Impact of Online Discussions on Web Based Assessments

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ABSTRACT

The practice of including online discussion posts to traditional courses is increasing. Online discussions allow for active learning to occur as students express their ideas and respond to others. The time and thought provided by online discussion posts allows students to utilize higher level cognitive skills. Web-based assessments are another technology tool that instructors are including in their courses. This study examined the impact of online discussion posts on achievement of web-based assessments for an upper level undergraduate business and technology writing intensive course. Using a treatment group and a control group, student achievement scores for the online assessments were measured. Results indicate that assessed grades of the treatment groups were higher than the control group, however statistical significance was mixed among the web assessments. The results further illustrate the need for additional research into online discussions applied to web-based assessments.

KEYWORDS

Active Learning, Online Discussions, Student Achievement, Web Based Assessments, Writing Intensive Courses

INTRODUCTION

Online discussions are used as an educational tool for the sharing and collaborating of ideas within a digital format. Online discussions have numerous benefits including enhancing student learning (An, Shin, & Lim, 2009; Andresen, 2009; Cho & Tobias, 2016; Hew & Cheung, 2013; Hrastinski, 2008), facilitating social interaction (Andresen, 2009; Cho & Tobias, 2016; Kehrwald, 2008; Swan & Shih, 2005) improving critical literacy (Bowers-Campbell, 2011; Cho & Tobias, 2016; Forest & Kimmel, 2016), and developing a sense of a learning community (Swan & Shih, 2005). As such, today many instructors who teach face-to-face courses are also including online components such as discussion boards. Rovia and Jordan (2004) found that blended courses, which include face-to-face meetings and online components may prove more successful than traditional or online courses. Owston, York and Murtha (2013) found that the blended learning format is the preferred method for high achieving students. Online discussions allow for active learning to occur from students expressing their ideas electronically while providing more time for thought. Specifically, active learning "provides learners with interactive resources (with which they can engage) to assist their use or knowledge of specific things or concepts” (O’Donnell, Lawless, Sharp & Wade, 2015, p. 23). Online discussions foster active learning through increased participation in discussions because all students are required to participate unlike face to face discussions (Hara, Bonk and Angeli, 2000). Specifically, online discussions permit
students to partake in collective knowledge sharing (Cho & Tobias, 2016). Through the collaborative knowledge sharing and building processes, students may become reflective, critical thinkers, and content learners (Hew & Cheung, 2013).

Furthermore, online discussions have been found to be one of the most effective instructional tools utilized in the blended environment (Lim, Morris & Kupritz, 2007). Research has found the content of online discussion to be more in depth and causes students to utilize higher level cognitive skills (Hara et al., 2000). In a recent study by Forest and Kimmel (2016) regarding critical literacy performance in online discussions found online discussion to be helpful with critical literacy understanding. They suggest to better ensure student understanding of classroom materials with online discussions an assessment may be needed. Thus, the assessment will “help gauge students’ knowledge of critical literacy” (p. 293).

Currently, there has not been a study that has examined the impact of student online discussions upon assessments. Furthermore, many of the existing studies regarding online discussions have been based on correlation analyses and have been conducted without control and experimental groups (Cho & Tobias, 2016). This study seeks to examine the effects in which online student discussions have on web based assessments via control and treatment groups. The motivation is to improve student scores on web-based assessments through the implementation of online discussions. This work has practical implications for faculty using online discussions. The remainder of this paper is structured as follows: a brief review of online learning and web-based assessments, the methodology, results, conclusions and limitations.

**BACKGROUND**

**Online Learning with Online Discussion Boards**

Advances in technology and changes in society have resulted in new ways of learning. The purpose of online learning is to disseminate information to learners in a virtual format over distance (Joliffe, Ritter & Stevens, 2012). Online learning is any learning that is delivered to students via the internet, which provides ease of access, flexibility, and cost savings (Khan, 2001). Collaboration is another benefit online learning offers with tools such as blogs, wikis and online discussions. Online discussions allow students to post thoughts and comments about the class or other topics. Flexibility is a key benefit to online learning since students can post whenever it is convenient for them, but still allows for in depth discussion of course material (Blackboard Help, 2014). Online discussions also provide a means for students to collaboratively learn through the creation of a common body of knowledge, application of authentic tasks and reflecting upon content (Saadé & Huang, 2009).

There are various challenges that instructors face when utilizing online discussion boards and one of the main challenges is that of maintaining the presence of the instructor (MGH Institute of Health Professions, 2017). As students explore various topics throughout their discussions, it is important that the instructor make their presence known and participate in the process. However, there needs to be a balance in instructor participation so that the instructor does not overtake the discussion (Rovai, 2007). Mazzolini, & Maddison (2007) found that too many posts by instructors may cause students to post less and have shorter posts. Another challenge facing instructors is that of achieving student outcomes. Instructors need to be clear on the learning outcomes and provide students with content that meets these objectives (Shaw, 2015). The size of the class may also affect a discussion board; if a class is too small, students may find it difficult to make meaningful responses due to the limited number of posts. If a class is too large it may be difficult to read, respond and manage the large volume of posts (Woods & Bliss, 2016). Understanding the challenges an instructor faces when facilitating online discussions is important to recognize in order to ensure student participation, without student participation the discussion board will not be a successful learning tool (Rovai, 2007).

Online discussions are beneficial for students, but discussion boards can be extremely time consuming for instructors. Shaw (2014) suggests several techniques that can increase the quality of discussion boards and save the instructor time. An instructor should make the first post and make
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