained a number of questions of which five related specifically to the use of the innovative learning tool, Facebook, for collaborative learning purposes which will be discussed below.

These five questions were:

1. I have learnt more in the group when using Facebook than I would on my own [Always/Definitely; Frequently/Nearly Always; Occasionally/Seldom; Never]
2. It was fun working in a group using Facebook [Always/Definitely; Frequently/Nearly Always; Occasionally/Seldom; Never]
3. The Facebook group work made the course material more interesting [Always/Definitely; Frequently/Nearly Always; Occasionally/Seldom; Never]
4. I learned to co-operate with other people using Facebook [Always/Definitely; Frequently/Nearly Always; Occasionally/Seldom; Never]
5. Do you think that learning to use Facebook as part of the INF112 was successful [Yes; No; Not answered]

V. FINDINGS

This section details the questions and the results of the questions mentioned in the above section.

Question 1: I have learnt more in the group when using Facebook than I would on my own

Answer Selection	Response	Percentage
Always / Definitely	33	20
Frequently / Nearly always	52	31
Occasionally / Seldom	45	27
Never	37	22
Missing	11	n/a
Total	**178**	**100**

Table 1: Learnt more in Group

It can be seen from the responses detailed above in Table 1 that the majority of students, 20% (Always / Definitely) and 31% (Frequently / Nearly always) respectively, felt that they learnt more in the group when using Facebook than they would have on their own.

Question 2: It was fun working in a group using Facebook

Answer Selection	Response	Percentage
Always / Definitely	74	43
Frequently / Nearly always	42	24
Occasionally / Seldom	42	24
Never	16	9
Missing	4	n/a
Total	**178**	**100**

Table 2: Fun factor

It can be seen from the responses detailed above in Table 2 that the majority of students, 43% (Always / Definitely) and 24% (Frequently / Nearly always) respectively, felt that the group work was fun when using Facebook. A relatively material number of students, 24%, did however feel that group work was only sometimes fun using Facebook.

Question 3: The Facebook group work made the course material more interesting

Answer Selection	Response	Percentage
Always / Definitely	58	34
Frequently / Nearly always	64	37
Occasionally / Seldom	30	18
Never	19	11
Missing	7	n/a
Total	**178**	**100**

Table 3: Success of Group Learning

It can be seen from the responses detailed above in Table 3 that the majority of students, 34% (Always / Definitely) and 37% (Frequently / Nearly always) respectively, experienced collaborative learning using Facebook as contributing to their understanding of the coursework.

Question 4: I learned to co-operate with other people using Facebook

Answer Selection	Response	Percentage
Always / Definitely	50	31
Frequently / Nearly always	60	37
Occasionally / Seldom	40	25
Never	12	7
Missing	16	n/a
Total	**178**	**100**

Table 4: Group learning approach and Education

It can be seen from the responses detailed above in Table 4 that the majority of students, 31% (Always / Definitely) and 37% (Frequently / Nearly always) respectively, felt that the collaborative learning approach using Facebook has helped them to learn how to co-operate with others. A relatively material number of students, 25%, did however feel that that was only sometimes the case.

Question 5: Do you think that learning to use Facebook as part of the INF112 course was successful

Answer Selection	Response	Percentage
Yes	147	88
No	31	12
Total	**178**	**100**

Table 5: Success of using Facebook

It can be seen from the responses detailed above that the vast majority of students, 88% (Yes) felt that learning to use Facebook as part of the INF 112 group work component was successful.

VI. CONCLUSION

The implementation of Facebook has had a remarkable positive impact on the students since an overwhelming majority of students perceived the use of Facebook as an innovative learning technology as a major enhancement in improving their general computer knowledge. It can be assumed that the students accept the technology as part of the educational process and experience the use of Facebook as significant achievement of IS competence.

Further research is being conducted by the author to assess the effectiveness of each of the teaching methods and learning tools both individually, collectively and then holistically. This will provide insight into the effectiveness of utilising social computing in the form of social software within the higher education context. It will also provide insight into the learning preferences of the Net Generation which will have an important influence on the strategic direction of the institutions teaching and learning approaches.

REFERENCES

Baker-Eveleth, L. & Stone, R. & Pendegraft, N. 2007. Using Collaborative Software to enhance the Classroom Learning Environment. Proceedings of the AIS SIG-ED IAIM 2007 Conference. [Online] Available: http://www.sig-ed.org/ICIER2007/proceedings/using_collaborative.pdf

Brown, J.S. & Adler, P. 2008. Minds on Fire: Open Education, the Long Tail, and Learning 2.0. EDUCASE Review, 43(1):1-19. [Online] Available from: http://creativecommons.org/licenses/by/3.0/ [Accessed: 2013-16-03].

Dodge, J. 2008. Find me on Facebook. Design News, Reed Business Information. p. 9.

Dryer, D.C., Eisbach, C., Ark, W.S. (1999) “At what cost pervasive? A social computing view of mobile computing systems”, IBM Systems Journal, Vol. 38, No. 4.

Ellison, N.B. Facebook Use on Campus: A Social Capital Perspective on Social Network sites. Presentation at the ECAR Symposium, Boca Raton, FL, December 5-7, 2007. [Online] Available: http://www.educause.edu/ecar

Facebook. 2008. [Online] Available: http://www.facebook.com [Cited: 30 November 2012]

Franklin, T. (2007) “Web 2.0 for Content for Learning and Teaching in Higher Education.” [Online] Available from: http://news.bbc.co.uk/1/hi/technology/6639417.stm (Access Date: 05 Jan, 2013)

Fun, R.K., Wagner, C. (2008), “Weblogging: A study of social computing and its impact on organizations.” Decision Support Systems Vol 45 2008, pp 242–250.

Gabbert, B., Johnson, D. W., & Johnson, R. T. (1986). Cooperative learning, group-to individual transfer, process gain, and the acquisition of cognitive reasoning strategies. The Journal of Psychology, 120(3), 265-278.

Häkkinen, P., Arvaja, M. & Mäkitalo, K. (2003). Prerequisites for CSCL: Research Approaches, Methodological Challenges and Pedagogical Development. In K. Littleton, D. Faulkner & D. Miell, (Eds.) Learning to Collaborate and Collaborating to Learn, Nova Science.

Hilke, E.V. 1990. Cooperative learning. Bloomington: Phi Delta Kappa. Johnson, D.W. & Johnson, R.T. 1986. Computer-assisted cooperative learning. Educational Technology, 26(1), 12-18.

Littleton, K. & Häkkinen, P. (1999). Learning Together: Understanding the processes of Computer-based Collaborative Learning. In P. Dillenbourg (Ed.) Collaborative learning: cognitive and computational approaches (pp. 1-20). Pergamon: Oxford

Mayer, A. & Puller, S.L. 2008. The old boy (and girl) network: Social network formation on university campuses. Journal of Public Economics, nr. 92, p. 329-347.

Mazer, J.P., Murphy, R.E., Simonds, C.J. 2007. I'll See You On 'Facebook': The Effects of Computer-Mediated Teacher Self-Disclosure on Student Motivation, Affective Learning, and Classroom Climate. Communication Education, vol. 56, nr. 1, p. 1-17.

Oblinger, D. G., & Oblinger, J. L. (2005). "Educating the net generation." EDUCAUSE. Retrieved February 20, 2013, [Online] Available from http://www.educause.edu/educatingthenetgen/

Roodt, S, Joubert, P, De Villiers C, Oelofse, N. (2009): "Collaborative learning in the Web 2.0 environment: An Undergraduate Case Study." Proceedings of EDULEARN 2009, July 6 – 8, Barcelona, Spain, ISBN: 978-84-612-9802-0.

Roschelle, J. & Teasley, S. (1995). The construction of shared knowledge in collaborative problem solving. In C. E. O'Malley (Ed.) Computer supported collaborative learning. Heidelberg: Springer- Verlag.