Instructional Activities in a Discussion Board Forum of an e-Leaning Management System

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Abstract. This study was primarily interested in dynamic interactions between instructors and an e-learning Management System (Blackboard) with specific focus on the discussion board forum. We examined how instructors seek information to assess students' input in an e-learning discussion board forum and determined which pedagogical features need to be improved to facilitate instructional activities. The findings suggest that the ability to easily track and respond to students' post is the most important instructional activity to instructors while reading student posts and replying to students are the most frequent instructional activities. Interacting with students and facilitating group discussion are the most difficult instructional activities. Therefore, this study indicated that Blackboard discussion board designers may need to improve discussion board pedagogical features to make interaction with students and facilitating group discussion more convenient and accessible for instructors who must now forage for the information they need to assess student contributions.

Keywords: E-learning management system, Blackboard, discussion board, information foraging theory, instructional activities, pedagogical features.

1 Introduction

As learning management systems become more popular at higher education institutions, online discussion forums are being more widely used. Online discussion forums have found their way into traditional, face-to-face, hybrid and online courses. Learning management systems often facilitate different types of interaction. In the context of e-learning, Moore (1989) divided this interaction into three categories: (a) learner-instructor; (b) learner-learner; and (c) learner-content (as cited in Bouhnik & Marcus, 2006). A fourth category of interaction (Hillman, Willis, Gunawardena, 1994; Bouhnik & Marcus 2006), learner-system or student-system interaction, has been identified and refers to the technologies, platforms and applications individuals use to interact with instructors, fellow students and the content. According to Arbaugh and Benbunan-Fich (2007), "Learner-system interaction facilitates or constraints the quantity and quality of the other three types of interactions". Students and faculty are

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in agreement that the quality and quantity of interaction in a discussion board can increase their satisfaction in the course (Picciano, 2002). Instructor responsiveness is one of the most important elements to successfully achieve meaningful interaction in a distance-education course (Blignaut & Trollip, 2003).

2 Purpose of Study

The primary focus of this study was to reveal instructor-system interaction by investigating instructional activities within a discussion board forum in an e-learning management system (Blackboard). Learning activities entail complex processes of interactions, and the benefits of learning management systems, like Blackboard, can easily be lost if that complexity is not appreciated, understood, and dealt with in a satisfactory manner by users (Bouhnik & Marcus 2006). While investigating discussion board forums in online learning environments, great care needs to be exercised to ensure that the discussion board itself remains transparent and does not create a psychological or functional barrier to instructors. Thus, information Foraging theory (Pirolli & Card, 1999; Trepess, 2006) was applied to investigate how instructors perceive their instructional activities in a learning management system (e.g., Blackboard discussion forum) to determine their preferences and strategies to obtain valuable information needed for assessing students' input.

3 Method

3.1 Context

This study conducted an online survey and a follow-up interview using the same pool of participants at a Midwestern university. All participants were selected from a pool of faculty and graduate instructors in the College of Education. The online survey was distributed to faculty members and graduate instructors who had experience using the Blackboard discussion board in their online courses. Eighteen participants responded to the online survey and nine of them participated in follow-up interviews. All participants were actively using Blackboard discussion boards with experience ranging from less than six months to more than six years. Of the participants who indicated they checked the discussion board, 56% of them check the boards daily with 40% of those respondents checking the boards two to three times a day.

3.2 Procedures

Seven instructional activities in Blackboard discussion boards were proposed for participants to evaluate and discuss:

- Creating a forum in a discussion board
- Creating group discussions

- Facilitating group discussions
- Reading students' post
- Replying and interacting with students
- Viewing discussion board statistics
- Grading discussion board participation

The online survey was created in Qualtrics and sent out via email. The collected data was exported from Qualtrics for analysis. Interview participants were recruited through the distributed survey. Interview data were recorded and coded into main themes.

4 Results

4.1 What Instructional Activities in the Blackboard Discussion Board Are Important to Instructors?

Respondents reported that the ability to easily track student posts (83%) and respond to posts (78%) was ranked as the most important activity. Of particular interest to the researchers was the importance of the ease of grading students' posts. The researchers expected that the ease of tracking students' posts to be positively correlated with grading. The results indicated that tracking student posts goes beyond just grading and may be important for other aspects of teaching.

4.2 What Instructional Activities in the Blackboard Discussion Board Do Instructors Perform Most Often?

When asked which activity instructors performed most frequently, 33% indicated reading student posts. Replying to students, creating forums and facilitating group discussions were ranked immediately after that. Other activities such as viewing discussion board statistics and grading were not performed as often. This makes sense as discussions usually last for a week or more within a course.

4.3 What Instructional Activities Are Difficult for Instructors to Perform?

While using the Blackboard discussion board, 53% of the instructors stated that they experienced some difficulty. According to the results, replying and interacting with the students and facilitating group discussions were chosen as the most difficult tasks. This may have been a reflection of the students' participation and involvement in the discussion board did not meet instructors' expectations. As one participant stated, "It's hard to enforce 'norms' of behavior on some students" and another stated "It took several years to create a workable way to structure small group discussions." At this point, pedagogical features of the discussion board forum regarding instructor-student interaction were not satisfactory.

5 Conclusion

This study contributes to generalizable knowledge in the human-computer interaction field, particularly in e-learning instructor-system interaction. From the instructor's perspective, the convenience and accessibility of the online course delivery model of a discussion board forum guides and encourages students' questions, postings and dialogue (Harris & Sandor, 2007). The most frequent instructional activities performed by instructors were reading and replying to students' posts. This indicates that discussion board designers may need to improve pedagogical features to make reading and replying to students more convenient and accessible for instructors who must otherwise forage for the information needed to assess student contributions. Considering the utility of discussion boards, pedagogical usability (Nokelainen, 2006) should be assessed to promote instructors' experience in implementing instructional activities. The biggest issue facing instructors is how to encourage students to participate more in discussions and provide meaningful input, which supports other research findings (Cheung and Hew 2004; Dennen, 2005; Lee et al. 2011). These findings indicate that designers should consider adding features to assist instructors' interaction with students and facilitate group discussions. Overall, findings of this study indicate that Blackboard Discussion board designers need to consider refining pedagogical objectives and adding value to support instructor-student interaction in a discussion board forum.

6 Discussion

Regardless of the online environment, whether it is a website, social media environment or learning environment, information is continuously being sought. Information foraging theory asserts that people will modify their searching strategies for the environment to make seeking information more effective and efficient. It was a change in environment that aided instructors in finding the valuable information they needed to access student participation in a discussion board. There are still aspects that ought to be changed to assist instructors' information foraging and instructional activities. Many learning management systems fall short in their design evaluations, and as such do a disservice to instructors and students alike. As Nokelainen (2006) indicates, usability evaluation within a learning system is not enough; it is essential to evaluate the pedagogical design of the system. Further research is needed to fully explore the design elements within learning systems' discussion board forums that support pedagogical usability within the system.

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