Staying connected and engaged with the use of Facebook: Experiences of studying Pathology
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Abstract
This study aims to understand the impact of using the social networking site Facebook in learning and teaching some aspects of a Pathology course delivered at a South Australian university. Another aim is to recommend good practice guidelines in the use of Facebook and provide key principles to ensure maximum learning and quality course delivery.

In 2013, Facebook was used by first- and second-year Medical Radiation students in learning an aspect (case scenario) of a Pathology course. All students who participated in the Facebook activity were invited to complete a questionnaire before and after the conclusion of the course.

A pre- and post-intervention mixed method study design was used. A 14-item pre-intervention and a 25-item post-intervention questionnaire were used to obtain information concerning students’ initial perceptions about Facebook and their experiences in using Facebook as they try to learn a Pathology course, respectively. Before students became part of the Facebook group, they were requested to complete the pre-intervention questionnaire mainly to understand their perceptions on the use of Facebook as a learning tool. The course coordinator created a closed Facebook group and then emailed students and staff inviting them to participate. Once the lecturer accepted their request to be part of the group, they were then able to view the content and the exchanges began. The students, working in groups, discussed the case scenarios via this platform. Evaluation of the learning that transpired using Facebook was conducted at the conclusion of the course using a post-intervention questionnaire.

Of the 152 students enrolled in the Pathology course in 2013, there were 148 students who participated in the Facebook group. Of the 148, 95 students completed the pre-intervention questionnaire and 61 students completed the post-intervention questionnaire.

From the outset, the majority of students reported that Facebook could be a tool for learning and that it could enhance the interaction between students and staff. Post-intervention results reveal also positive perceptions about the application of Facebook in the Pathology course. Students report that Facebook gave them flexibility, provided opportunities to learn and work with peers, direct their own learning, helped students engage with the course content, synthesise knowledge, interact with peers and lecturer, and was an effective and innovative way to learn, and increased their understanding of disease processes. In fact, the majority of the respondents recommended the initiative to other students.

This study indicated that using Facebook offered many benefits and advantages for students. Good practice guidelines for use include: meticulous organisation, adequate introduction, acceptable duration of involvement, provision of a pleasant experience, and meaningful and enriching activities and interactions. The outcome of a well-maintained and structured Facebook group is the formation of a learning community,
where participants are linked and fully engaged, and where knowledge is conveniently and easily accessed.

**Keywords**
Social media, Facebook, student engagement, education, Medical Radiation

**Introduction**
Facebook is an online social network site where personal information and photographs are shared and where groups may be formed to connect people. Originally created in 2004 and opened to the public in 2006, Facebook had more than 12 million users initially which grew to 350 million active users in 2009 (Hew, 2011; Facebook, 2009). It would seem that Facebook has infiltrated everyday life. More recent estimate of active users is over a billion including university students. It has been reported that in the United States, over 90% of undergraduate students participate in Facebook (Ellison et al., 2007; Stutzman, 2006). Medical, pharmacy, veterinary students and library users have reported using Facebook (Black et al., 2010; Hendrix et al., 2009; Cain, 2008; Thompson et al., 2008). Undergraduate students are deeply immersed in this social network.

Consequently, teaching methods have been adapted to accommodate this very popular networking website. In order to maximise the potential of Facebook for collaboration and interactivity, various universities have attempted to incorporate it in their learning and teaching approaches. For example, Gray, Annabel and Kennedy (2010) report medical students using Facebook to support their learning and skills development via the formation of Facebook study groups. The same authors contend that university students were interested and active in supporting their learning by using Facebook. Wang (2012), on the other hand, demonstrated that Facebook was a useful tool for cross-cultural collaboration between groups of international students.

The real and potential benefits of Facebook are documented. Whittaker, Howarth and Lymn (2013) posit that technologies used in learning promote a social constructivist educational approach which is student focused, highlighting open dialogue and collaborative construction of knowledge. There is collegial support and enhanced networking opportunities (Bosch 2009; Wodzichi, Schwammllein & Moskaliuk, 2012). Matthews (2006) in applying Facebook to library users concluded that there is a need to embrace this social network to increase visibility and chronicle what the library is all about. Facebook presents a relaxed, accessible, friendly and comfortable environment, promoting collaboration and social exchange, engaging students to learn outside the classroom.

The enthusiasm for Facebook is balanced with criticisms and/or disdain. Hew (2011) in reviewing current published research studies on the use of Facebook by students and teachers concluded that there is very little educational value and that its application is limited to staying connected with others. Wise, Skues and Williams (2011) corroborate this view, stating that Facebook promotes social but not academic engagement. Further, this new digital paradigm is changing how we relate to society (Madden, 2013). In the midst of proliferating social connected devices and websites, there are feelings of isolation and loneliness. It looks like an “illusion of companionship without the demands of relationship” (Madden, 2013, p. 13).
While there may be many applications, there is generally a dearth of published literature on specific uses of Facebook in tertiary education. Several writers argue the need to focus on the effects on education of Facebook use, and how effectively students use it. Other topics that need attention include: what are the rules of engagement pertaining to privacy, threatening postings, information to disclose, professional/unprofessional content (Ponce et al., 2013; Black et al., 2010; Thompson et al., 2008), what are the challenges for educators (Gray, Annabelle, & Kennedy, 2010), and what are the risks of online social networking (Cain, 2008).

Our University in particular has organised campus- and program-specific systems and processes to help students succeed in their studies (Penman & Thalluri, 2013; Penman & Ellis, 2012). One of these is the optimal use of information and communications technology (ICT) and the use of Facebook in particular has been suggested in order to offer practically oriented science learning to diverse groups of health science students. This paper reports on an investigation into the success of Facebook as an educational tool for a Pathology course for Medical Radiation students. The description of its use, analysis of the impact of Facebook on students and recommendations for good practice principles relating to learning and teaching utilising Facebook are the focus of this paper.

**The Facebook Educational Activity**

The Facebook group set up by the course coordinator and all teaching staff as administrators who were directly involved in delivering the course on campus. No marks were allocated for participation in the Facebook activity. Students were encouraged but were not required to engage in the group. The course coordinator (Main Administrator) formed a closed group, meaning that only the members saw the group, who was in it, and what members posted. After registering, the coordinator emailed the students inviting them to be part of the Facebook group. Once administrator/s had accepted them, students were able to view the Facebook content, beginning the exchanges of messages and information with other students and staff.

The service offered by Facebook Inc. was used as a platform for a Pathology class (identified as a common-interest user group), divided into groups in order to decipher case scenarios. Six pre-determined real-life case scenarios with problems and corollary questions were distributed to students who grouped themselves and divided the work to address the requirements of the scenarios. A case typically reported on a client presenting to the hospital with various medical complaints. The present illness, past medical history, family history, investigations, and treatments completed the case. Students used the approach to solve the general problems of: explaining disease processes of medical conditions, conducting and interpreting diagnostic procedures and rationalising the medical interventions undertaken. The lecturer posted six different cases on Facebook for six groups to access and discuss. The culmination of the group process was a student-created product in the form of PowerPoint presentations which were to be presented to the lecturers, tutors and entire class, and made available online.

Facebook served as a means of studying particular topics, constructing knowledge, signposting relevant resources, solving problems and/or reflecting on understanding and practice. The lecturers/administrators organised the groups to enhance interaction
and facilitate support for students, allowing for both synchronous and asynchronous electronic communications.

Method
A pre- and post-intervention mixed method study design was used. A 14-item pre-intervention and a 25-item post-intervention questionnaire were used to obtain information concerning students’ initial perceptions about Facebook and their experiences in using Facebook as they tried to learn a Pathology course, respectively. This approach to research will help provide answers to the questions of "what is going on here?" as well as who, when, where and how questions associated with a particular issue which can yield rich data that can possibly lead to recommendations.

The evaluation instruments used were administered via the University’s web-based TellUs2 application at the beginning and conclusion of the course. A 14-item pre-intervention questionnaire administered online queried the students of the course, enquiring about demographics and initial perceptions of Facebook. This pre-intervention questionnaire, consisting of Likert-type questions and open-type questions, gathered data reflected in Table 1 and 2.

A 25-item Likert and open-type questionnaire was administered at the conclusion of the course. This post-intervention questionnaire covered various aspects of students’ Facebook experiences. Students were asked to indicate the extent of their agreement with statements describing their experiences. (See Table 3 for these statements.) Other items explored the best things about the use of Facebook, suggestions for improvement, most important outcome gained, and additional comments.

The participants invited for this study were all Medical Radiation students who were involved in the Facebook activity in 2013. An email was sent to the students inviting them to complete an online questionnaire before and after the Pathology course. The information given to students included a statement regarding the voluntary nature of participation and assurance of confidentiality. Completion of the survey was taken as consent. Filling out the questionnaire took about 10-20 minutes of students’ time. Ethics approval had been sought from the University Ethics Committee before commencing the educational activity.

Following data collection, descriptive and frequency analyses were performed. Data analysis consisted of sorting the data into files and tables and counting the frequency of responses.

Results
Of the 152 students enrolled in the Pathology course in 2013, there were 148 students who participated in the Facebook initiative. Of the 148 students, 95 completed the pre-intervention questionnaire, representing a 64% response rate. Most of the students currently had an account which they accessed on a regular basis via iPad and the home computer. See Table 1 for participant descriptions.
The majority of the students anticipated that the use of Facebook in their Pathology course would be a very good idea. Facebook could be used as an educational tool (96%) and could enhance interaction between students (82%) and between students and teachers (93%). The majority felt positive about the use of Facebook for various reasons, though a few expressed some concern. See Table 2 for the initial perceptions about Facebook.

Table 2. Pre-intervention results (N = 95)

<table>
<thead>
<tr>
<th>Perceptions of Facebook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning tool</td>
</tr>
<tr>
<td>96% think Facebook could be used as a learning tool</td>
</tr>
<tr>
<td>Interaction between students</td>
</tr>
<tr>
<td>82% believe interaction between students will be enhanced</td>
</tr>
<tr>
<td>Interaction between student and staff</td>
</tr>
<tr>
<td>93% believe that interaction between student and staff will be enhanced</td>
</tr>
<tr>
<td>Other perceptions on</td>
</tr>
<tr>
<td>84% report the opportunity</td>
</tr>
<tr>
<td>69% report to share</td>
</tr>
</tbody>
</table>
learning and teaching

to connect with other students in the class on Facebook
resources/course content
58% report to connect with lecturer on Facebook

Thoughts on Facebook as an educational tool

46% did not answer this section, but the majority of remaining students (51%) felt positive about the use of Facebook for various reasons.

Of the 152 students enrolled in the Pathology course in 2013, there were 148 students who participated in the Facebook activity. Of the 148 students, 62 students opened the survey but only 61 completed the post-intervention questionnaire, representing a 42% response rate. The majority of the students rated the use of Facebook positively in the pre-defined categories. (See Table 3."

Table 3. Post-intervention results (Perceptions about Facebook after Pathology course) N = 62

<table>
<thead>
<tr>
<th>Statements for rating agreement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>% Combining Strongly agree and agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Facebook gave students flexibility in their learning.</td>
<td>14</td>
<td>43</td>
<td>92</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>2. Facebook provided me opportunities to learn with peers.</td>
<td>20</td>
<td>37</td>
<td>92</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3. Facebook provided me with the opportunity to work with others.</td>
<td>17</td>
<td>37</td>
<td>87</td>
<td>6</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4. Facebook provided me with the opportunity to direct my own learning.</td>
<td>15</td>
<td>35</td>
<td>81</td>
<td>11</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5. The Facebook initiative</td>
<td>12</td>
<td>24</td>
<td>58</td>
<td>17</td>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>
facilitated the development of lifelong learning skills.

6. As a result of my Facebook experience, I engaged well with the course content.

   | 17 | 25 | 68 | 6 | 10 | 3 |

7. There were many opportunities for me in learning this medium of learning and teaching.

   | 18 | 27 | 66 | 18 | 0 | 0 |

8. The initiative increased my interest in the subject.

   | 16 | 25 | 66 | 17 | 0 | 3 |

9. The Facebook initiative allowed me to synthesise my past and present knowledge.

   | 14 | 33 | 76 | 12 | 0 | 2 |

10. The initiative further honed my research skills.

   | 9 | 21 | 48 | 25 | 0 | 6 |

11. The Facebook initiative was adequately introduced.

   | 25 | 34 | 95 | 1 | 0 | 0 |

12. The duration of involvement and attention required for the Facebook initiative was acceptable.

   | 18 | 39 | 92 | 2 | 1 | 1 |

13. The Facebook initiative assisted my learning about

   | 17 | 37 | 87 | 3 | 0 | 4 |
the topics.

14. The Facebook initiative provided me opportunities to interact with the lecturer.
   | 32 | 28 | 97 | 0 | 0 | 1 |

15. It provided me opportunities to learn from my peers.
   | 21 | 38 | 95 | 0 | 0 | 1 |

16. The Facebook initiative was a pleasant learning experience.
   | 20 | 36 | 90 | 2 | 0 | 3 |

17. The initiative was a good substitute for classroom.
   | 14 | 19 | 53 | 24 | 1 | 3 |

18. I found the use of Facebook an effective way to learn.
   | 14 | 35 | 79 | 6 | 1 | 5 |

19. I found the use of Facebook an innovative way to learn.
   | 18 | 36 | 87 | 4 | 2 | 1 |

20. Overall, the use of Facebook enhanced my understanding of disease processes.
   | 13 | 32 | 73 | 16 | 0 | 0 |

21. I recommend this initiative to other students.
   | 21 | 34 | 89 | 3 | 0 | 3 |

Table 4 summarises the results from the open questions. Students' diverse responses were grouped into categories, counted and reflected below.

**Table 4. Post-intervention responses from open questions (Perceptions about Facebook after Pathology course) N = 62**

<table>
<thead>
<tr>
<th>Open questions</th>
<th>Response</th>
<th>N*</th>
</tr>
</thead>
</table>
22. The best things about the use of Facebook are:
- Ease of access, quick and easy to use, convenient
- Extra resources
- Interaction with lecturers and students
- Familiarity
- Response to questions
- No answer

23. Some things that I think would improve future offerings are:
- Post more questions
- Provide explanation to answers
- Posting more additional readings and resources
- No answer

24. What was the most important outcome gained from this initiative?
- Knowledge and understanding
- Friendly learning environment
- Collaborative learning with peers
- Engagement
- Easy access
- Interaction/communication to lecturers and peers
- No answer

25. Additional comments

<table>
<thead>
<tr>
<th>Positive comments</th>
<th>Negative comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Number of times the item was identified
References


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