



“I see smart people!”: Using Facebook to supplement cognitive and affective learning in the university mass lecture



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ABSTRACT

Mass lecture courses are a mainstay in university instruction despite their limitations regarding student engagement and resultant learning outcomes. Out-of-class communications and learning management systems have been developed to address these limitations, but the former is resource-intensive and the latter is often viewed as an administrative rather than pedagogical aid. Facebook groups have proven to be useful and persistent spaces for connecting individuals around innumerable topics of interest. In this study, a course-specific Facebook group was created for an introductory mass media course at a large mid-Atlantic university to serve as a supplemental (and voluntary) space for course content discussions. End-of-the-semester grades of the Facebook group users were significantly higher than the non-users, $t(319) = 4.71, p < .001$. In terms of affective learning, an analysis of the student responses indicated that students generally felt positively about being a part of the Facebook group. Thematic analysis of the Facebook posts indicated that students mainly used this space to discuss exam-related matters. We discuss potential reasons for this outcome, and implications of current research for future research and practice.

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1. Introduction

Hollywood portrayals of the college classroom often invoke images of the stately professor standing behind a lectern “engaging” students in a crowded and chalky classroom theater. Despite its wide acceptance, the mass lecture – while firmly rooted in the academy (Murphy, 1998) – is known to present many obstacles to instructors and students due largely to the immense size of the learning environment. Mass lectures favor efficiency of communication over careful attention to course content (Ware, 2011). In mass lectures, traditional instructional methods are favored that emphasize one-way communication between instructor and student, minimizing (and potentially marginalizing) the participation of the latter (Tyma, 2011). The colossal size of the mass lecture combined with the passive nature of learning encouraged in such an environment can make it difficult for all students to decode messages as they were intended (Geske, 1992; Jacques, 1997).

In cases where one instructor is responsible for hundreds of students, creating personal connections between the teacher and the students becomes hard to achieve (Akbari, Böhm, & Schroeder, 2010). As depicted by early research, establishing rapport between students and teachers leads to increases in student learning and classroom

climate (Mazer, Murphy, & Simonds, 2007). Due to practical reasons, instructors in mass-lecture halls prefer one-way delivery of knowledge, and therefore prefer a lecture format, which does not allow for opportunities to create rapport between students and the professors. In addition, student engagement during lectures is very low, because they assume the role of passive listeners (Murphy, 1998).

Due to limitations of mass lecture, many instructors have turned to out-of-class communications (OCC) to allow an additional means for instructors to communicate with and teaching students. Forms of OCC vary and include activities such as writing conferences, discussions during office hours, and extracurricular teacher–student tutorial sessions. While effective, these are resource-intensive activities that are limited in terms of their reach – for example, it would be nearly impossible for every student enrolled in a mass lecture to attend a tutorial session or a single professor's weekly office hours.

Facebook use is increasing among college students (Junco, 2012; Mazer et al., 2007). As an OCC tool, Facebook groups are persistent (virtual) spaces where students and instructors can post (and respond to) messages related to course content. Moreover, because college students already heavily use social-media networks, using Facebook groups as OCCs can potentially prove to be an effective addition to learning environments where student engagement suffers due to environmental factors (e.g., mass lecture), and connects teachers and students (Mazer et al., 2007).

In this study, we look at the impacts of using a Facebook group as an OCC in a mass lecture course. Early research showed that using

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Facebook during courses had positive impacts on student motivation, classroom climate, and student–faculty relationships (Mazer et al., 2007; Wang, Woo, Quek, Yang, & Liu, 2012). In the current research, we specifically investigate whether joining and participating in a Facebook group had any impacts on students' cognitive and affective learning outcomes. To this end, we investigated if there were differences, in terms of the learning outcomes, between a group of students who participated in a Facebook group and another group who preferred not to during a mass lecture course.

2. Literature review

2.1. The mass lecture format

The mass lecture has received criticism due to a variety of reasons, such as limiting the student-to-student and student-to-teacher interaction, increasing the amount of teacher-led instruction (Akbari et al., 2010; Ware, 2011), and changing assessment format from open-ended essays to standardized multiple-choice tests that often fail at measuring higher-order thinking skills (Klass, 2000; Murphy, 1998). Coupling these with recent research showing the benefits of small class-size on student learning (e.g., Finn & Achilles, 1999), and the importance of forming personal relationships between students and the teachers (Christophel, 1990; Frymier & Houser, 2000; Mazer et al., 2007), the case against such heavy reliance on mass lectures becomes stronger.

The main line of criticism on mass lectures is directed at the disadvantages caused by class size (as suggested by the term “mass”) and one-way delivery of knowledge from the instructors to the students (as suggested by the term “lecture”). Here, it might also be argued that the criticisms for the second reason (i.e., lecture) are caused by the first reason (i.e., mass), in that lectures are considered to be efficient ways of delivery information across large numbers of students (Chanock, 1999).

Research on class size has indicated that placed in smaller classrooms, students learn better (Finn & Achilles, 1999). This effect was especially true at the elementary and secondary classroom levels. This, however, does not mean that large classrooms do not have negative impacts on student learning and motivation at higher education levels. Research on the impact of class-size on students' grades or test scores in college classrooms found that there was a negative relationship between class size in students' performance in introductory and subsequent performance in intermediate economics courses (Raimondo, Esposito, & Greshenber, 1990). In another study, Kokkelenberg, Dillon, and Christy (2008) found that class size negatively affected students' grades, and was constant for various variables such as academic department, student ability, and gender. Similarly, in a study on the relationship between students' evaluations of their instructors and class size, Bedard and Kuhn (2008) found that there was a significantly negative correlation between class size and students' evaluations of their instructors' effectiveness. This effect was especially stronger for classes over 80 “where evaluations fall the fastest per additional student in a class” (p. 262).

The main teaching approach in mass lectures is instructor-driven lectures (as suggested by the name). Although some researchers argue that learning in mass lectures does not necessarily mean passive, and listening can be made active (e.g., Chanock, 1999), the major consensus is that practices conducive to effective learning are less likely to occur in large classrooms (Akbari et al., 2010; Hattie, 2005). For example, research (e.g., Hattie, 2005) indicates that in larger classrooms students are less on-task, they interact with each other and the teacher less, and the teachers get less chances to monitor student learning. In addition, where the number of students increases, creating personal relationships with the students becomes a very hard task for the teachers. Research on teacher immediacy (e.g., Christophel, 1990; Frymier & Houser, 2000; Mazer et al., 2007) indicated when students feel they

have established an interpersonal relationship with their teachers, their learning and motivation are positively impacted.

2.2. Using social media to address mass lecture limitations

Learning management systems have gained popularity in collegiate environments as programs that provide students with persistent access to course documents, grade books, and other course materials. However, students often perceive these systems as spaces for instruction (e.g., access lecture notes) or administration (e.g., check grades), rather than social spaces to connect with instructors and peers. Moreover, none of these spaces exist as natural parts of a student's own media ecology, requiring students to occupy yet another technology as part of an already-crowded digital landscape (Watkins, 2009).

By contrast, Facebook (founded in 2004) began as a social network for individuals associated with academic institutions. As of May 2013, Facebook had over one billion users around the world (Smith, 2012), and is extremely popular with college students: as many as 97% of college students have accounts, and they actively use those sites for nearly two hours daily (Junco, 2012; Smith & Caruso, 2010). Today's college students are what Prensky (2001) refer to as digital natives: individuals born into a technological age who are experts at using and adapting to technology for a variety of end goals, including a preference for communicating through technological devices. Facebook is free of cost, easy to use, and is readily accessible to students who own computers or phones with Internet access, and many incoming college students indeed have established Facebook accounts from high school and report few encumbrances using the technology (Bowman, Westerman, & Claus, 2012).

In the recent years, there has been an increase in the use of social networking sites (SNSs) by students and teachers (Pempek, Yermolayeva, & Calvert, 2009; Roblyer, McDaniel, Webb, Herman, & Witty, 2010). Recent research has shown that some of the concerns regarding the mass lecture (e.g., lack of interpersonal relationship between teacher and students) can be alleviated by creating connections between teachers and students through the SNSs (Mazer et al., 2007).

Encouraging students to use Facebook as part of class might seem strange in the face of research that has demonstrated that time spent using Facebook can hinder learning (Junco, 2012; Kirschner & Karpinski, 2010). However, these studies do not argue that Facebook itself is causing a negative impact on learning, but rather that Facebook can distract students from engaging their peers or studying course material.

In terms of work specifically aimed at the purposeful instructional use of Facebook, studies by Mazer et al. (2007) have found student motivation, affect learning, and classroom climate increased when teachers appropriately self-disclosed private information via Facebook, and the same study found that students reported teachers who disclosed high amounts of information on Facebook were perceived as more credible than teachers who disclosed low amounts of information. Focus group work (Tian, Yu, Vogel, & Kwow, 2011) demonstrates that Facebook is primarily seen as a social space by college students, yet they do see long-term investment into the platform as potentially beneficial to their academic success (Irwin, Ball, Desbrow, & Leveritt, 2012). Thus, there is evidence to suggest that students self-report Facebook as being a potentially beneficial tool to their academic success.

3. Purpose of the study

Despite the reports pointing to the positive outcomes of using Facebook in university courses, there are few empirical investigations demonstrating the potential effectiveness of a class-specific Facebook platform on academic achievement. Notably, we do not know whether using Facebook as an extension of a mass lecture university course has any benefits in terms of students' academic achievement (i.e., cognitive learning), as well as affective learning (i.e., dispositions toward the course environment). In this research, we look at the cognitive and

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