

Student Participation Characteristics within the Discussion Boards with Post-First Setting: A Case Study in a Graduate Online Course

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Abstract—The purpose of this study is to identify student participation characteristics within the discussion boards using a recent Blackboard Post-First setting in a graduate online course. Unlike the standard discussion forum setting, where students can typically see their peers' posts anytime, the Post-First setting requires students to post their own original response first. The new setting allows for topic focus and original responses but it discourages interactive discussions. Due to its forced and limited setting, some students expressed resistance against the Post-First condition. However, the new setting allows for even and sustained student participation throughout the course. Early posts receive more feedback from peers than do posts done at a later time.

Index Terms—online course, discussion forums, post-first setting, student participation characteristics

I. INTRODUCTION

A discussion board is often viewed as the heart of an online course. Thus, learning through online discussion forums has been studied by many researchers who focused on various aspects such as instructional guidelines, development of online activities for student engagement, teaching or moderating strategies, and effective design of good learning environments. The online asynchronous, text-based discussion provides many benefits such as facilitating self-directed learning [1], constructing and negotiating meaning [2], promoting critical thinking processes [3], increasing motivation to participate and write well [4], producing more careful, formal, and reflective responses [5], and improving one's ability to organize and analyze information [6].

However, as much as the benefits the online discussions bring to us, various challenges have also been identified. Instructors and students are challenged with keeping the discussion on topic [7], [8], avoiding procrastination in responding to postings and disorientation [9], keeping high rates of interaction and dialogue [10], and avoiding overlapping exchanges as a result of the excessive focus on new posts [11]. These problems reduce the opportunities for meaningful reflection, social interaction, and knowledge construction [12].

To explore student interaction or student engagement in an online discussion forum, Wise, Speer, Marbouti, and Hsiao [13], and Daraijaj and Umar [14] analyzed students' listening behaviour patterns in an asynchronous discussion forums. Listening behaviour refers to tasks such as when and how students interact in discussion forums. Machado, Lima, Marciel, and Rodrigues [15] investigated behavioral aspects of students in the discussion forum using the K-Means clustering technique. Their study identified common patterns of students' behaviours based on their interactions in the forum.

Noting the various strengths and weaknesses discussion forums bring in to fully online courses as well as the various factors influencing student participation in an online discussion forum, it becomes pertinent to ask if there is any new feature or setting of the discussion forum that can facilitate student learning in a different but effective way. The most common and standard setting of discussion forums used in most of the research cited above is to allow participants to read other messages posted by earlier contributors. However, the recent addition of the Post-First setting in the discussion forum [16] opens up possibilities for using the discussion board in a different way.

Due to the recentness of this setting, there is no research that investigates the impact of the new setting on student learning. Therefore, as an initial step to understanding the potential of this new setting, this exploratory study aims to document characteristics that the new setting brings to a fully online graduate course.

II. THE COURSE CONTEXT

The course ETEC 500, *Research Methodologies in Education*, is the setting for this study, and the particular section of the course that this study was based on was delivered using Blackboard aka Connect in 2015W2 (Jan-Apr, 2016). ETEC 500 is a core graduate course in the Master of Educational Technology (MET) program at the University of British Columbia (UBC) in Canada. It is an introductory research methods course that focuses on developing skills for locating, understanding, interpreting, critiquing, and designing educational research. To this end, the activities and assignments are designed to integrate the content and concepts the students learn in the course, and to apply them to review and plan research.

The completion of the individual compulsory seven activities required to post answers to the discussion forum and participation is worth 35% of the total mark. Fig. 1 is one of the activities on the discussion forum:

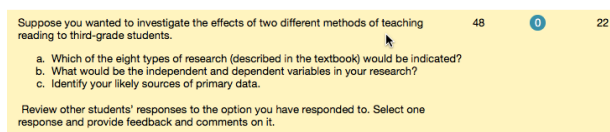


Figure 1. Activity 2 discussion prompt.

The author was involved in the course major revisions as one of the course instructors. The ultimate goal behind employing the new setting was to promote the originality of posts by preventing students from paraphrasing existing posts.

The instructors expected that the Post-First setting would allow for use of the discussion forums in different ways. This setting prevents participants from accessing their peer's threads or replying to them until they have contributed their own thread, independent of what's already been posted. When the Post-First setting is applied, various other settings are automatically made unavailable in order to maintain the integrity of the Post-First capability. For example, an author is not allowed to see what else is in the discussion. When students first enter the discussion forum, they see a note inviting them to get started with their first thread.

III. METHOD

The author incorporated quantitative and qualitative data such as student participation records, student feedback, and instructor's observations about student participation. Information about the student participation characteristics on the discussion forum was retrieved from the course platform. The sample consisted of 22 participants who were involved in asynchronous discussion forums. The author explored the Post-First discussion forums only (215 posts in total), in the activities for Week 2, 4, 6, and 7. Instead of any statistical tests or detailed content analysis, this exploratory study deals with frequencies and student general comments about the new setting.

IV. FINDINGS

The author expected that the Post-First setting could promote originality of posts and that the participants' behaviours would be different from those in the standard view setting in certain ways. It was expected that this new setting would prevent the paraphrasing problem that often exists in standard forums, where students spend time and energy to figure out how to rewrite what others have written rather than developing their own original post. There are five findings worth discussion.

A. Even and Sustained Participation

Unlike other standard settings where student participation falls down drastically as the course passes by, student participation in the Post-First setting discussion forum maintained similar levels of

participation throughout the course. In Table I below, there were more posts in the later activities (Activity 6 and 7) than in the earlier activities (Activity 2 and 4). All 22 students participated in the weekly activity and their average number of posts was 2-3 weekly.

TABLE I. WEEKLY ACTIVITY PARTICIPATION

Activity	Total Posts	Total Participants
Activity 2	48	22
Activity 4	48	22
Activity 6	61	22
Activity 7	58	22

Most participants posted their own responses and responded to one or two of their peers' existing posts. However, the consistent participation could have been affected not only by the Post-First setting but also by the evaluation requirements, which asked for one original response and at least one reply to the existing posts to get full participation marks. There was clear evidence from this study to confirm that assessment in online environment significantly influenced student interactions. This finding is in line with the previous studies [17], [18].

B. Topic Focused

Some studies have reported that discussions become disjointed and inconsistent [8]. However, due to the nature of the requirement of the activities, the discussions in this course were very focused on the weekly discussion topics, as the following exchanges show.

[Peer 1] *Hi, thanks for sharing. I learned a lot from how you structured your reply, and was curious about one aspect. Why did you decide to select from the top 85th percentile?*

[Peer 2] *Thanks for sharing. I had the same reaction to the selection of students as Noan did. I do believe that in a study such as this, it would be interesting to see if the standard deviation of test scores is reduced, indicating that the lower achieving students benefit from the environment they are learning in, in this case other students helping them.*

[Thread Creator/Original Composer] *Hi, I made an assumption when I selected the top 15 percent would have enough students. I probably should have left it as the top students. That we the study could focus on top performing students and see if the training method factored in. **But reading yours and Ed's comments is making me rethink that all together.** It's possible the learning method would boost all the students grades, and would not just be reflected in the top performers.*

These exchanges demonstrate the topic-focused discussion of the course. The thread displays how the participants negotiated the scope of participant selection, and the peers' question and additional comments helped the original thread creator promote his/her critical thinking process about selecting research participants.

C. Not Interactive but Original

Even though the discussions were very topic focused, only a few threads encompassed interactive dialogues among peers and between the thread creator and his/her

peers. Many researchers indicated that interactive discussions promote critical thinking processes [3] and foster learning community [19]. However, many threads in this course were not highly interactive due to the lack of requirement that turns be taken, as noted in the assignment directions:

Review other students' responses. Select one response that differs from you or of particular interest to you and provide feedback and comment on it.

Because of this, many threads remained unanswered or not fully developed, having only two posts or even just one message posted by the thread creator him/herself. As shown in Table II, only a few threads were revisited by the thread creator and few questions and comments were facilitated by his/her peers.

TABLE II. NUMBER OF THREADS REVISITED BY THE THREAD CREATOR

Activity	Total Threads	Number of creator's responses to peers
Activity 2	22	2
Activity 4	22	3
Activity 6	22	6
Activity 7	22	5

The lack of interactivity could be affected not only by the specified required posting number but also by the nature of the discussion questions. Bradley, Thom, Hayes, and Hay [20] claim that question types influence the quantity and quality of student online submission. As shown in Fig. 1, the questions require students to demonstrate their understanding of the learning module notes and readings. The questions are not debatable or open to much discussion. It could be argued thus that the student discussions were too rigidly controlled by the sets of questions, which in turn created many similar responses that reflected the specific content knowledge and did little to extend learning beyond such reflection.

Even though the discussions were not highly interactive, some students noted that the Post-First setting helped them develop their own original posts.

I didn't really like the Post-First format for discussions, as I found it really limited any interaction with other students, but I can appreciate the merit for showing understanding of the readings. [Comment from ETEC 500 Course Evaluation]

One of the challenges the online discussions bring to us is overlapping exchanges [11] that could result in the lack of meaningful reflection, social interaction, and knowledge construction [12]. Regurgitating the words of others without being required to grasp the meaning of the original author's arguments and findings prevents learners from building their ability to think. In this sense, the Post-First setting provided learners with an opportunity to present their original thoughts and understanding about topics.

D. Early Contributors Receive More Responses from Peers

Many studies suggest that there is a relationship between the frequency of students' postings and their

final grades [21], [22] and the more posts students make, the more they interact and engage with their peers and course materials, which encourage students to engage their higher-order thinking skills [23].

It is natural to hypothesize that early threads received more responses from peers than did the threads posted at a later time. As shown in Fig. 2 below, this trend was consistently presented over the four activities.

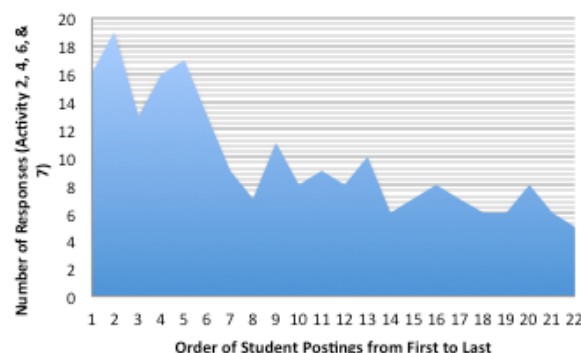


Figure 2. Number of responses in chronological order

In fact, this result is incongruent with the previous study [11]. In Hewitt [11], students are more likely to read the latest thread than read earlier threads. Across all four activities, earlier posts received more responses regardless of who created the thread. In the standard setting, there is a visible issue around dominance of the discussion by individuals and behaviour that results in an individual feeling excluded from a group [9]. However, this issue was not prominent at all in this course.

E. Resistance for the Forced Participation Setting

Modeling a contextually responsive and constructivist approach to learning, most of the courses in the MET program are using asynchronous discussion forums as a substantial element in evaluation. In many courses, a minimum level of participation is frequently indicated for discussion but a maximum number of posts are not. Thus, some students may become strongly motivated to focus on quantity in discussion forums to receive a higher grade. This requirement sometimes produces discussions that have little value in terms of promoting learning. With this section being the first to employ the Post-first setting and thus with its lack of familiarity to the users and the incomplete understanding of its pedagogical applications, some students in the course wrote with the hope that the course instructor would change the setting, as shown below:

For my own style of learning, I benefit greatly from learning in community, and sometimes that involves seeing how others are approaching a task before I "put myself out there". ... I wonder if we could open up the forums to be able to read before making a post? From my experience, that approach may benefit a wider-array of learning styles.

As noted earlier, and contrary to the student's comment above, the Post-First setting does not completely block students from viewing others' posts. As soon as students post their original message, they can see

others and so the learning community can benefit. The student's perception, however, was that the Post-First setting created a barrier hindering learning from others. This suggests that different learning strategies and styles may not be facilitated by the Post-First setting, and that the quality of the discussion could therefore decline when responses are "forced" by the course requirement to be posted first.

V. CONCLUSION

This case study aimed to identify characteristics of student behaviour within the Post-First setting discussion forums in a graduate online course. Findings indicated that discussions with the Post-First setting had even and sustained participation. They were topic focused, not highly interactive, but participants were original in presenting their understanding of the readings. Early contributors received more responses from their peers. There was some resistance against the forced Post-First setting that was perceived by participants as not addressing different learning styles.

Because this case study is based primarily on instructor observation and data from the course discussion forum, a more comprehensive and in-depth research on student behaviour and the impact of this new setting on student learning is needed. Due to the recentness of the feature, its impact on student learning has not yet been explored in the literature. The preliminary findings from this study are meaningful enough to shed light on the potential benefits that the Post-First setting provides as well as its pedagogical benefits. There is also a need to investigate challenges in a variety of contexts and with different learners in order to appreciate the many and complex ways that the challenges may manifest themselves to learners.

Based on the student behaviours presented in this study, some notable suggestions can be offered. To allow for maximal participation, small group discussion would be effective. The small size would make it easier for all students to participate. Each small group could then shared among all students in the course. The discussion questions would need to be challenging and debatable. Discussion questions that are interesting and controversial would allow for multiple possible answers and points of view. The collaborative nature of online discussions should help students learn from each other by using the open-ended questions that tap into higher-order thinking skills.

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