

Changing the Conversation: Facebook as a Venue for Online Class Discussion in Higher Education

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Abstract

In this paper, the author reports on a study of the online activity of students in a final-year unit in the Internet Communications course at Curtin University. Student activity was recorded in the discussion forums of the Blackboard learning management system for three instances of the same unit, in 2011 and 2012. Then, in the latter two of these instances, an additional discussion forum was added, on Facebook, and activity was also recorded. Students' posts were measured for content, length, and which week of the study period they were posted online. The study found the addition of the Facebook forum resulted in a significantly higher level of student activity, in real terms and across the 13 weeks of the unit. The addition of the Facebook forum did not significantly affect the level of student participation in the Blackboard forum. The use of the Facebook forum also changed the type of interactions by students, with the learners being more involved in discussions about course administration and assignments. Most notably, both students and staff began posting additional links to material that supported learning in the unit, but were not set as part of the unit's formal readings.

Keywords: student engagement, online discussion forums, online student activity, Blackboard, Facebook, online learning, online teaching

Background

In 1968 Licklider and Taylor predicted computer communications technology would allow us to "interact with the richness of living information – not merely in the passive way that we have become accustomed to using books and libraries, but as active participants in an ongoing process, bringing something to it through our interaction with it, and not simply receiving something from it by our connection to it" (p. 21). Licklider and Taylor were writing long before the Internet became part of people's everyday lives. However, this prescient statement about the potential of digital communications to allow people to interact with the richness of living information resonates with the growing use of the Internet for education, particularly at the tertiary level. Rather than just acting as a repository for online readings, the technology encourages students and teachers to engage, communicate, and interact, both with each other, and with the information that they bring to the learning experience. In this article, the authors explore the potential for the online social networking site Facebook to be used as a discussion forum, as part of the formal learning and teaching space, in both fully online and blended learning experiences in higher education. Specifically it reports on a study completed in 2012 that compared the online discussion activity in three instances of the same third-year unit at Curtin University taught fully online through Open Universities Australia (OUA), and also in a blended online and face-to-face mode through Curtin's main Bentley campus.

Allen and Seaman (2011; 2010) have traced the continued growth of online learning through the Internet in higher education, with nearly a third of students in the United States taking at least one class online in 2010 (Allen & Seaman, 2011). The recent interest in massive open online courses (MOOCs) has highlighted some of the opportunities this type of learning can present, especially for making this level of education accessible to a wider number of participants. Facebook is the world's largest online social networking site. It currently has over one billion users (Constine, 2013). As Bateman and Willems (2012) note, the emergence of social networking sites challenges the traditional ways that information and communication technologies have been used for online learning, as Facebook is increasingly used as a channel for communication with students in higher education. The social network can play a number of roles in higher education. It helps students develop and maintain social capital (Ellison, Steinfield, & Lampe, 2007), forms a place where students can collaborate and

communicate with their peers (Grey, Lucas, & Kennedy, 2010), and exists as a place for creating and maintaining student communities (Cluett, 2010). Facebook can also be used to create a community of learning, particularly for groups of geographically dispersed students (Bateman & Willems, 2012). As Lenartz (2012) notes, social media also plays a positive role in lifelong education. In addition, for students with disabilities, Facebook is currently the most accessible of the online social networking site (Ellis, 2011).

Some scholars caution that Facebook should be seen as a student-only space (Teclehaimanot & Hickman, 2011; Grey, Lucas, & Kennedy, 2010), arguing students might believe it an inappropriate place for interacting with teaching staff (Teclehaimanot & Hickman, 2011) and would resist staff members accessing their essentially private Facebook space (Best, Hajzler, Pancini, & Tout, 2011). There are also reports of anecdotal evidence teachers do not want to use Facebook in education due to concerns students would find it inappropriate (Teclehaimanot & Hickman, 2011). Roblyer, McDaniel, Webb, Herman, and Witty (2010) have found "Students seem much more open to the idea of using Facebook instructionally than do faculty" (p. 138). Others have cautioned there are accessibility issues for students who are not part of the network (Grey, Lucas, & Kennedy, 2010) and for students who for a range of reasons may not wish to use the network (McCarthy, 2010).

Yet as Palloff and Pratt (2009) note, "The positive aspects of using these forms of technology, however, may outweigh the negatives" (p. 4), and, indeed, Facebook is easier to use than many existing forums in traditional university learning management systems (LMS) (Grey, Lucas, & Kennedy, 2010). In this study, closed Facebook groups have been used as an addition to the more traditional discussion boards found in LMSs such as Blackboard and Moodle. These groups were set up by teaching staff, as a formal part of the online learning and teaching space. The volume, timing, and nature of student interactions were then mapped. In this article, the authors present the results of this study.

Overview

In April 2013 there were 11.5 million Facebook users in Australia, making up 53.67 percent of the total population (Social Bakers, 2013). Students and universities are increasingly making use of the social network to communicate with each other, and to create and maintain communities (Cluett, 2010). In 2010 and 2011 students enrolled in a number of units in the Internet Communications degree at Australia's Curtin University and Open Universities Australia had begun forming their own groups on Facebook to discuss the unit material, in a process similar to the one outlined by Haverback (2009). In some cases staff were invited, or asked to join these groups, although they remained student-administered spaces. This study tracks the changes to online discussions that occur when a similar Facebook group is added as an official, teaching staff administered forum run in addition to the discussion board usually associated with popular LMSs, in this case, Blackboard. Facebook offers a number of advantages over traditional LMS discussion forums. Students tend to access Facebook more often than the traditional systems (Bateman & Willems, 2012), and the network provides more connectivity and personal profile options than a traditional LMS (Mazman & Usluel, 2010).

There are a number of problems identified with the use of LMS discussion forums that the addition of a Facebook group helps to overcome. As Dabbagh and Kitsantas (2012) note, LMSs tend to emphasize faculty dissemination tools over student learning. Similarly, some studies have lamented the low level of student interaction in LMS discussion boards (Schroeder & Greenbowe, 2009). Gao, Zhang, and Franklin (2013) suggest this is a function of the threaded discussion forums that are used as a place for discussion in many LMSs, noting this format does not naturally foster online discussion. Stern and Willits (2011) explicitly suggest some of these problems can be overcome by bringing together the best features of traditional LMSs with the features available through social media applications such as Facebook. McLoughlin and Lee (2010) note "Used appropriately, these tools can shift control to the learner, through promoting learner agency, autonomy, and engagement in social networks that straddle multiple real and virtual learning spaces independent of physical, geographic, institutional, and organisational boundaries." (p. 28)

Junco (2013) has observed that lots of Facebook research in this area has focused on self-reporting rather than measuring actual use of the social network. A number of studies have explored student use of and attitude toward Facebook, using surveys and interviews. These include studies set in a number of different national higher education environments, including Thompson and Loughheed (2012), Roblyer, McDaniel, Webb, Herman, and Witty (2010) and Karl and Peluchette (2011) in the United States, and Smith and Caruso (2010) in the United States and Canada, Wright, White, Hirst, and Cann (2013) and Madge, Meek, Wellens, and Hooley (2009) in the United Kingdom, Tiryakioglu

and Erzurum (2011) and Ranieri, Manca, and Fini (2012) in Italy, Baran (2010) and Kayri and Çakir (2010) in Turkey, Bicen and Cavus (2011) in Cyprus, Grosseck, Bran, and Tiru (2011) in Romania, Hew and Cheung (2012) in Singapore, Kabilan, Ahmad, and Abidin (2010) in Malaysia, Chang and Lee (2013) in Taiwan, and Cheung, Chiu, and Lee (2011) in Hong Kong, with similar studies on other social networks in higher education such as the Wodzicki, Schwämmlein, and Moskaliuk (2012) study of StudiVZ in Germany.

There have been some studies that specifically measure actual activity on Facebook, such as Selwyn's (2009) qualitative study of Facebook walls. This study also sought to measure actual student activity on Facebook and in the Blackboard LMS discussion area.

The Study

This study observed student activity in 2011 and 2012. It compared three cohorts of students in a third year Internet Communications unit, titled Internet Politics and Power (NET 303). The aim was to observe what changes, if any, occur in online class discussions when a Facebook group is used to augment an existing LMS discussion board for this particular course of study. The study compared the amount and type of online discussion the students and teaching staff engaged in through both the unit's LMS, Blackboard, and also through Facebook groups that were established for each instance of the unit. Each forum had each post analyzed in terms of when it was posted, how long it was, and the type of content it used—broadly labeled into six different categories. The first cohort of 23 students was used as a control group. The students studied the unit fully online through Curtin's partner institution Open Universities Australia (OUA). This group used only the discussion board feature in Blackboard and there was no corresponding Facebook group administered either by teaching staff or the students in this group. The second group of 25 students was studying the unit as a mixture of blended learning for on-campus students and fully online external students, and in this case both Blackboard and Facebook were used for online discussion. The final group of 45 students was once again learning fully online through OUA, again in this case both the LMS and the social network were used for online discussions.

The Blackboard discussion board was used in parallel to Facebook for this study, partly to address the potential concerns relating to whether students had Facebook access, or were happy to use this social networking site for study purposes, raised by Grey, Lucas, and Kennedy (2010) and McCarthy (2010). It also allowed the study to see the impact of the Facebook groups on Blackboard discussions, and the potential impact on students who did not have access to the Facebook group. A final area it addressed was the small number of students involved in these three groups who were studying for part or all of the study period in mainland China and were unable to access Facebook from that country.

Once the unit was complete and the students were unenrolled from the unit on the Curtin University LMS, the posts in the Blackboard discussion forum were anonymized automatically. The Facebook groups still link individual posts to a particular Facebook account, but as the data was collected it was also anonymized to protect the privacy of the students. The data collected consisted of looking at each post and recording when in the study period it had been made—broken into the thirteen weeks of the study period, what broad topic it addressed, as predetermined by six categories of "Admin", "Assignment Questions", "Assignment Extensions", "Learning Links", "Unit Learning Material," and "Off Topic Posts"—and the length of each post. This data was collected manually. In each instance of the unit, the results for Blackboard discussion posts and Facebook posts were recorded separately to see how students made use of each platform.

The Unit

Internet Politics and Power is a third year-level unit in the Curtin University Internet Communications degree. It also forms part of the postgraduate masters and graduate diploma programs in Internet Communications. The Curtin course handbook describes the unit:

One enduring myth of the Internet is that what we do there cannot be controlled. While this is not true, the Internet does present new challenges and possibilities for regulation, producing new forms of freedom and constraint. In this unit you focus on the politics of Internet power, via topics on censorship, privacy, security and harassment. You will explore how the Internet is 'governed', considering technical, legal and economic reasons for regulatory decisions. Ultimately, you will come to understand how networked communications both create and challenge long-running political contests of freedom and control. (Curtin University, 2013).

The unit has a significant online component, beyond online discussions and unit readings. As part of their assessment, students are expected to post one of their three assignments as a publically accessible presentation online, often as a SlideShare presentation or YouTube video, and comment on other students' presentations.

The Students

The students, at this stage of their studies in this area, are expected to be familiar with online discussions, particularly the Open Universities Australia students who conduct all their studies in a fully online environment. There was also a large proportion of the students in the Curtin blended unit (nine of the 25) who were studying towards a postgraduate degree. The majority of the Curtin students were based in Western Australia, although slightly more than half the students enrolled were external students who were, like the OUA students, studying fully online. Of these a minority were based in other states across Australia. The OUA students were also primarily located in Australia, although spread across the country, with a minority of students who were studying the unit from countries farther abroad.

Facebook Groups

Facebook groups were chosen as the best method for utilizing Facebook as a discussion forum. The use of groups allows participants to interact without having to Facebook friend other participants. This avoids many of the potential privacy implications of using the platform for both students and teaching staff. Allen (2012) observes that when using Facebook in learning and teaching, private groups and messages seem the most obvious way to utilize the network. Daric (2014) also notes the value of a persistent chat log as providing a sense of co-presence for geographically dispersed participants. The ability to integrate Facebook into smartphones and tablets makes the platform more immediately accessible than traditional LMS discussions, where a student will often have to navigate a number of screens to log in to a university system, then the LMS, before being able to access a discussion board. This difference in the ease of access is highlighted further when considering the ability to push out a Facebook post to such devices. This is potentially useful for both students and staff who are able to be promptly made aware of activity in an online discussion and have the option of responding quickly.

The use of Facebook groups in this case was a natural extension of the previous situation with Curtin and Open Universities Australia units where the students would set up their own Facebook group for the unit. When staff members would also join these groups it created a tension between the formal discussion space in the LMS and the informal Facebook group.

While the class discussions for the unit was conducted on Facebook and through the Blackboard discussion forums, these were not the only means of communication with the unit learning material and other readings hosted online through the LMS and students and teaching staff communicating via email, and in the case of the on-campus students, also face-to-face in a classroom each week. Some researchers, such as Chamberlin and Lehmann (2011), have pointed to the value of using Twitter as a channel for communications in higher education. While each of these units used the Twitter hash tag #Net303, this channel of communications was notable for its lack of activity in each of the three instances studied for this research paper.

Blackboard Discussions

When comparing the use of Blackboard discussions in each group, there is little change in the pattern of posts throughout each week of the 13-week study period when comparing each of the three instances of unit. The volume of use is weaker in the Curtin Blackboard, possibly as a result of the addition of Facebook as a venue for online discussion, with posts-per-student dropping from 7.5 to 4.2, although the pattern of use is very similar. It has also been observed that generally students enrolled in the Internet Communications units through Curtin tend to be less active as a group online than OUA students. In the second OUA group, this time with the addition of a Facebook group, the pattern of activity was again similar. While the increased student numbers made it harder to make such a direct comparison with the first OUA group, this second instance of the fully online unit with OUA, even with the addition of Facebook, has a not dissimilar rate of activity in terms of posts per students, with 6.8 posts per student across the study period. It can be argued from these figures the addition of a Facebook forum did not significantly affect the level of participation in the Blackboard discussion group.

Students were asked to post links to their online presentation on Blackboard in week nine, and post their comments on other students' works in Blackboard by week eleven. This explains the spike in activity at that time. Similarly there is extra activity in weeks one and two, as each student posts, and responds to, welcome posts where students introduce themselves. Week seven for the Curtin University blended learning instance was a tuition-free week, as can be seen in less student activity at that time. Posts by teaching staff are reduced noticeably in the latter two instances of the unit, possibly as a result of the presence of a Facebook forum.

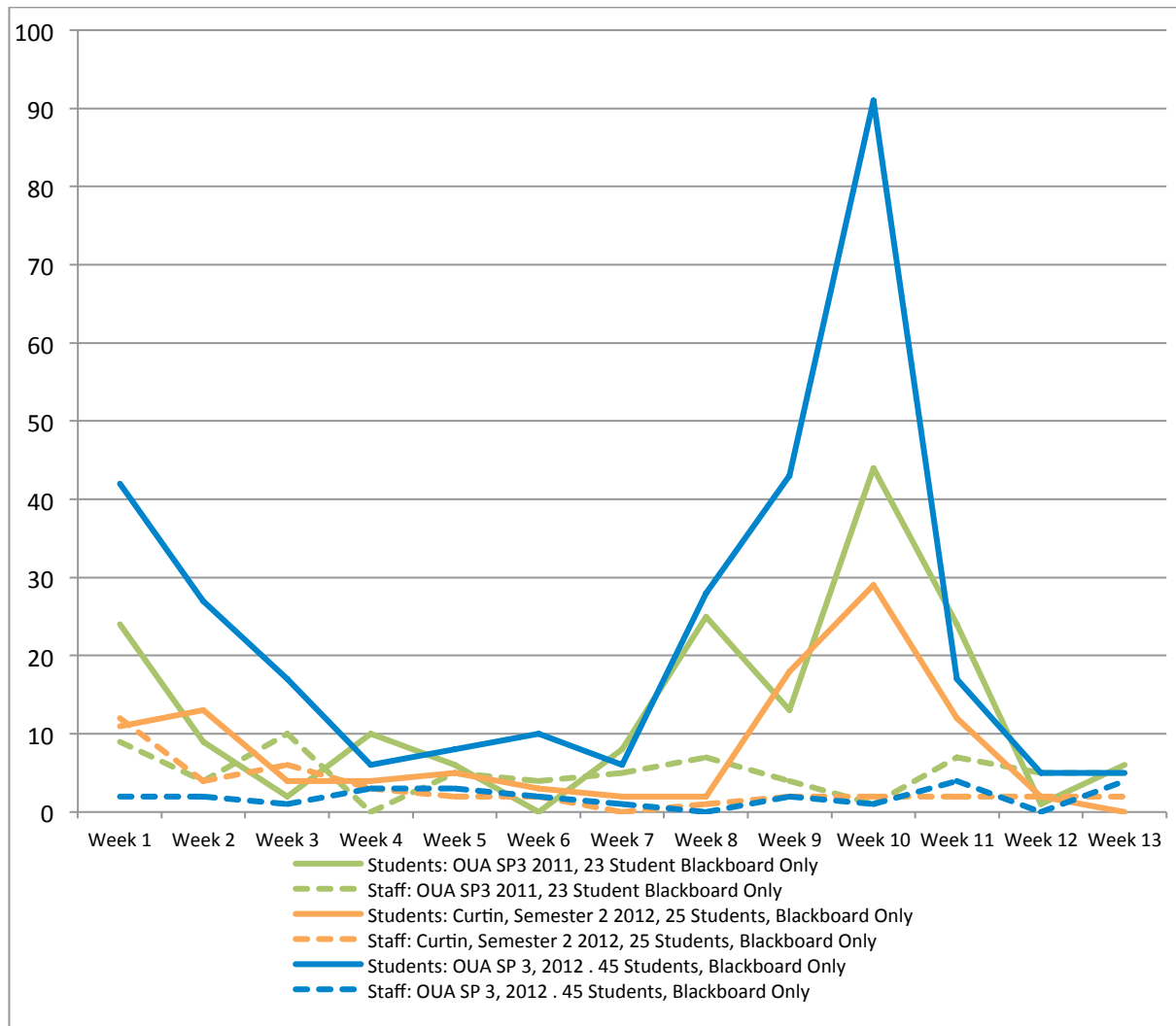


Figure 1. Blackboard activity—total posts per week

Facebook Discussion

Observing the level of student activity on Facebook, it can be seen that there were significant changes in the level of activity over the study period, both in terms of volume of overall activity, and also how the activity was spread across the 13 weeks of the unit. Schroeder and Greenbowe (2009) found that when they transferred their online discussion forum from WebCT to Facebook as a discussion forum, student activity was nearly 400 percent greater. WebCT and Blackboard use very similar discussion forums. However, in the case of this study, Facebook was used in addition to the Blackboard forums and those forums remained as active as before.

The week-seven tuition-free week at Curtin in 2012 was more apparent in these graphs. In week eleven students are completing the second part of assignment two, in which they are commenting on other students' work that has been posted online, often through SlideShare, YouTube, and similar sites, and this might explain the lack of activity on Facebook during this period.

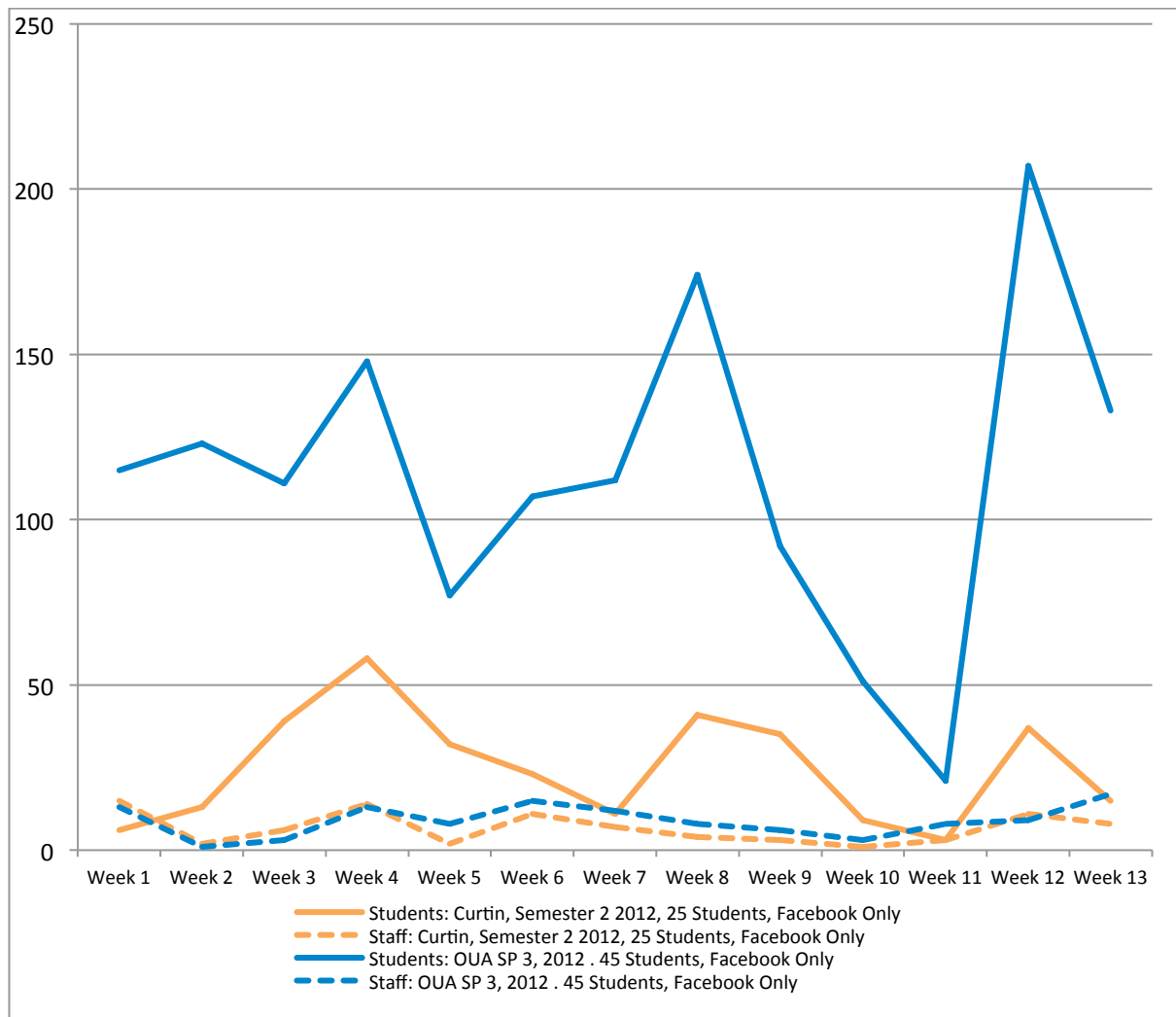


Figure 2. Facebook activity—total posts per week

Once the activity on the two forums is combined in the one figure, the changes in student online activity with the addition of Facebook across the unit become even more pronounced visually. As well as the amount of student activity being more evenly spread across the whole study period, the addition of Facebook dramatically increases the overall amount of student activity. Using only Blackboard in 2011, there were 10.3 posts per student in the study period. When Facebook was added in the Curtin blended learning environment in 2012, this increased to 22.2 posts per student. This then compared to the 2012 fully online instance using Facebook and Blackboard, where this again increases significantly, to 40.6 posts per student. These 216 and 394 percent increases in student activity seem broadly in keeping with Schroeder and Greenbowe's (2009) finding.

The ratio of student activity in response to staff posting also increases quite dramatically with the addition of Facebook. In the OUA Blackboard-only instance of the unit, there were totals of 172 student posts and 66 staff posts, with a ratio of one staff posting for every 2.6 student posts. In the blended learning instance at Curtin University, there were 427 student posts and 127 staff posts, with the comparative student participation rate increasing, with 3.4 student posts to every one staff post. In this case the students were also involved in face-to-face interaction. In the final fully online OUA class that used Facebook there were 141 staff posts and 1776 student contributions, with a ratio of 12.6 student posts to each staff post. These ratios do not reflect that in some cases staff were posting the same message to both the Blackboard and Facebook groups so as to not exclude students who were unable to access the Facebook forum. Given this cross-posting activity by staff, these higher ratios are more conservative than might appear at first glance.

The spike in activity in week ten is also greatly reduced in significance, perhaps indicating that when students were very active on the Blackboard discussion board this was offset by a reduced level of activity in the Facebook group.

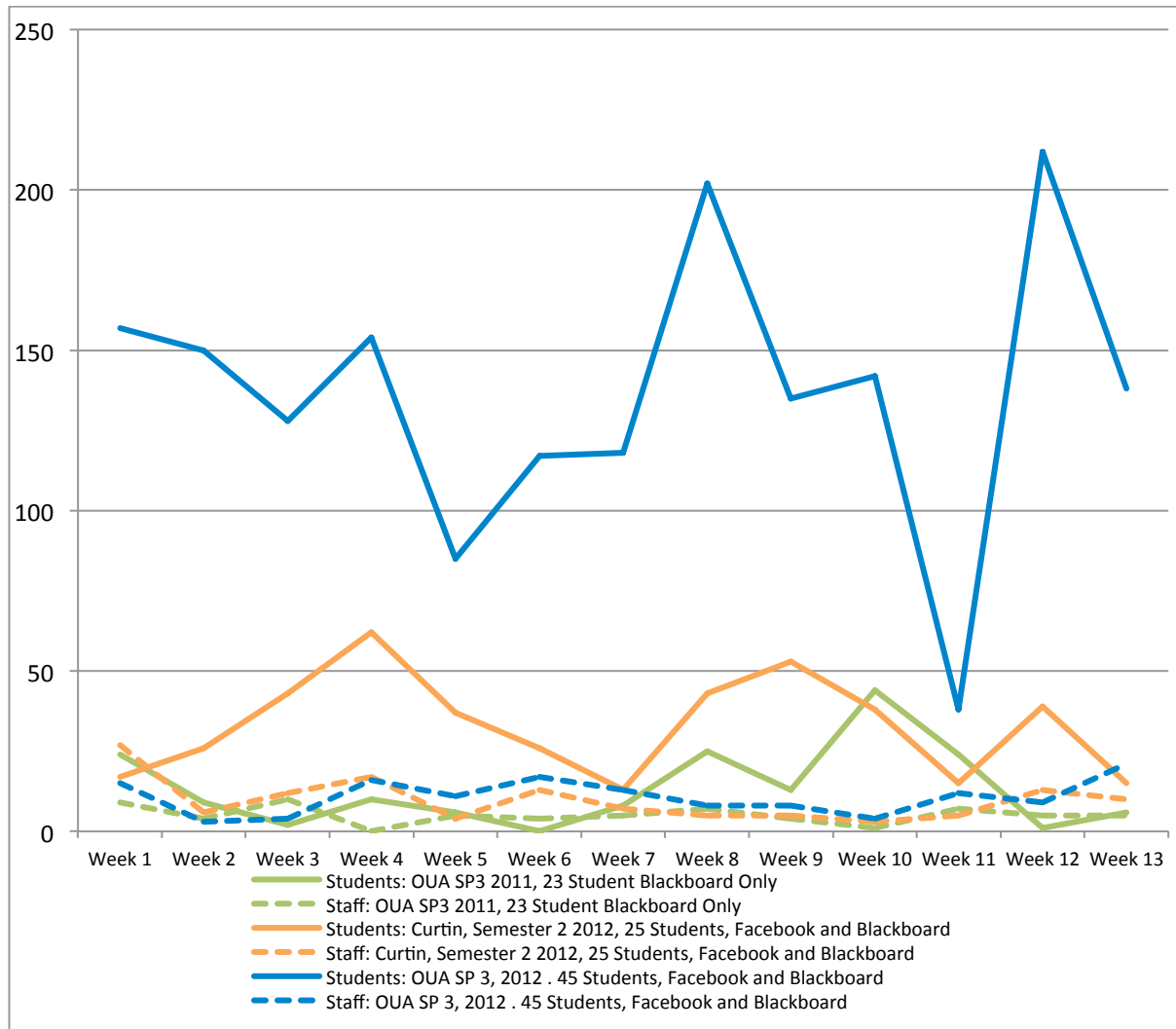


Figure 3. Blackboard and Facebook activity combined—total posts per week

The larger student numbers in the final instance of the unit makes direct comparisons more difficult, and some of this extra activity might be a result of there being more students for each student to engage with during the unit. However, showing the data as a week-by-week breakdown in terms of posts per students is a useful way of mapping this change in activity across the three separate instances of the unit.

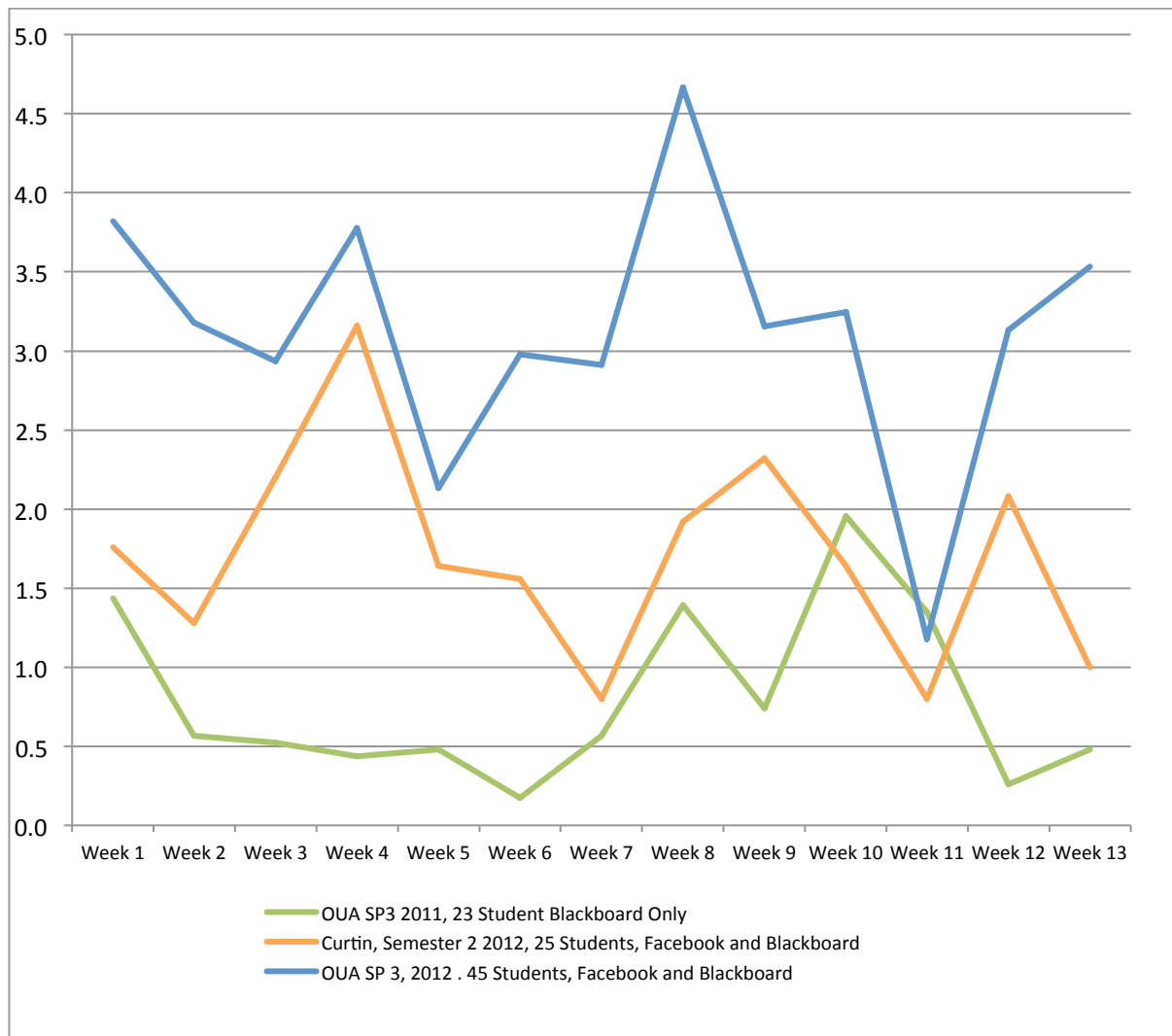


Figure 4. *Blackboard and Facebook—posts per student per week*

What Were We Saying: Changing the Conversation. The type of communication being made also changes with the introduction of Facebook as a discussion area. Posts were broken down into six different types of communications. Admin posts that related to administration of the unit or university, Assignment Questions that related to any of the units assessment, Assignment Extensions where students requested extra time for an assignment, Learning Links where additional material was posted or linked to through the discussion forums and the discussion related to this material, Unit Learning Material where the formal content and set readings for the unit were discussed, and Off-topic Conversations for correspondence that was not related to the unit. When only Blackboard was used the main focus was on the unit’s learning materials, with a few assignment questions. Most Off-topic posts were students introducing themselves at the start of semester. This remains the pattern of communication in Blackboard once Facebook was introduced as an additional forum.

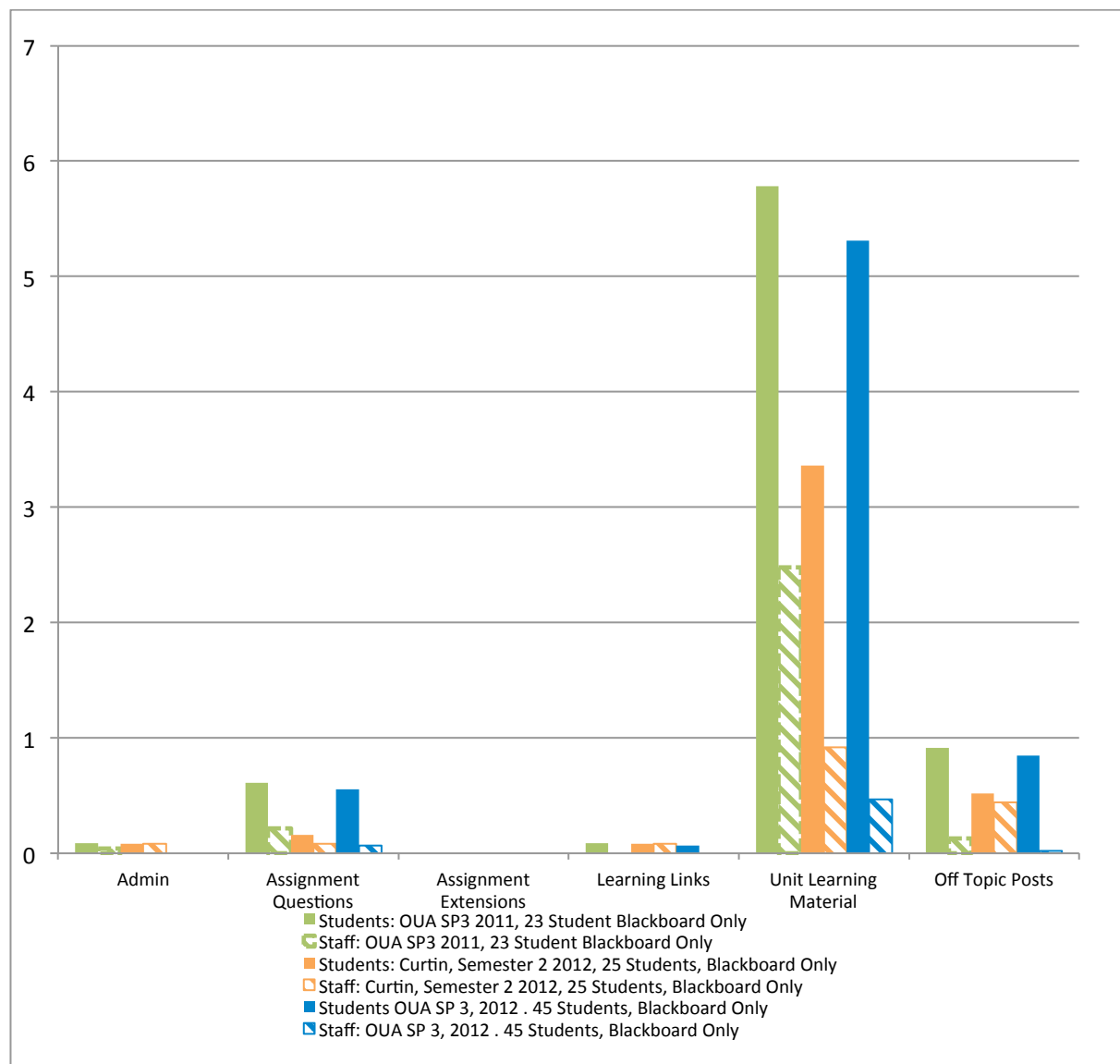


Figure 5. *Blackboard activity—posts per student by topic*

The nature of the posts on Facebook is quite different in content. Both staff and students introduced more external content to the unit as learning links. This would seem consistent with Bateman and Willems (2012) finding the use of Facebook in a higher education context promoted peer teaching and resource sharing, and Kayri and Çakir's (2010) observation that once Facebook was used as a learning and teaching platform, learning was shaped by students who also developed lesson material.

Discussion about assignments also increased on the Facebook group, as did questions of administration. This became even more pronounced in the final, more active instance of the unit, which had more students. Selwyn (2009) noted that nonsense or off-topic posts tended to be a persistent part of online learning and teaching forums that used Facebook, in this case there seemed not to be a huge distinction between Blackboard and Facebook, although this may have been distorted by including all the students introduction emails as off-topic, along with what might be more accurately described as nonsense posts.

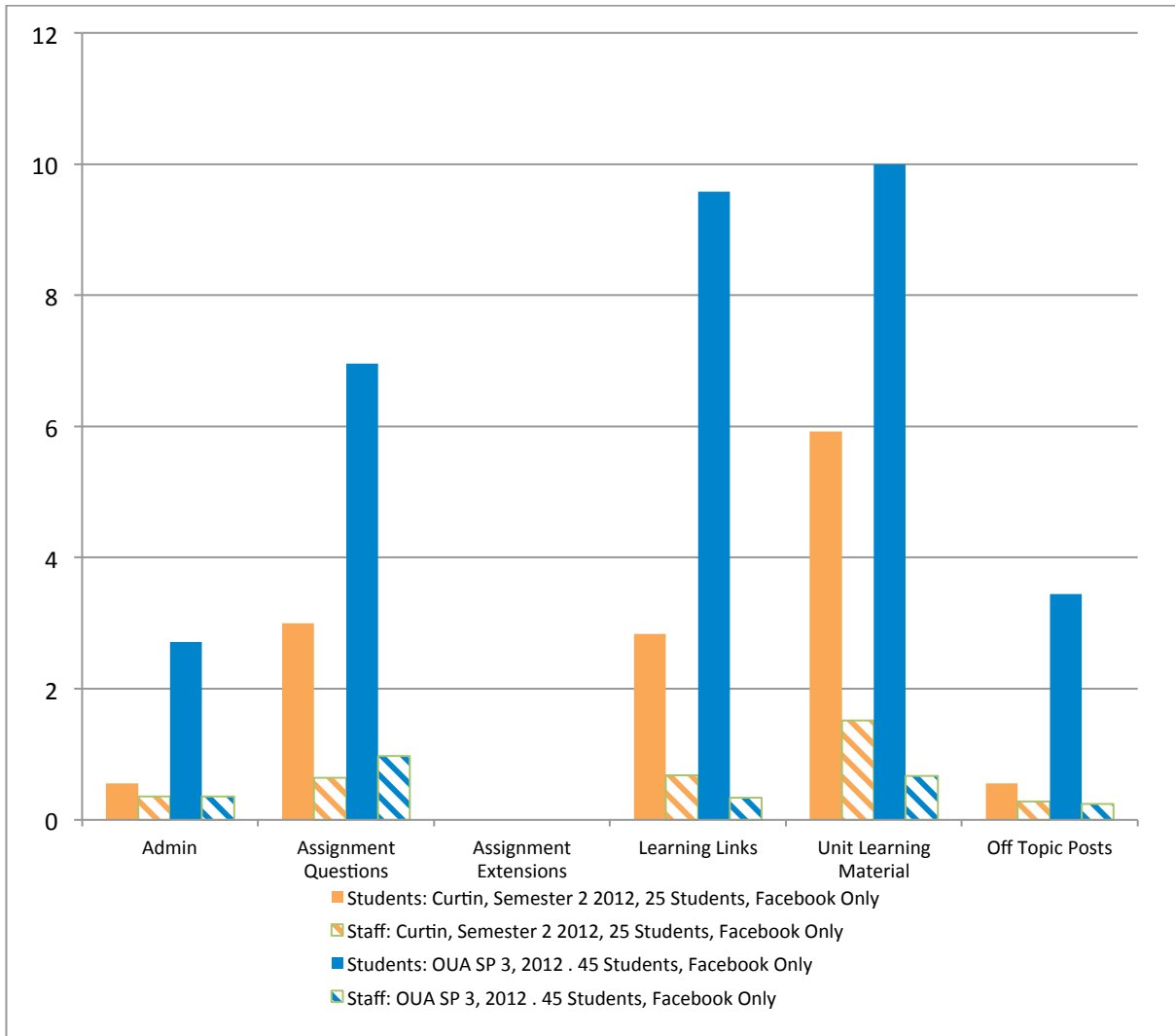


Figure 6. Facebook activity—posts per student by topic

Again by combining the two forums in the one chart, the different patterns of communication brought on by the addition of a Facebook discussion group can be illustrated more clearly.

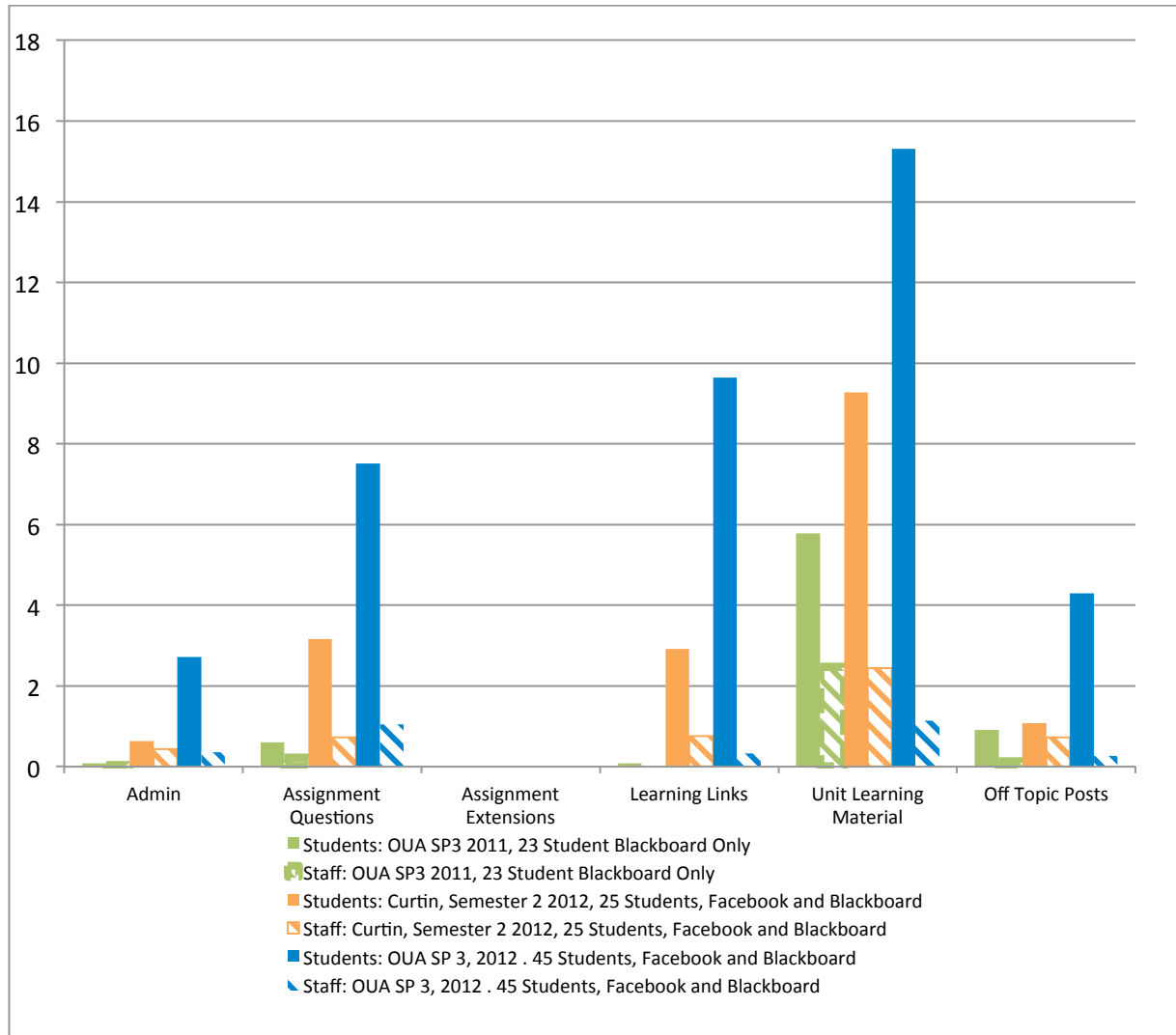


Figure 7. Blackboard and Facebook activity combined—posts per student by topic

How Much Was Said and the Level of Engagement. The third measure that was taken of student activity was the length of their posts. The actual measures used were 1–100 words, 101–200, 201–400, 401–600, and 601-plus. The pattern of the length of students’ posts in Blackboard was fairly consistent across the three instances of the course, although with a decline in post length of 100–200 words once Facebook was introduced as a discussion space.

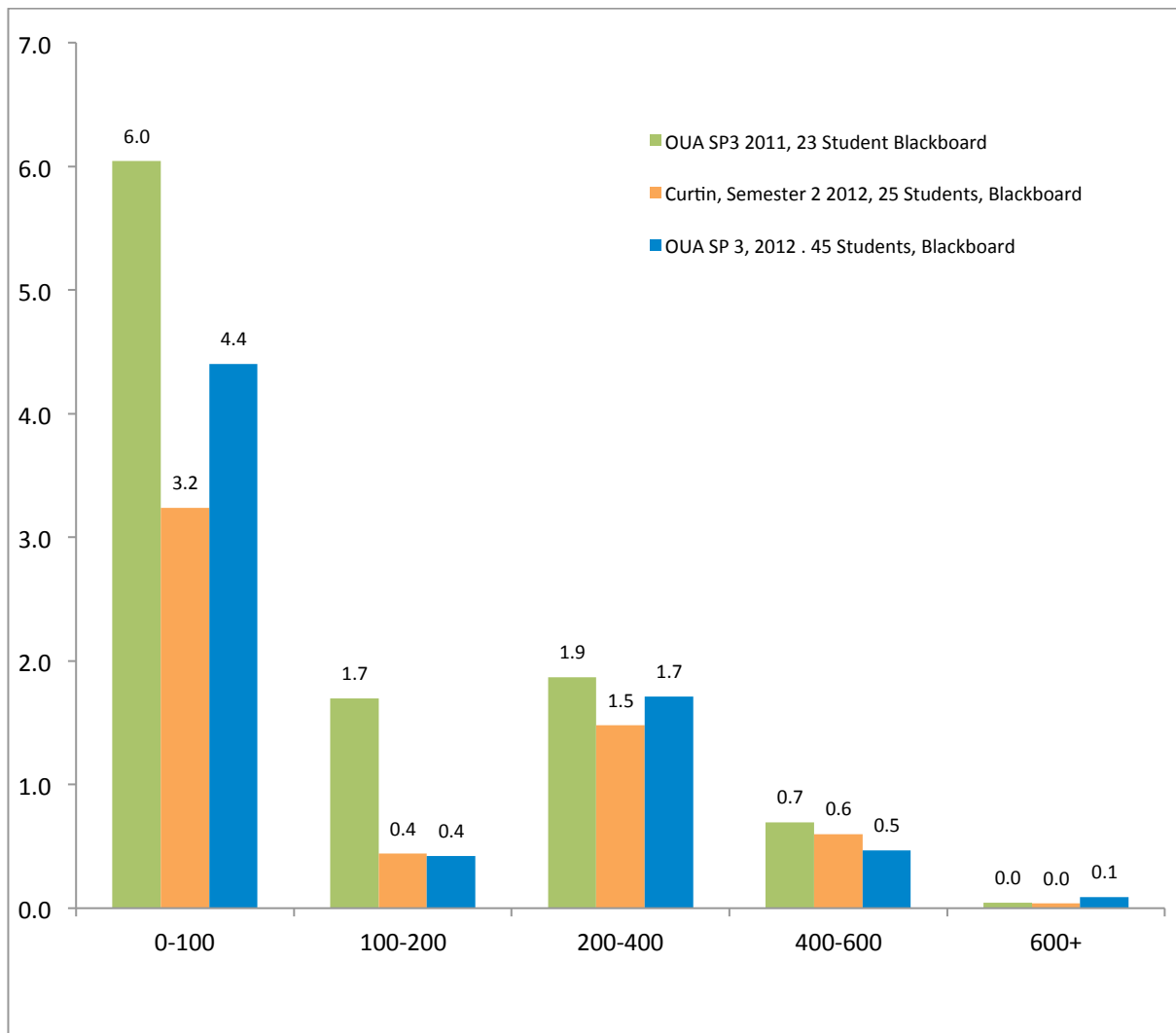


Figure 8. *Blackboard activity—posts per student by length of post*

The posts on Facebook have far more activity and the pattern of post length changes, with the number of posts with fewer than 100 words increasing as a percentage.

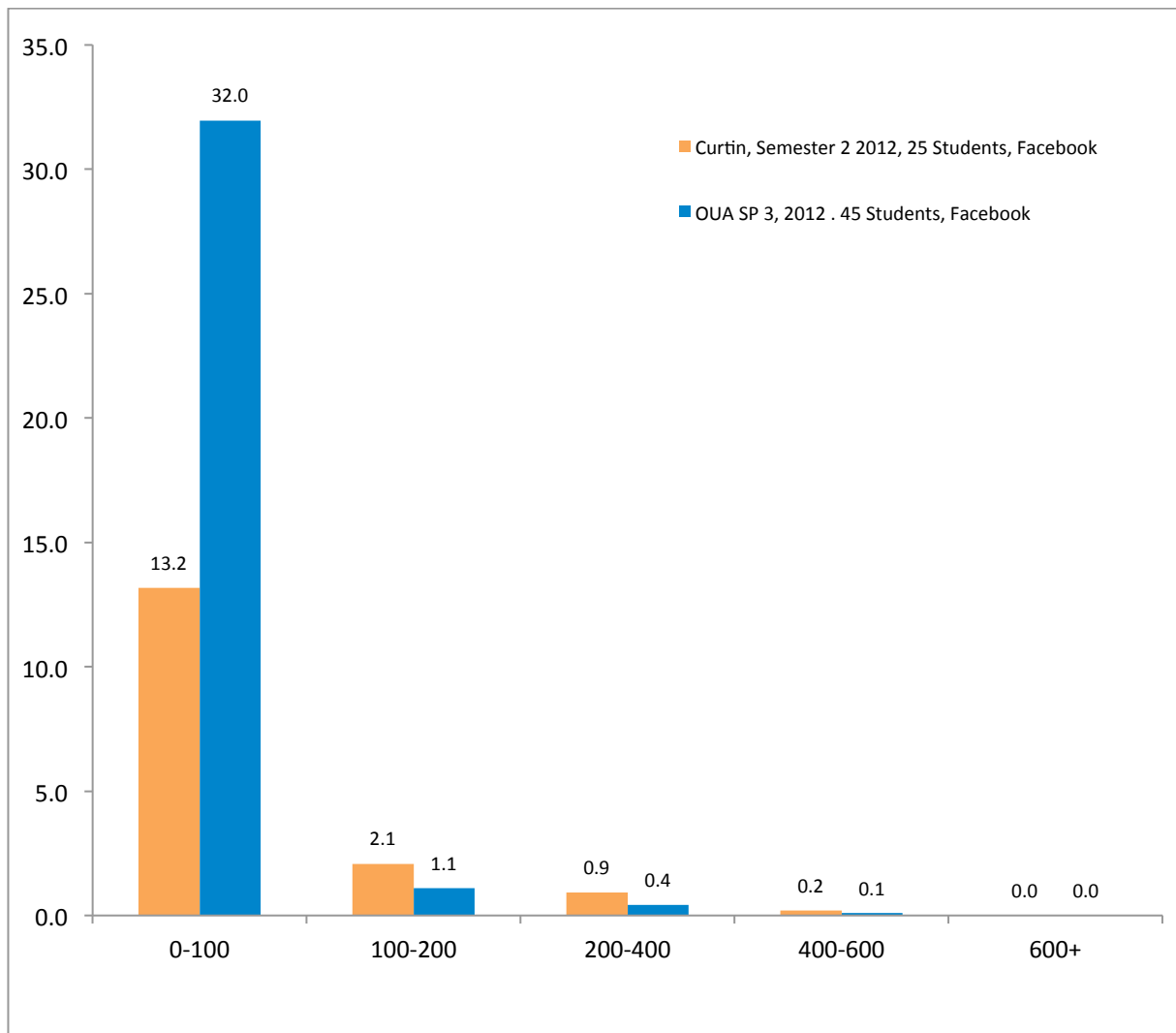


Figure 9. Facebook activity—posts per student by length of post

Again combining the two forums shows how the length of student posts changed overall with the addition of Facebook.

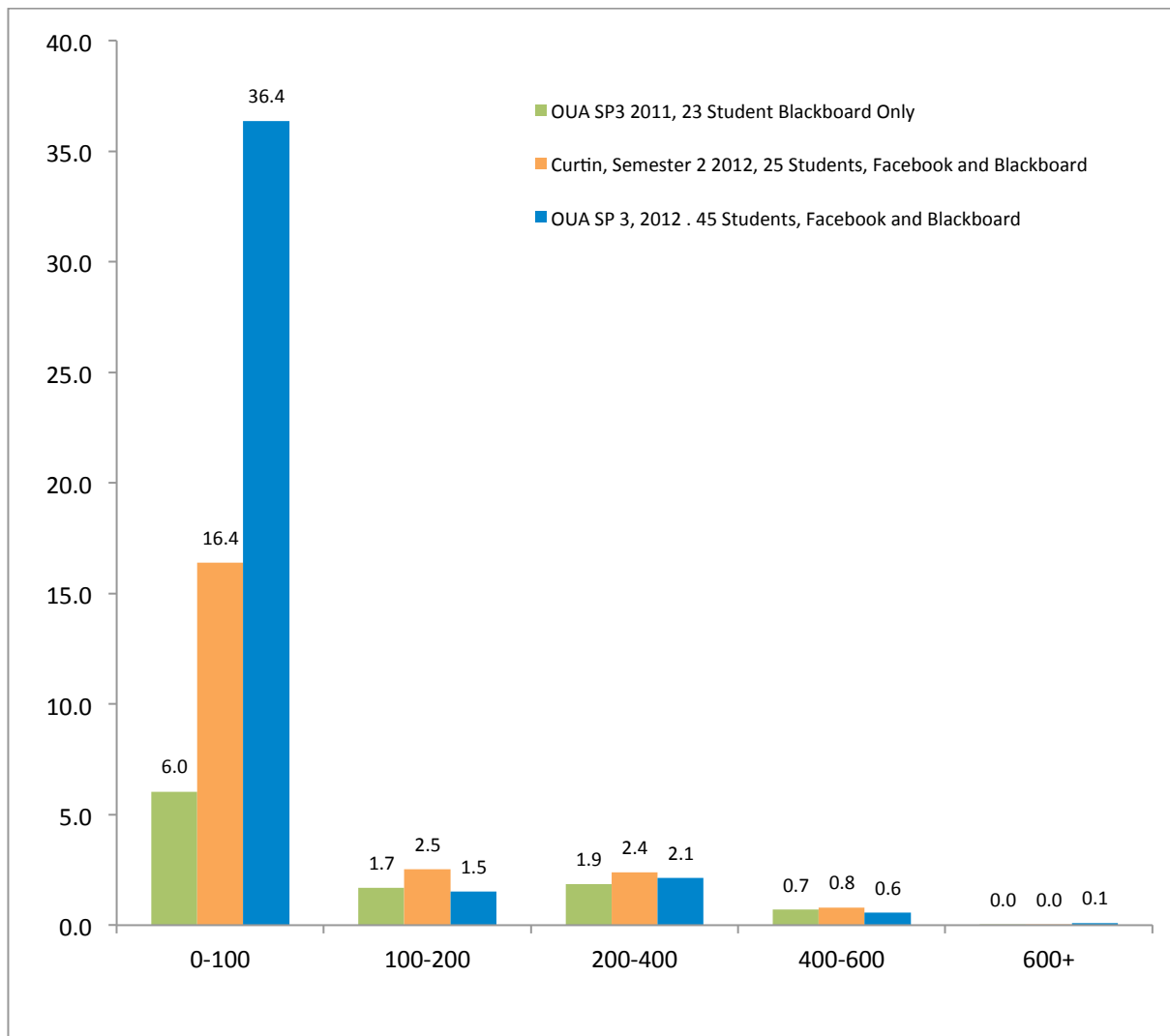


Figure 10. *Blackboard and Facebook activity—posts per student by length of post*

While the number of posts with fewer than 100 words is increased dramatically, and this seems to account for much of the growth in student activity, the number of longer posts, on a per student basis, is not affected significantly, although some of the posts in the 101–200 word length seemed to migrate from Blackboard to Facebook once that option was available. While there are a lot more short posts, and some of these are linked to posts that link to material elsewhere on the Internet, the number of longer, and presumably more in-depth posts is not reduced with the introduction of an additional Facebook forum.

Discussion

The most notable feature of the data collected is the greater level of student activity, both in absolute volume, and also its more even distribution across the period of study. This would seem to point to a greater level of student engagement. This may be, in part, a function of the greater ease of accessibility to Facebook discussion. Schroeder and Greenbowe (2009) postulate “a major reason for the difference in the use between Facebook and WebCT could be that students were already accessing Facebook for personal use and checked in on the group when they were accessing Facebook for other reasons” (p. 4) and this may have also played a role in these observations. This may, as noted above, relate to the increased integration of Facebook into mobile devices, as well as some of the limitations of easy access to traditional learning management systems. Prensky (2007) observes this as a feature of using a forum for discussion in which students were already highly literate in its use. As Prensky further notes, students want social networks to be included as part of their education for this very reason. Daric (2014) observes that traditional understanding of synchronous and asynchronous communication can start to break down and change in different types

of online communication. Daric's study of corporate instant messaging shared many of the features of the Facebook group. Facebook, being "always on", enables a co-presence in a way Blackboard does not, even more so when the social network is accessed by staff and students on mobile devices. Rather than having to log into the learning management system to access the discussion board to see if there are any posts to respond to, both students and staff have the information pushed out, either to Facebook as they are using it, or potentially to a mobile device they are carrying with them.

The increasing ratio of student-to-staff activity also seems to point to a greater level of independent student engagement when using Facebook. Bateman and Willems (2012) found that Facebook promoted peer teaching, and these results would seem consistent with their observation. It also indicates that while staff, like students, have greater opportunity to access the Facebook discussion compared to Blackboard, it does not necessarily follow that they are spending more time or resources in facilitating the unit with the addition of a Facebook component. While there were nearly twice as many staff posts in the Curtin blended learning instance than in the OUA instance that used only Blackboard, this did come off a low base, and may have been partly due to posts being copied into both forums. The relatively modest increase in staff activity as the student numbers increased in the final instance of the unit seems to indicate that the addition of a Facebook discussion forum can scale-up without drastically increasing the level of staff participation. However Heijstra and Rafnsdottir (2010) caution that the addition of online learning, while providing teaching staff with more flexibility, can also lead to a proliferation of work. Facebook can potentially exacerbate a trend they observed, that "the combination of flexibility and Internet use make it increasingly difficult for academics to disengage themselves from work" (p. 158) as educators' professional commitments follow them on to their formerly private online social networks.

The other significant difference that the addition of Facebook made to unit discussions was the content and nature of the discussion. In the Blackboard-only discussion there were virtually no learning links, where additional material was brought to unit discussion. However this type of post becomes more pronounced in the blended learning example with Facebook, and even more so when Facebook is used for the fully online instance of the unit. This would seem consistent with Bateman and Willems (2012) finding that Facebook promotes resource sharing. Interestingly the use of learning links posts increased from both students and staff.

A similar growth can also be seen in discussions around the unit's assessment, and to a lesser extent in relation to administrative questions. While there is some staff activity, the majority of posting is student activity, again pointing to students helping answer the questions of their peers. These two features of greater student engagement, and a discussion that moves beyond just the set unit material, points to Facebook enabling a more authentic community of learning, as suggested by Bateman and Willems (2012).

The other notable feature of these observations is the lack of impact that the introduction of Facebook seems to have on the level of student activity on Blackboard. There was some concern at the inception of this project that the availability of Facebook would have an impact on the level of engagement with the Blackboard discussion for students and that this would disadvantage those students who were unable to access the unit's Facebook group. However the level of activity on Blackboard is relatively constant across the three instances of the unit. When compared on a weekly-posts-per-student basis, there was very little difference beyond the expected slightly lower level of engagement from the Curtin students engaged in blended learning.

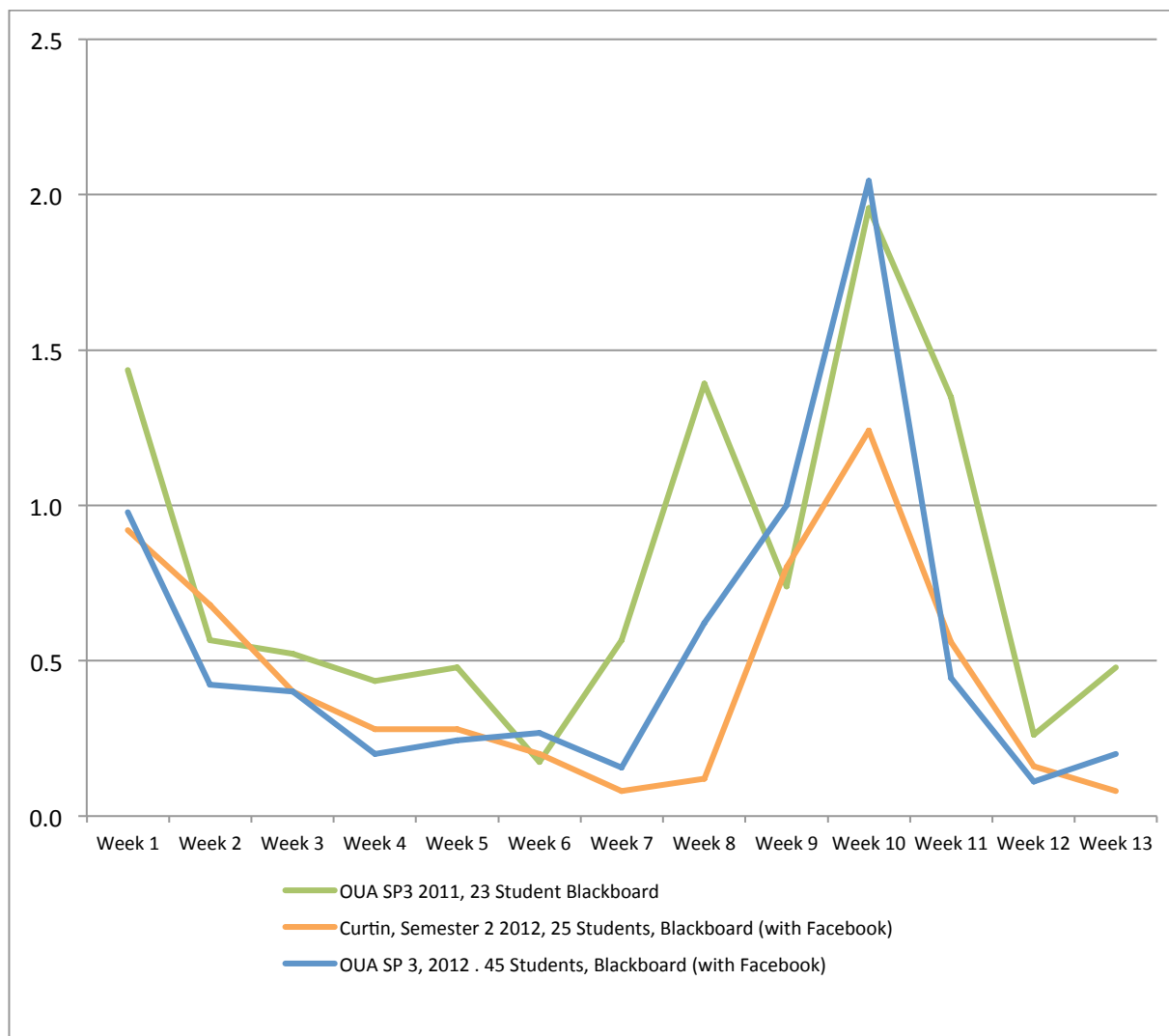


Figure 11. *Blackboard—posts per student per week*

The relatively constant Blackboard participation levels across the three instances of the unit would seem to indicate that as well as increasing the level of student engagement and activity, the Facebook group did not reduce the level of activity on Blackboard's discussion group. It generated new activity that was not previously present without "cannibalizing" any of the more traditional online discussion. This points to the value of using Facebook in conjunction with the more traditional LMS discussions, rather than as a replacement for those forums.

Limitations

The first caution in relation to this study is that while it examined three instances of the same unit there were differences. Curtin students in a blended learning environment have traditionally been less engaged online than their OUA counterparts. The two different OUA groups that would have made a more ideal comparison had close to 100 percent more students in the second group, and this difference in numbers may have affected the level of activity within each group. While there was that variation, each of the groups was relatively small in the context of university courses, and it is unclear how well this discussion process would scale into larger classes before it became unworkable, or what impact it would have for smaller class numbers. This case study only consists of one course taught through one university, and is a relatively small sample. As such, some caution must be taken when relating these findings to wider trends.

Each group consisted of students studying in a final year unit in the Internet Communications degree. This group may have a higher level of literacy and experience with online communications that might

produce a different outcome than if the same study was conducted on a different cohort. However, where applicable, the results are largely consistent with Schroeder and Greenbowe's (2009) study of undergraduate students in an organic chemistry course.

There were also some issues, relating to experimental design. The division of posts into different categories was an inexact process. For example, students' introduction of themselves to the class was not the same type of off-topic conversation as one about football results. Similarly a student posting a comment such as "I agree" may not be adding substance to the category of the post on which they were commenting. In retrospect, it would have been good to break down the examination of the size of the posts, particularly in the 0–100 category. There was considerable variation in the posts in this category, and it would have been illustrative to explore this category in more detail—this would be a valuable area for future research.

A final caveat for this research is Facebook and LMS discussion boards do not provide a full picture of student communications. While, as noted above, there was limited communications through Twitter, it would have been illustrative to look at the impact of the addition of Facebook on things such as email communication. However, Facebook was also used heavily as a communications medium—on a number of occasions students would post to Facebook and tag the teaching staff to let them know that they had sent them an email, which would inevitably result in a reply post to Facebook from staff indicating a reply to the email had been sent.

Conclusion

In traditional classrooms teacher talking time can be longer than student talking time (McBride & Wahl, 2005). This case is not experienced on Facebook. On the contrary, it is student centered. As lesson materials are saved on Facebook lesson page, students can access to information and answers to the previous questions by classmates do not prevent them from re-asking questions. In this respect Facebook brings many educational advantages.

Kayri and Çakir (2010, p.56)

In this study it has been shown that the addition of Facebook as a discussion forum to an existing online and blended learning unit greatly increases the level of student activity, both in absolute terms, but also sustained over the full study period, rather than being limited to a few points of peak activity followed by relative inactivity. It does this while not significantly altering the level of engagement that students have with the discussion board embedded in the existing learning management system. While this increased student activity results in a large number of shorter posts, this does not reduce the number of longer and presumably more detailed posts that are produced by participants.

In addition, the nature of the conversation changes, as well as engaging with the set course material, students and staff also start to provide additional learning material and links to resources associated with the topics being covered during the semester. This seems consistent with much of the literature related to the use of Facebook in higher education, which points to students engaging in peer learning and forming stronger communities of learning around the social network. Rivera (2010) observes that online social networks "are generally perceived as a communication space, and being embedded in an information-rich environment of the Internet, it offers opportunities for users to create and construct knowledge" (p. 209).

This study of Curtin and OUA students indicates that Facebook as a tool for learning and teaching, following Rivera's observations, has the potential to more closely realize Licklider and Taylor's (1968) vision of interacting with the richness of living information.

References

- Allen, I. E., & Seaman, J. (2011). *Going the Distance: Online Education in the United States 2011*. Retrieved from the Sloan Consortium web site: <http://www.onlinelearningsurvey.com/reports/goingthedistance.pdf>
- Allen, I. E., & Seaman, J. (2010). *Class Differences: Online Education in the United States 2010*. Retrieved from the Sloan Consortium web site: http://sloanconsortium.org/sites/default/files/class_differences.pdf
- Allen, M. (2012). An education in Facebook. *Digital Culture and Education*, 4(3), 213-225. Retrieved from http://www.digitalcultureandeducation.com/cms/wp-content/uploads/2012/12/dce1077_allen_2012.pdf
- Baran, B. (2010). Facebook as a formal instruction environment. *British Journal of Education Technology*, 41(6), doi:10.1111/j.1467-8535.2010.01115.x
- Bateman, D., & Willems, J. (2012). Facing off: Facebook and higher education. In L. A. Wankel and C. Wankel (Eds.). *Misbehavior Online in Higher Education: Cutting-edge Technologies in Higher Education* (Vol. 5, pp. 53-79). doi:10.1108/S2044-9968(2012)000005007
- Best, G., Hajzler, D., Pancini, G., & Tout, D. (2011). Being 'dumped' from Facebook: Negotiating issues of boundaries and identity in an online social networking space. *Journal of Peer Learning*, 4(1), 24-36. Retrieved from <http://ro.uow.edu.au/ajpl/vol4/iss1/5>
- Bicen, H., & Cavus, N. (2011). Social network sites usage habits of undergraduate students: case study of Facebook. *Procedia – Social and Behavioral Sciences*, 28, 943-947. doi:10.1016/j.sbspro.2011.11.174
- Chamberlin, L., & Lehmann, K. (2011). Twitter in higher education. In C. Wankel (ed.) *Educating Educators with Social Media: Cutting-edge Technologies in Higher Education*, (Vol. 1, pp. 375-391). doi:10.1108/S2044-9968(2011)0000001021
- Chang, W. L., & Lee, C. Y. (2013). Trust as a learning facilitator that affects students' learning performance in the Facebook community: An investigation in a business planning writing course. *Computers and Education*, 62, 320-327. doi: 10.1016/j.compedu.2012.11.007
- Cheung, C. M. K., Chiu, P. Y., & Lee, M. K. O. (2011). Online social networks: Why do students use Facebook. *Computers in Human Behavior*, 27(4), 1337-1343. doi:10.1016/j.chb.2010.07.028
- Cluett, L. (2010). Online social networking for outreach, engagement and community: The UWA Student's Facebook page. In *Educating for sustainability. Proceedings of the 19th Annual Teaching Learning Forum*, Perth, AU. Retrieved from http://otl.curtin.edu.au/professional_development/conferences/tlf/tlf2010/refereed/cluett.html
- Constine, J. (2013). Facebook's Growth Since IPO in 12 Big Numbers (Web log post). Retrieved from <http://techcrunch.com/2013/05/17/facebook-growth/>
- Curtin University (2013). *Course Handbook 2013*. Retrieved from <http://handbook.curtin.edu.au/units/30/301483.html>
- Dabbagh, N., & Kitsantas, A. (2012). Personal learning environments, social media, and self-regulated learning: A natural formula for connecting formal and informal learning. *The Internet and Higher Education*, 15(1), 3-8. doi:10.1016/j.iheduc.2011.06.002
- Darics, E. (2014). The blurring boundaries between synchronicity and asynchronicity: New communicative situations in work related instant messaging. *Journal of Business Communication*.
- Ellis, K. (2011). Embracing learners with disability: Web 2.0, access and insight. *Telecommunications Journal of Australia*, 61(2). Retrieved from <http://www.tja.org.au/index.php/tja/article/view/199/375>
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students' use of online social networking sites. *Journal of Computer-Mediated Communication*, 12(4). 1143-1168, doi:10.1111/j.1083-6101.2007.00367.x
- Gao, F., Zhang, T., & Franklin, T. (2013). Designing asynchronous online discussion environments: Recent progress and possible future directions. *British Journal of Educational Technology*, 44(3), 469-483. doi:10.1111/j.1467-8535.2012.01330.x
- Grey, K., Annabell, L., & Kennedy, G. (2010). Medical students' use of Facebook to support learning: Insights from four case studies. *Medical Teacher*, 32(12), 971-976. doi: 10.3109/0142159X.2010.497826

- Grosbeck G., Bran, R., & Tiru, L. (2011). Dear teacher, what should I write on my wall? A case study on academic uses of Facebook. *Procedia - Social and Behavioral Sciences*, 15, 1425-1430. doi:10.1016/j.sbspro.2011.03.306
- Haverback H. R. (2009). Facebook: Uncharted territory in a reading education classroom. *Reading Today*, 27(2), 34..
- Heijstra, T. M., & Rafnsdottir, G. L. (2010). The Internet and academics' workload and work-family balance. *Internet and Higher Education*, 13(3), 158-163. doi:10.1016/j.iheduc.2010.03.004
- Hew, K. F., & Cheung, W. S. (2012). Use of Facebook: A case study of Singapore students' experience. *Asia Pacific Journal of Education*, 32(2), 181-196. doi:10.1080/02188791.2012.685560
- Junco, R., (2013). Comparing actual and self-reported measures of Facebook use. *Computers in Human Behavior*, 29(3), 626-631. doi:10.1016/j.chb.2012.11.007
- Kabilan, M. K., Ahmad, N., & Abidin, M. J. Z. (2010). Facebook: An online environment of learning of English in institutions of higher education? *The Internet and Higher Education*, 13(4), 179-187. doi:10.1016/j.iheduc.2010.07.003
- Karl, K. A., & Peluchette, J. V. (2011). "Friending" Professors, Parents and Bosses: A Facebook Connection Conundrum. *Journal of Education for Business*, 86(4), 214-222. doi:10.1080/08832323.2010.507638
- Kayri, M., & Çakir, Ö. (2010). An Applied Study on Educational Use Of Facebook as a Web 2.0 Tool: The Sample Lesson Of Computer Networks And Communication. *International Journal of Computer Science & Information Technology*, 2(4), 48-58. doi:10.5121/ijcsit.2010.2405
- Lenartz, A. J., (2012). Establishing guidelines for the use of social media in higher education. In L. A. Wankel and C. Wankel (Eds.). *Misbehavior Online in Higher education: Cutting-edge Technologies in Higher Education*, Volume 5, Emerald Group Publishing Limited, 333-353. doi:[10.1108/S2044-9968\(2012\)0000005018](https://doi.org/10.1108/S2044-9968(2012)0000005018)
- Licklider, J. C. R., & Taylor, R. W. (1968, April). The computer as a communication device. *Science and Technology*, 20-41. Retrieved from <http://memex.org/licklider.pdf>
- Mazman, S. G., & Usluel, Y. K. (2010). Modeling educational usage of Facebook. *Computers and Education*, 55(2), 444-453. doi:[10.1016/j.compedu.2010.02.008](https://doi.org/10.1016/j.compedu.2010.02.008)
- Madge, C., Meek, J., Wellens, J., & Hooley, T. (2009). Facebook, social integration and informal learning at university: 'It is more for socialising and talking to friends about work than for actually doing work'. *Learning, Media and Technology*, 34(2), 141-155. doi:10.1080/17439880902923606
- McBride, M. C., & Wahl, S. T. (2005). "To say or not to say:" Teachers' management of privacy boundaries in the classroom. *Texas Speech Communications Journal*, 30(1), 8-22. As cited in Kayri, M., & Çakir, Ö. (2010). An applied study on educational use Of Facebook as a web 2.0 tool: The sample lesson of computer networks and communication. *International Journal of Computer Science & Information Technology* 2(4), 48-58. doi:10.5121/ijcsit.2010.2405
- McCarthy, J. (2010). Blended learning environments: Using social networking sites to enhance the first year experience. *Australasian Journal of Educational Technology*, 26(6), 729-740. Retrieved from <http://www.ascilite.org.au/ajet/ajet26/mccarthy.pdf>
- McLoughlin, C., & Lee, M. J. W. (2010). Personalised and self-regulated learning in the Web 2.0 era: International exemplars of innovative pedagogy using social software. *Australasian Journal of Educational Technology*, 26(1), 28-43. Retrieved from <http://www.ascilite.org.au/ajet/ajet26/mcloughlin.pdf>
- Palloff, R. M., & Pratt, K. (2009). Web 2.0 technologies and community building online. Paper presented at the 25th Annual Conference on Distance Teaching & Learning. Madison, Wisconsin, 4-7 August. Retrieved from http://www.uwex.edu/disted/conference/Resource_library/proceedings/09_20002.pdf
- Prensky, M. (2007). How to teach with technology: Keeping both teachers and students comfortable in an era of exponential change. *Emerging Technologies for Learning*, 2. Retrieved from http://eit159.googlepages.com/emerging_technologies_prensky.pdf

- Ranieri, M., Manca, S., & Fini A. (2012). Why (and how) do teachers engage in social networks? An exploratory study of professional use of Facebook and its implications for lifelong learning. *British Journal of Educational Technology*, 43(5), 754-769. doi:10.1111/j.1467-8535.2012.01356.x
- Rivera, R. C. (2010). Instruction over online social networks: Where does the platform lead? Paper presented at The International Conference on Technology in Education, Mumbai 1-3 July. doi:[10.1109/T4E.2010.5550096](https://doi.org/10.1109/T4E.2010.5550096)
- Roblyer, M. D., McDaniel, M., Webb, M., Herman, J., & Witty, J. V. (2010). Findings on Facebook in higher education: A comparison of college faculty and student uses and perceptions of social networking sites. *The Internet and Higher Education*, 13(3), 134-140. doi:10.1016/j.iheduc.2010.03.002
- Schroeder, J., & Greenbowe, T. J. (2009). The chemistry of Facebook: Using social networking to create an online community for the organic chemistry. *Innovate: Journal of Online Education*, 5(4), 1-7. Retrieved from http://www.innovateonline.info/pdf/vol5_issue4/The_Chemistry_of_Facebook-Using_Social_Networking_to_Create_an_Online_Community_for_the_Organic_Chemistry_Laboratory.pdf
- Selwyn, N. (2009). Faceworking: exploring students' education-related use of Facebook. *Learning Media and Technology*, 34(2), 157-174. doi:10.1080/17439880902923622
- Smith, S. D., & Caruso, J. B. (2010). *The ECAR study of undergraduate students and information technology 2010*. EDUCASE Centre for Applied Research (ECAR). Retrieved from <http://net.educause.edu/ir/library/pdf/ers1006/rs/ers1006w.pdf>
- Social Bakers (2013). *Check Facebook*. Retrieved from <http://www.checkfacebook.com/>
- Stern, D. M., & Willits, M. D. D. (2011). Social media killed the LMS: Re-imagining the traditional learning management system In the age of blogs and online social networks. in C. Wankel (Ed.). *Educating Educators with Social Media: Cutting Edge Technologies in Higher Education Volume 1*, Bingley, UK: Emerald Publishing Limited, 347-373. doi:[10.1108/S2044-9968\(2011\)0000001020](https://doi.org/10.1108/S2044-9968(2011)0000001020)
- Teclhaimanot, B., & Hickman, T. (2011). Student-Teacher Interaction on Facebook: What students find appropriate. *TechTrends*, 55(3), 19-30. doi: 10.1007/s11528-011-0494
- Thompson, S. H., & Loughheed, E. (2012). Frazzled by facebook? An exploratory study of gender differences in social network communications among undergraduate men and women. *College Student Journal*, 46(1) 88-98.
- Tiryakioglu, F., & Erzurum, F. (2011). Use of social networks as an educational tool. *Contemporary Educational Technology*, 2(2), 135-150. Retrieved from <http://www.cedtech.net/articles/22/223.pdf>
- Wodzicki, K., Schwämmlein, E., & Moskaliuk, J. (2012). "Actually I want to learn": Study-related knowledge exchange on social networking sites. *Internet and Higher Education*, 15(1), 9-14, doi:10.1016/j.iheduc.2011.05.008
- Wright, F., White, D., Hirst, T., & Cann, A. (2013). Visitors and residents: Mapping student attitudes to academic use of social networks. *Learning, Media and Technology*, 39(1), 126-141. doi:10.1080/17439884.2013.777077



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