Fostering Friendships Amongst First-Year University Students: The Use of Online Learning Software

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Abstract: Research into student dropout rates has attempted to identify factors that influence a student’s chances of dropping out. One factor that has been identified is the development of supportive peer networks, groups of students who study together. When students develop these networks, they appear to help students become more integrated into campus life. It would seem that the development of friendship networks, based on socializing, could also be important, however, there has been little research in this area. This study looks at whether students who participated in online tutorial discussions, in addition to face-to-face tutorial meetings, made more friends through the class than students who did not participate in such discussions. Using a quasi-experimental research design, students in Introductory Sociology were divided into three groups, two with additional online tutorial activities, and a control group without. I found that students in both experimental groups were more likely to make friends through their tutorial (which, for the experimental groups included both face-to-face and online discussions) than control group students (who only had face-to-face discussions), who were more likely to make friends through the lecture. I also found that older students who were in the experimental groups reported making greater numbers of friends than those who were not.

Introduction

Retention rates for first-year students are a continuing source of concern for course conveners. In Australia, the retention rates for commencing undergraduate students were between 78% and 79% for the years 1992-1999 (Department of Education 2001). The rate for my university, Swinburne University of Technology, was 78% in 1999, which is similar to the overall retention rate for Australian universities in the 1990s (Department of Education 2000). This means that between 1/4 and 1/5 of the students who enrol at my university, as at other universities in Australia, will drop out.

Research into student dropout rates has identified factors that influence a student's chances of dropping out (e.g., Rickinson and Rutherford 1996; Ozga and Sukhnandan
One factor that has been identified as improving retention rates is the development of supportive peer networks, groups of students who study together. When students develop supportive peer networks, these networks appear to help students become more integrated into campus life (Peat et al. 2001a; Light 2001; McInnis and James 1995). It would seem that the development of friendship networks, groups of people who socialize together, could also be important in helping students become integrated into campus life, however, there has been very little research in this area. This study looks at whether participation in online tutorial discussions, in addition to face-to-face tutorial meetings, has an impact on students' developments of friendships at university.

Using a quasi-experimental research design, students in Introductory Sociology were divided into three groups, two with online tutorial activities in addition to regular face-to-face tutorial discussions, and a control group participating only in regular face-to-face discussion. I found that students in both experimental groups were more likely to make friends through their tutorial than control group students. Students in the control group were more likely to make friends through the lecture than through tutorial participation. I also found that older students who were in the experimental groups were more likely to make friends than those who were not.

**Undergraduate Student Retention and Supportive Peer Networks**

Although there has not been a great deal of Australian research on university attrition, research conducted overseas suggests that students' "Background traits and initial level of commitment [to university study] jointly influence both integration into the academic and social systems of a given institution and subsequent
withdrawal/persistence behaviour" (Rickinson and Rutherford 1996: 213). Students come to university with individual background characteristics (such as their educational achievements, their culture, and their family income) and these have a strong influence on whether they succeed at university. Students' levels of commitment to university study also vary, and this also has an impact on their likelihood of dropping out (Ozga and Sukhnandan 1998). American research suggests that most students who drop out of university do so in their first-year (Tinto 1993, cited in Braunstein and McGrath 1997).

Research has analysed factors that might lead to an increase in retention rates of most first-year students. An important factor is the development of student peer support networks, groups of students who study together (Light 2001; Peat et al. 2001b; McInnis and James 1995). This type of network facilitates student learning by providing encouragement and support specific to a student's course of study. These networks are also called learning communities (Krause 2001). Supportive peer networks of students are different from friendships networks, which are groups of people who socialize together, in that students in supportive peer networks are in the same courses and study together but may not socialize together, however there may be overlap between friendship and peer support networks. There has been little research on whether students who develop friendship networks at university are less likely to dropout than students who do not make new friends, but it is reasonable to argue that strategies put in place to help students develop supportive peer networks might also help them to develop strong friendship networks. Universities have implemented strategies such as first-year orientation programs in order to help their students connect with each other (e.g., Peat et al. 2001b; Krause 2001).
Australian research has mainly focused on traditional approaches to developing peer support networks such as through student orientation programs (Peat et al. 2001b) and writing assignments (Krause 2001), but increasingly students rely on electronic communication among peers for study purposes. In recent years, most universities have moved to develop online subject websites. At Swinburne, academics use the software program Blackboard 6 to develop their subject websites. This software has the potential to be utilized for fostering the development of student peer support networks and friendships through its online discussion board and e-mail facilities.

How online technology can impact on student learning is a growing area for sociological research (e.g., Haythornthwaite and Kazmer 2002). The widespread adoption of computer programs like Blackboard and WebCT has led to an increasing body of research on their uses. Thus far, research in this area has looked at the impact of using these software systems on specific learning outcomes, such as examining the impact of student characteristics on use of the system (Yi and Hwang 2003), the use of technology to improve learning environments (Charlesworth and Vician 2003), and the use of online software as an alternative to meeting face-to-face (Bell 2001). Like the research on first-year orientation more generally, research on software like Blackboard is often evaluative, examining how the program was used in the specific subject (e.g., Wamser 2003; Charlesworth and Vician 2003; Jackson 2003).

The present study developed out of my interests in the use of online learning software and also in retaining first-year sociology students. I hypothesized that mandatory participation in online discussions by students in the same tutorials would provide
them additional opportunities to connect with each other and might help them to
develop both friendship and supportive peer networks. Therefore, although the study
was spurred by my desire to influence retention rates, it is primarily a study of
whether participation in online discussion groups helps students to make connections
with their peers. This paper focuses on whether the online activities impacted on
students' developments of new friendships.

**Online Learning at Swinburne**

Swinburne, like most Australian universities, is largely a commuter campus. Very
few students live in the campus residence halls; the vast majority come to campus
only to attend their classes. In fact, there are only a couple of places on campus
where students can just hang out. This means that the opportunities for making
friends at Swinburne are fewer than at universities with large residential colleges, or
those with strong norms around joining clubs.

At Swinburne, all classes are required to have their own websites, and the conveners
of those classes are required to provide content for those websites. This means that
different lecturers have different types of content on their subject websites. Lecturers
who are interested in the use of subject websites might have quite sophisticated ones.
Others might have the bare minimum in their websites.

The university provides students with both computer labs and dial-in access to their
university accounts, so those with their own computers (the majority) can use the
university's online resources at any time. All students are automatically enrolled in
their subjects’ websites and they are expected to visit them on a regular basis.
Methods

This project employs a quasi-experimental research design. Experiments and quasi-experiments control for social factors so that the differences between experimental and control groups can be attributed to the experimental conditions (Neuman 2000). This study was designed so that all students received similar face-to-face tutorial activities, but only students in the experimental groups experienced online discussions. Thus, I should be able to attribute systematic differences between the control and experimental groups with the experimental intervention: the online tutorial discussions.

Students in Introductory Sociology were assigned to one of three experimental groups. There were 144 students enrolled in eight tutorial groups at the start of 2004. I expected that students would be most likely to develop friendships with people in their tutorial groups, so rather than assigning individual students to the experimental groups, I assigned entire tutorials. The three groups were: 1) the e-mail group (three tutorials), 2) the discussion board group (three tutorials), and 3) the control group (two tutorials). I will discuss each in turn.

Students in the e-mail group were expected to participate in weekly e-mail discussions about the assigned readings with other people in their tutorial. Comments could be about the readings themselves, or about another student's comment(s). Group e-mailing lists were set up in Blackboard, and students were expected to login to Blackboard and e-mail their classmates each week prior to their tutorial.
Students in the second group, the discussion board group, were expected to participate in a weekly online discussion board set up for their tutorial. Like the e-mail group, students in this group were expected to login to Blackboard, but instead of sending e-mail, a new discussion board for each discussion board group tutorial was set up each week. Where students in the e-mail group got their classmates' comments directly in their e-mail inboxes, students in the discussion board group had to visit their Blackboard group page to see what their classmates had to say. Another difference between these two groups was that the discussion board groups had threaded discussions. In a threaded discussion, you can respond to a particular post, and your response will appear directly below that post, so it is very clear that you are having a ‘conversation’ with that person and their comments. Students in both the e-mail and discussion board groups were told that participation in the weekly online discussion would be included in their tutorial mark.

The third group was the control group. This group had no required online participation, and no special e-mail or discussion board facilities were set up for tutorials assigned to this group. This group received the type of tutorial we have always delivered in the subject with no required online activities. In order to make up for the extra time students in the two experimental groups had put into the online discussions, they had one less face-to-face tutorial than students in the control group.

The study assigned entire tutorial groups to the experimental and control groups. At Swinburne, students choose their preferred tutorial times, so tutorial assignment is not a random process. Because of this, one of the experimental groups, the discussion board group, varied systematically by age from the other two groups. Of its 23
participants, the discussion board group had 12 participants (52%) aged under 26 and 11 (48%) above that age. Of the e-mail group's 26 participants, 21 (81%) were under 26 and five (19%) were over. Finally, the control group had 16 participants aged under 26 (80%) and four aged 26 and above (20%). While the control and e-mail groups had similar percentages of participants under and over 26, the discussion board group had proportionately more mature age students than the other two.

Two anonymous surveys were conducted with students in the class. The first was conducted during the first lecture, and the second was conducted during the final lecture. Participation in the surveys and the experimental groups was voluntary. That is, students were told that if they did not wish to participate in the experimental activity they could ask to be reassigned to a control group tutorial. No students asked to be reassigned. Of the 144 students enrolled in introductory sociology at the start of the semester, 121, or 84%, were still enrolled at the end of the semester, a dropout rate of 16%.³ 112 students completed the first survey (this represented 78% of students enrolled in the class at the beginning of semester), and 72 completed the second survey (60% of students enrolled in the class at the end of semester). This paper discusses results from the second survey.

The second survey asked students how many people at Swinburne they knew at the end of the semester and whether (and how many) they had made friends through participation in Introductory Sociology, among other things. It also asked for students' views of the experimental group they had participated in.
Results

Table 1 shows the percentages of students who said they had made at least one friend during the semester.

Table 1: New friends by experimental group

<table>
<thead>
<tr>
<th></th>
<th>Discussion Board Group</th>
<th>E-mail Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students who said they had made at least one friend during the semester</td>
<td>20 (80%)</td>
<td>19 (70%)</td>
<td>17 (85%)</td>
</tr>
<tr>
<td>Total number of respondents</td>
<td>25 (100%)</td>
<td>27 (100%)</td>
<td>20 (100%)</td>
</tr>
</tbody>
</table>

77% of respondents reported having made new friends during the semester.

Interestingly, students in the control group were more likely to report having made friends (85%) than either of the experimental groups. On face value, then, it would appear that the online participation either did not affect or had a negative effect on a student’s likelihood of making new friends. Looking more closely, however, different mechanisms seem to be operating for each group.

Table 2 shows where the students who had made friends said they had met them. It shows that more students in the two experimental groups reported making new friends through their tutorial than students in the control group. Control group members were, conversely, more likely to report having made friends through attending the lectures. This finding may explain why it would appear that members of the control group were more likely to have made friends than those in the other groups. If the lecture was a social experience for the control group students, it is possible they would be more likely to attend, and more therefore likely to fill out the survey.
Table 2: Where students made friends

<table>
<thead>
<tr>
<th></th>
<th>Discussion Board Group</th>
<th>E-mail Group</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Made friends at tutorial</td>
<td>17 (85%)</td>
<td>18 (95%)</td>
<td>10 (59%)</td>
</tr>
<tr>
<td>Made friends at lecture</td>
<td>12 (60%)</td>
<td>9 (47%)</td>
<td>13 (76%)</td>
</tr>
<tr>
<td>Made friends elsewhere at Swinburne</td>
<td>7 (35%)</td>
<td>7 (37%)</td>
<td>5 (29%)</td>
</tr>
<tr>
<td>Total (n)*</td>
<td>20</td>
<td>19</td>
<td>17</td>
</tr>
</tbody>
</table>

*Percentages do not add up to 100 because students could choose multiple answers.

Only 60% of students enrolled in the subject attended the last lecture. This number is not a random sample of enrollees; it includes students who had a particular reason to attend the final lecture: for example, those who hoped to get information regarding the exam, those who enjoyed the lectures, and those who went to lecture to see their friends.

Ozga and Sukhnandan argue that different factors affect dropout rates for mature age students than for younger students. They found that students' background and how well they fit with their course were key explanatory variables for school leavers dropping out, but that mature age students were more likely to dropout due to external circumstances (Ozga and Sukhnandan 1998). This suggests that developing new friendships may be particularly important for younger students.
Table 3 shows the breakdown of respondents by age, experimental group, and numbers of new friends made. It shows that 38% of respondents to the after survey were under 20 years of age, 31% were between the ages of 20 and 25, 8% were between the ages of 26 and 30, and 19% were over the age of 30. It shows that only one person in the youngest age group was in the discussion board group, and that person did not make new friends. It also shows quite clearly that students over the age of 25 who were in the two experimental groups were reported making more friends than students over the age of 25 in the control group. For people under the age of 25, students in the experimental groups were more likely to have made more than

<table>
<thead>
<tr>
<th>Your age is:</th>
<th>How many new friends have you met?</th>
<th>Tutorial Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Weekly Discussion Board</td>
</tr>
<tr>
<td>&lt;20</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1-3</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Total people &lt;20 who made new friends</td>
<td>0</td>
</tr>
<tr>
<td>20-25</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1-3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total people 20-25 who made new friends</td>
<td>7</td>
</tr>
<tr>
<td>26-30</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1-3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total people 26-30 who made new friends</td>
<td>4</td>
</tr>
<tr>
<td>&gt;30</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1-3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>4-6</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total people &gt;30 who made new friends</td>
<td>7</td>
</tr>
</tbody>
</table>
three friends than students in the control group, but students in the control group were more likely to have made friends at all. Again, this might be due to the sample over representing people who met their friends at lecture from the control group.

**Discussion**

Participation in the weekly discussion board group appeared to have a strong positive impact on the likelihood of students making new friendships through their tutorial. Participation in the weekly e-mail group also had a positive impact, although smaller. These positive impacts were particularly noticeable for students over the age of 25. 75% of the students in the control group over the age of 25 did not make new friends, whereas only 14% of students in this same age group who were in the experimental groups did not make friends.

Given the different age profiles of three groups, these differences must be approached cautiously. The discussion board group had proportionately more mature age (over 25) students than the other two groups. That these mature age students made more friends in their tutorial than the other two groups may be because of the online participation, but it may also have been that they had more people of a similar age and interests than their peers in the other groups, a reflection of the group's demographic composition. Whether or not online participation helps mature age students make friends is an area that needs further study.

For younger students, the online discussions seemed to have less of an impact on their likelihood of developing new friendships. More younger students who were in the control group reported making new friends than younger students in the experimental
groups, although those younger students in the experimental groups who made friends reported making greater numbers of friends per student than those in the control group. Most students in the experimental groups in general reported making friends through their tutorial. More students in the control group reported making friends through lecture attendance than through tutorial attendance. This is an interesting result as it suggests the tutorial groups with the online participation may have developed closer bonds than the control group.

Younger students will more likely to report having made new friends if they were in the control group that they were in an experimental group (see Table 3). Mature age students were more likely to report new friendships if they were in an experimental group, particularly the discussion board group. This suggests that different mechanisms may be operating for the development of friendships in younger and mature age students. Future research might explore how first-year students make friends.

This is a small study based on one class, so its findings cannot be generalised to other classes or other universities. However, the study suggests that participation in online activities might have an impact on students' social experiences at university. As many universities require staff to initiate online activities, online tutorial discussions might be a promising means of developing student friendship networks.
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Peat, M., Dalziel, J. and Grant, A. M. (2001b) 'Enhancing the first year student experience by facilitating the development of peer networks through a one-day workshop', *Higher Education Research and Development*, 20, 199-215.


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**Endnotes**

1 Thanks to the students and tutors in Introductory Sociology 2004 all of whom participated in this research project. Thanks also to my research assistants, Vikki Bunton, Penny Shields, Lisa Bakacs and Sally Buckley. This project was supported by a much appreciated grant from Swinburne's Research Development Grant Scheme.

2 The phrase "online discussion" refers to participation in both the e-mail- and discussion board-based groups' discussions.

3 The 121 remaining students only includes those students who submitted work during the semester. Students who did not submit anything were assumed to have dropped out, even if they did not officially drop out of the class. This makes the dropout rate appear higher than it actually was. No students who regularly attended their tutorials were in the small group who did not submit any work, so excluding those students should not impact on the results of the experiment.