How media choice affects learner interactions in distance learning classes

Brian Thoms [a,*], Evren Eryilmaz [b]

[a] State University of New York, United States
[b] Bloomsburg University, United States

ARTICLE INFO

ABSTRACT

In this research we explore aspects of learning, social interaction and community across online learning, also known as distance learning, in higher education. We measure the impact of online social networking (OSN) software versus traditional learning management system (LMS) software. Guided by a theoretical model for how individuals learn and interact within online communities, we measure student perceptions of learning, social interaction and course community before and after our interventions. Survey instruments measure perceived learning, social interaction and community, which we further explore using social network analysis (SNA). Survey results identified that students experienced higher levels of perceived social interaction and course community and, overall, had higher levels of satisfaction with OSN software than those using LMS software. Along this line, SNA results corroborated that OSN software yielded a higher number of interactions, providing a more engaging learning experience.

1. Introduction

Current research estimates that 16% of all users participating in social networks and online communities are between the ages of 18–24 (Vivion, 2013). This population of users, referred to as the Net Generation, or digital natives, are users having grown up with computers and the Internet. It is estimated that 86% of digital natives participate in some form of online social networking (OSN), with some estimates as high as 98% (Jenks, 2011; Oblinger & Oblinger, 2005; StatisticBrain, 2012; Williamson, 2007) Tangentially, the U.S. Census Bureau (2009) estimates approximately 20 million students enrolled in colleges and universities across the United States. Of this population, 12 million, or 60%, are traditionally aged college students, between the ages of 18–24. In other words, the majority are digital natives.

With the widespread adoption of the Internet across all industries, colleges and universities have looked to Internet software to facilitate learning and course management. With an adoption rate above 96%, learning management system (LMS) software continues to play an increased role in how course instructors deliver and manage course content (MDR, 2003). Additionally, LMS software is being used as the primary software to support distance education programs. Consequently, as institutions begin to offer more distance learning opportunities to students, we deem it important to reinvestigate the pedagogical merits of LMS software design. As one alternative, we propose OSN software, which is constantly evolving to match the skills and needs of digital natives.

In this research we introduce customized OSN software as the primary course learning environment and compare its affordances against our university's LMS platform. Our primary reason for using OSN software over LMS software stems from our epistemic belief that learning in higher education is a social process, where learning is facilitated through the exchange of ideas and shared interests as supported in research by Eryilmaz, Van der Pol, Ryan, Clark, and Mary (2013), Roschelle (1992) and Suthers (2006). As such, we assert that the affordances offered by OSN software, particularly within asynchronous online discussions (AOD), are better suited for distance education than those provided across LMS software. We measure our interventions through survey research and a social network analysis (SNA) to discover how OSN software offers students a more vibrant learning community; one that fosters higher levels of interaction and course community.

* Corresponding author.
E-mail addresses: brian@brianthoms.com (B. Thoms), evreneryilmaz@yahoo.com (E. Eryilmaz).

2. Background

2.1. Distance education

Distance education can refer to any form of learning where individuals are not physically present in a traditional setting, such as a classroom. This form of learning offers many advantages over traditional learning, providing individuals with the ability to learn at their own pace and in their own space. Additionally, research supports this form of learning. For example, Quan-Haase (2005) shows that online learning environments provide a valid form of learning and offers many different methods of interaction. Further research asserts that online interactions and virtual communication correspond in some fashion to real-life communication, complementing classroom interactions (Redfern & Naughton, 2002; Rhode, Reinecke, Pape, & Janneck, 2004). In Stacey (2002), it was demonstrated that a higher quality of electronic communication helps to engage students and aid in learning new course material.

Yet, given these findings and the fact that overall trends are rising, distance education continues to find its back against the wall and numerous opponents persist. Research by the Pew Research Center found that while 77% of college presidents surveyed reported that their institutions offered online courses, only 50% agreed that these courses were at the same level as traditional classroom courses (Parker, Lenhart, & Moore, 2011). Additionally, Power & Vaughn (2008) and followed up in Power (2008), argue that today's learning environments are not meeting the needs of students, faculty and administrators and that other models of online learning must be developed to better meet the needs of all concerned. In this respect, we agree, and present a new perspective for distance learning environments.

2.2. Learning management system (LMS) software

For today's distance learners, the majority of course activity takes place in browser-based environments, where students and instructors are provided institutional access to a dedicated learning environment. The predominant online platform, common across academic institutions, is LMS software. Conservative estimates place LMS adoption among U.S.-based colleges and universities above 90% (EDUCAUSE, 2009; MDR, 2003). This adoption considers a range of available LMS software, from open-source platforms such as Moodle and Sakai, to closed source systems, such as Angel and Blackboard.

Discussed in more detail in the section, LMS Software Configuration, LMS software provides learners with a comprehensive environment for communicating with instructors, submitting assignments, reviewing course objectives, downloading course material, participating in course discussions and viewing course progress. However, outside of basic discussion forums and email, LMS software provides limited opportunities for peer-to-peer interaction, which seems contrary to extant research emphasizing the importance of interaction and dialog in productive learning (Cook, 2002; Dehler, Bodemer, Buder, & Hesse, 2011; Eryilmaz, Chiu, Thoms, Mary, & Kim, 2014; Nicol, Minty, & Sinclair, 2003; Phielix, Prins, Kirschner, Erkens, & Jaspers, 2011; Sorenson & Takle, 2002). In fact, scholars have long asserted that interaction between students positively contributes to learning (Laurillard, 1993), (Ramsden, 1992). Ideally, learning is not static, but is a creative process comprised of exposing one's conceptual understandings to one's peers, exploring different learning perspectives and discovering shared understandings. And this approach to learning, as identified in So and Brush (2008), yields a more positive and prominent influence on a student's learning satisfaction.

Traditional LMS software can also hamper personal profile development; elements that can be essential in building peer trust and establishing social presence within an online environment. In research by Deng and Tavares (2013) comparing classroom interaction across Moodle and Facebook, the interactions found across Moodle were formal and instructor-controlled, and not an ideal environment for self-expression, content sharing or student interaction. It was only when Moodle was enhanced through OSN software, as later witnessed in Livingstone and Kemp (2008) when they integrated Moodle with Second Life, a 3D virtual world, that high levels of social presence were achieved.

It should be included that LMS platforms are beginning to adapt and introduce social software components, yet these environments are still falling short in replicating the social networking experiences digital natives are comfortable using. And until these components become pervasive, LMS software will be seen as institutional resource with the primary objective of facilitating course management as purported in Thoms, Garrett, and Ryan (2009). As an alternative, Thoms et al. introduced OSN software as a viable substitute to LMS software, which, they argue, creates a greater sense of ownership and control over their environment, while also making it easier to pursue social and scholastic ties with their peers. This is particularly important for distance learners, who do not benefit from the face-to-face classroom interactions that take place within traditional campus settings and instead rely on online technologies for course-based interaction.

2.3. Online social networking (OSN) software

According to Palloff and Pratt (1999), an important feature of the learning process is collaborative interaction, including interaction between teachers and learners, which can also serve to motivate learners. Additionally, Khalifa and Lam (2002) argue that e-learning systems need to provide more interactive capabilities to increase user satisfaction. Research by Liaw, Huang, and Chen (2007) suggests that in order to promote mutual interaction, e-learning systems must consider not only cognitive and behavioral components but social components as well.

Further research asserts that successful learning is collaborative and social instead of isolated and competitive (Chickering & Ehrmann, 1996). Additionally, by helping users feel connected to a community and increasing their knowledge of other members in the community, OSN software can facilitate norms of reciprocity and trust and, therefore, create opportunities for collective action (Thoms, Garrett, Herrera, & Ryan, 2008; Valenzuela, Park, & Kee, 2009). As described in the field of captology, Fogg and Nass (1997) state that norms of reciprocity consider the idea that if the community provides a user with valuable resources, it is a user's responsibility contribute back to the community. Fogg and Nass further state that computing technologies can facilitate this by applying social dynamics to convey social presence and to persuade other members of the community. In an experiment performed in Hammond, Bithell, Jones, and Bidgood (2010) peer-interactions offered 'different perspectives', 'learning with others' and the 'opportunities to air concerns away from teaching staff' in