This is the published version


Available from Deakin Research Online

http://hdl.handle.net/10536/DRO/DU:30045910

Reproduced with the kind permission of the copyright owner

Copyright: 2010, Formatex
The Use of Social Networking Technologies within a tertiary education environment

S. Leitch

1 School of Information Systems, Deakin University, Melbourne, Australia.

Social networking is continuing to increase its popularity and is impacting all aspects of modern society. One issue is how can these social networking technologies relate to tertiary education and whether they be used effectively in this educational context. This paper is based on prior research which was conducted at an Australian University into the design of online teaching and learning systems from a student’s perspective and uses these outcomes to focus and trial the use of two social networking technologies in a tertiary education institution.

Keywords: social networking; Facebook; Twitter.

1. Introduction

The initial focus of the Internet was the distribution of information in a static manner but over time the Internet developed into Web 2.0. The Web is no longer a collection of static pages of HTML that describe something in the world. Increasingly, the Web is the world where everything and everyone in the world casts an “information shadow,” an aura of data which, when captured and processed intelligently, offers extraordinary opportunity and mind-bending implications (O’Reilly and Battelle, 2009).

Social networking systems such as Facebook are an ever evolving and developing means of social interaction, which is not only being used to disseminate information to family, friends and colleagues but as a way of meeting and interacting with “strangers” through the advent of a large number of social applications.

2. Background to Social Networking Technologies

The emergence of Web 2.0 and related systems such as Facebook has had a major impact upon the Internet in recent years. One of the interesting aspects of Facebook is the use of third party applications and the interactions that this allows. This means that individual Facebook pages now act as a web page, blog, instant message, email systems and the use of third parties applications allows for real time functionality (DiMicco and Millen, 2007; Shuen, 2008).

Social networking software has become the new face of Internet socialisation, not just with the committed “net” user or even the occasional user but with education sectors across the world.

Social networking sites (SNS’s) are virtual spaces where people congregate to discuss ideas, share information and communicate (Raacke and Bonds-Raacke, 2008). SNS’s have become increasingly popular and are being used on a daily basis by millions of users across the globe.

The reasons for the popularity of SNS’s are varied but include (Ellison et al, 2007):

- To communicate and keep in touch with friends (as a way of supporting pre-existing friendships);
- To make new friends and social relationships;
- To promote oneself.

In the early part of the millennium a new wave of SNS’s were released which included Ryze, Friendster and LinkedIn. Only LinkedIn achieved a good deal of current success. The others (which include many more) failed to achieve mass popularity, this has been in part blamed on the fact that these SNS’s felt they could support each other and did not need to compete against each other (Festa, 2003). This mistake meant that the sites failed to evolve to meet the needs and ever changing expectations of users.

From 2003 onwards many of the SNS’s which are still used currently were developed. MySpace in particular, increased its user base after the failure of Friendster; they did this by encouraging music bands, music promoters and music lovers to join MySpace. This niche market allowed MySpace to expand quickly, however it may also be a part of the explanation of the popularity of Facebook which does not have a music focus. One other notable policy of MySpace was to allow minors to have profiles; however this decision also led to a number of legal actions regarding sexual contact between adults and minors (Consumer Affairs, 2006). This was the beginning of a number of security concerns that affected MySpace.

Facebook was also initially developed for a niche group of users by only allowing users with a .edu email address to register. Its purpose was to allow communication, collaboration and networking amongst US college students. In 2005 other groups of individuals such as high school students were allowed to join, ending in Facebook being open to anyone with a valid email address in 2006. Facebook has travelled a different route to MySpace as it has no focus on any particular niche of users (beyond the initial niche group on its inception). This, along with its heavy focus on the use of
Micro-blog services such as Twitter, Yammer, Plurk and Emote enable micro-blog users to post 140 character-long messages which could then be accessed by their followers. Some users restrict access to their micro-blog streams whereas others make theirs accessible to the public. The format of micro-blog postings has evolved, with several micro-blog services also supporting multimedia attachments and URL (Uniform Resource Identifier) links. Online social networks such as Facebook support micro-blogging through the user status update function (Lee and Warren, 2010). Twitter was developed in 2006 as a side project, for a podcasting service called Odeo (this service ceased from the start of 2010). The aim of Twitter was to allow users to follow others without being followed back, and all posts were public by default and limited to 140 characters so they could fit inside cellphone text messages (New York Times, 2010).

Twitter is the most widely used of the Micro blogging organisations and of September, 2010, the following data showed the impact it has (Twitter, 2010):
- Twitter has 75 million registered users;
- 95 million tweets are written per day.

The future projected growth of Twitter is 15 million users per month, or about half a million users per day (Murphy, 2010).

The most popular SNS's in terms of registered users are MySpace, Twitter and Facebook. As Facebook and Twitter have the fastest growing user base with the most diverse demographic (age, gender, use (business and social) and race), the authors have focused on these in relation to their use in the education environment.

3. Teaching and Learning Technologies at Deakin University, Australia

The Deakin University network has 7,525 registered Facebook users (as of 10/6/2011) made up of current and past students and staff. This is by far the largest concentration of Deakin students using an online resource outside of the Deakin mandated learning environment Deakin Studies Online (DSO). Research conducted in 2008 with Deakin undergraduate students found that they were interested in using social software within their learning environment but that little was currently used within the DSO environment (Leitch, 2008). The software that is officially compatible and available to be used such as MediaWiki, Gallery2 and Drupal-SMF (Deakin University, 2009) is not software that is commonly used by the cross-section of students which are being taught but rather social software that has been created for the online educational environment. The main issue with this is the attitude and uptake of new software and therefore as educators it may be a better alternative to use popular, well used and liked commercial software that is already being commonly used by students, such as Facebook rather than imposing other software onto them.

As mentioned previously Facebook was developed initially for college based users. As the largest part of a university unit cohort can now be labelled as "digital natives" (Prensky, 2001); it seems appropriate then to take this software back to the university classroom and use it to educate students in a familiar online environment as well as fostering interpersonal relationships amongst student classes. Other studies have found some success in the use of Facebook within particular student cohorts (McCarthy, 2010). Some research into the use of Facebook by educators found that students believed utilising Facebook would produce higher levels of motivation and affective learning and a more positive classroom environment (Mazer et al, 2007).

Most students in a tertiary environment are involved in a number of online discussion forums because of the common use of software such as DSO (Blackboard/WebCT), however when these discussions are not part of the assessment process the interest and participation of students tends to wain with the first month of a unit (English and Duncan-Howell, 2008). It is therefore proposed that rather than accepting this lack of participation that educators use software which is more appealing and more commonly used by students and one which provides a more "social environment". It is this social environment that the researchers wish to explore in relation to its use in a tertiary teaching and learning environment.

3.1 Educational Tools

The use of social networking tools is becoming more widespread within the educational environment at all levels. Tools such as blogs and wikis are proving popular as a way of educators disseminating information to students. However they tend towards one way communication and do not promote an interactive environment allowing for the exchange of ideas which is paramount to the educational process. The other major issue within the use of social networking in tertiary environments appears to be trend towards each individual university creating its own version of each of these tools rather than using the ones that are most commonly used and are commercially available. This is perhaps due to the fact that these tools can be honed and modified to suit the particular institution or the subject area but in doing this they
remove the convenience and confidence that students have in current tools and possibly discourage use as the students no longer see the “fun” element of using social networking and purely move it to another educational tool. Many universities have embraced the online teaching culture but with this we must also be aware that this form of teaching and learning can also isolate students and lose the sense of belonging that universities used to provide.

Research conducted in 2008 (Leitch, 2008) on a group of tertiary education students at Deakin University Australia produced a number of findings that are relevant to the use of online educational tools and specifically promoting social interaction whilst learning and this is shown in Table 1.

<table>
<thead>
<tr>
<th>Table 1 Student attitudes to Online Teaching and Learning (Leitch, 2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Online learning enhances my learning experience</td>
</tr>
<tr>
<td>I wish more of the units used online learning</td>
</tr>
<tr>
<td>Working online in groups works well</td>
</tr>
<tr>
<td>Most information is available on DSO</td>
</tr>
<tr>
<td>Online learning makes me feel more involved in university life</td>
</tr>
<tr>
<td>I have made new contacts through online learning</td>
</tr>
<tr>
<td>I would recommend online learning to others</td>
</tr>
</tbody>
</table>

The increase in the use of online learning technologies may possibly cause isolation among students, due to the lack of personal contact or social interaction in online systems. Students expressed the view in the survey that the use of online teaching and learning did not make them feel involved in university life. This was a strong theme and therefore was included as one of the major focal problem themes that was used in follow up studies (Leitch and Warren, 2008).

3.2 Using Facebook and Twitter for teaching activities – a practical study

Research was conducted on a cohort of students enrolled in a number of Faculty of Business and Law Units during trimester 3, 2009 and trimester 1, 2010. One unit was an Information System Masters level unit and the other was a core Level 1, Bachelor of Commerce unit. These students were enrolled in a number of courses, including, Master of Information Systems, Master of Business Administration and the Bachelor of Commerce. Facebook and Twitter was used for a variety of teaching related activities as well as student engagement activities during the semester and informal feedback was gathered.

3.3 Twitter Case Study

A decision was made to select Twitter as a means to attempt to support postgraduate students at Deakin University, Australia. Twitter was implemented in MSC767 (Business Security Management) which is a postgraduate unit offered to Faculty of Business and Law students enrolled in the Masters of Information Systems, Masters of Commerce and Masters of Business Administration. The Twitter support augmented existing online technologies for students, in the form of an online teaching environment (DSO), audio recordings of the lectures and traditional e-mail support, e.g. weekly emails reflecting on the topic of the week.

The aim of the Twitter support was to give students additional information about current trends in information security, the intention was to encourage students to reflect upon current events. Twitter was also used to remind students about key events, e.g. pending assignment dates.

As mentioned before Twitter was used to MSC767 in trimester 1, 2010. There were 54 students enrolled in the unit, 47 students were enrolled in on campus mode and 7 students were enrolled in off campus mode. Of the student cohort of 54 students, 14 students became followers of the MSC767 twitter stream that represented 26% of the total class. The followers included the majority of the off campus students and some of the on campus students.

During trimester 1, 19 tweets were made to the MSC767 tweeting channel. The tweets took the form of
of students, due to the lack of an official email address. Students who enrolled late into the unit had not been sent the initial invitation. This meant that a follow up procedure had to be implemented to identify late student enrolments and then send them an invite.

- Some students did not know anything about Twitter and wanted advice on what it was and how it could be used.
- One of the off-campus students worked at a bank, and their organisation had a policy limiting access to social networking technology, this meant that the student could not become part of the MSC767 twitter channel and the student did not have internet access at home. The student was upset because they had felt disadvantaged.

Deakin University has a formal system where students give feedback regarding the units they have taken during that trimester. This feedback takes the form of qualitative and quantitative data. The quantitative data is a score out of 5 (with 5 being the highest). The unit received the following qualitative evaluations:

- On campus - 4.23
- Off Campus - 4.67 (the highest score within the School of Information Systems for Trimester 1, 2010)

The results showed an increase of <0.2 compared to the same trimester in 2009. And some of the qualitative comments were:

- A good unit;
- Great support and feedback;
- Audio lectures were good and concise. Use of Twitter was good;
- Great lecturer and wish I had done it on campus so we could have engaged face to face more! Thanks very much.

3.5 Facebook Case Study

Facebook was the second SNS technology to be used in a teaching and learning situation as a part of this study. As in the first Twitter example it was used to support a unit of study at Deakin University, Australia; the selected unit was an undergraduate unit, MSC120 (Business Information Systems). This unit was a core first year undergraduate unit offered to Faculty of Business and Law students enrolled in the Bachelor of Business Information Systems, Bachelor of Commerce, Bachelor of Management and the unit can be taken as an elective from a number of other undergraduate courses. This support again augmented existing online technologies for students, in the form of an online teaching environment (DSO) and audio recordings of the lectures. The Facebook support provided students with an opportunity to be provided with additional information about current trends in information systems and to have students reflect upon...
current events. Facebook was intended to be used in a social context to give added value to the teaching and learning experience.

As mentioned previously, Facebook was used in MSC120 in trimester 3, 2009/2010. There were a total of 96 students enrolled in the unit, 64 students were enrolled in on campus mode and 32 students were enrolled in off campus mode. Of the student cohort, 29 students became members of the MSC120 Facebook that represented 30% of the total class. Additional members of the Facebook group included the group convenor and two academic staff members.

During trimester 3, a number of wall posts were made to the MSC120 Facebook Wall as well as some specific discussion topics. The post took the form of:

- Reflective questions e.g. what is Information Systems?
- Current news topics, e.g. launch of the Apple iPad;
- Social postings.

The Facebook group profile page is shown in Figure 2; this profile page was used to reinforce topics that were discussed in the lectures.

![Figure 2 The MSC120 Facebook Group](image)

### 3.6 Student Feedback to the Use of Facebook

The use of Facebook within the context of the unit was explained in the first lecture. Information was also posted on the DSO (Deakin Studies Online) MSC120 site for off campus students as well as on campus students. Students were informed that participation was voluntary.

The initial posting related to the question, “what is Information Systems?”

These Facebook postings and responses throughout the trimester highlighted some issues:

- There were no responses to the subject related postings or the discussion topics. The social postings however gathered a number of responses, e.g. “what are you guys doing for Christmas?” resulted in a total 9 postings;
- There were no direct student contributions to the group, only responses to convenor initiated posts.

The unit received the following quantitative evaluations:

- On campus - 3.57
- Off Campus - 3.71

The results showed a decrease of <0.4 compared to the same trimester in 2008.

There were no qualitative comments that related to this study.

### 4. Outcomes of the study

The study posed a number of interesting questions regarding the use of social networking technologies in a teaching and learning environment; most prominently whether it is a useful aid in the learning experience and whether it enhances student engagement. Whilst it is impossible to draw direct conclusions from this study a number of further questions have been raised regarding the study that was conducted. One study (Twitter) related to a post graduate unit, whilst the other (Facebook) was used in an undergraduate unit, this may have been a factor in the level of interest and participation of student groups. We must also consider the basic premise of these two social networking technologies is very different; one encourages and makes the ease of participation simple whilst the other requires much less participation from the users. In this case, however, there was a lack of interaction in the Facebook study which was surprising due to the popularity of Facebook within 18-30 year olds who are “digital natives” (Prensky, 2001). This passiveness could have been related to a number of factors:

- The fact that the cohort was a first year student cohort;
- The fact that students were required to use two different systems for information and discussion (DSO and Facebook) with no integration;
teaching and learning.

There were a total of 96 enrolled in off-campus students and 30% of the total staff members, as well as some specific topics that were

force discussion (DSO and

ion was also posted on students. Students were

social postings however in a total 9 postings; rated posts.

ologies in a teaching and whether it enhances of further questions graduate unit, whilst the interest and participation in teaching and learning technologies is very much less participation which was surprising due to This passiveness could

- That the majority of Facebook’s use in the wider context is for social interaction rather than work/business/teaching and therefore students didn’t feel connected to using it in a work related sense.

A lack of posting behaviour from students in the Facebook study may identify an unwillingness to contribute, however we cannot assume that this behaviour means that students are not learning from the experience (Dennen, 2008).

Whilst Facebook may not have proved effective in this study for teaching and learning related purposes we cannot negate the fact that it may prove useful as a tool for student engagement which is an important element of the student experience. Twitter appeared to engage students more effectively in subject related matter and therefore may be a useful tool for educators to consider.

It is necessary to further this research by undertaking further data collection into the student decision making processes and their attitudes towards social networking being used in teaching and learning situations. It is also important to consider that whilst there are many different social networking technologies available, not all may be useful for the same purposes, some may support teaching and learning activities well, some may assist in career planning and networking and some may inspire and motivate students and make them become more engaged with staff and the wider University.

Beyond these specific elements there are a number of other considerations that would become relevant should social networking become commonplace in the tertiary education environment:

- The associated additional workload associated with setting up and using social networking in a teaching context, may discourage some staff;
- Whether students would have an expectation that social networking be used in every unit of their course;
- Whether there are cultural or socio-economic issues that may impact the use or access to social networking systems.

The use of social networking technologies is becoming even more widespread and popular partly due to the introduction of new mobile consumer devices such as iPhones and iPads. Students (and society) will have a greater expectation that information will be delivered to them in a flexible manner that best suits them, the concern and the need for further research is paramount as Universities will have to consider how they will adapt to this new paradigm or be seen as being out-dated or obsolete in terms of the way they interact with their students.

References


ach because of various
ach or less effective and
learning.
y employed to develop
ory was identified with
29 classes of students
held a positive attitude
ents were also able to
rhese favorable findings
ogies in the near future.

fer and effectiveness as well
es the courseware was
ience through the VR
“back-to-front inversion”
us researchers. Specific
he group interview. The
plementation of similar
ents are very useful for
courseware in classroom
in this study had above-
low academic abilities.
and, there was no control
is less reliable as it may
ay hopefully help school
or a general design of any


