Promoting Democratic Engagement with Low-Stakes Discussion Board Interventions

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Abstract: This study describes a series of interventions that enhanced preservice teachers' experiences with online discussion boards. Data were analyzed using an experimental posttest design, and findings indicate that the interventions not only improved the quality and substance of students' responses, but also promoted an equitable distribution of course-based social capital.

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Introduction

Online discussion boards provide permanent records of classroom discourse. Unlike formal essays, which are judged on the quality of the writing, discussion boards are often assessed on students' ability to articulate and explore ideas.

They relieve teachers of the burden of correction so they can focus on students' thinking, and furthermore create nonthreatening situations for learners who may be hesitant to take risks because they are overly concerned with mechanics.

While the format of online discussion boards varies from one teacher and platform to the next, their primary characteristic is the public sharing of information.

The Benefits of Online Discussion Boards

The benefits of teaching with online discussion boards are well documented. In addition to providing students with opportunities to work at their own pace, they have also been shown to enhance collaboration, facilitate critical thinking, and increase feelings of social presence (Cho & Tobias, 2016; Joksimović et al., 2015).

Despite their ability to promote inclusivity and improve academic outcomes, students often have negative perceptions of their utility, especially when they are required to respond to their classmates, and/or dismiss discussion boards as boring, ineffective, or repetitious (Kauffman, 2015; Kent et al., 2016; Kurucay & Inan, 2017).

Some of the specific issues that students have with responding to their peers include being frustrated with their classmates' lack of engagement, feeling a need to avoid conflict or censor themselves, or simply forgetting that reviews are due after making their initial posts (Aloni & Harrington, 2018; Clinton & Kelly, 2020).

Best Practice for Teaching with Online Discussion Boards

In order to mitigate students' concerns and improve the quality of online discussion boards, it is important for teachers to outline the criteria for responses, actively participate in the conversation, and provide timely feedback (Aloni & Harrington, 2018; Chen & Chiu, 2008; Lee, 2013; Wyss et al., 2014).

Other recommendations for best practice include enabling students to see each other's posts and dividing larger classes into smaller working groups (Akcaoglu & Lee, 2016; Arend, 2009; Jacobi, 2017). It can also be helpful to mimic in-person discussion strategies, such as utilizing Socratic questioning techniques or assigning students specific roles: for example, as Moderators, Instigators, or Skeptics (Olesova et al., 2016; Strang, 2011).

Research Questions

This study extends the literature by describing a series of low-stakes interventions that can be used to facilitate online collaboration. These interventions seek not only to improve the quality and substance of students' responses, but also to promote the equitable exchange of ideas and facilitate democratic engagement.

This research was prompted by the desire to improve students' relationships with online discussion boards, to foreground and simulate the practice of asynchronous conversation, and guided by the following set of questions:

1. How can teachers improve the quality of students' work?
2. How can teachers improve the substance (length) of students' responses?
3. How can teachers ensure an equitable distribution of students' responses?

Table 1
Assessment Criteria and Theoretical Frameworks for the Quality Intervention

Assessment Criteria	Theoretical Frameworks
Contributes new ideas or perspectives to the discussion.	Garrison et al. (2001)
Expands on the ideas or perspectives of previous posts.	Jeong (2005)
Makes references to course materials or other outside sources.	Beckmann & Weber (2016)
Asks questions that have the potential to advance the conversation.	Weltzer-Ward et al. (2009)
Answers questions with evidence that supports position.	Andresen (2009)

Methodology

Data were collected from online discussion boards (n=96) housed in Canvas over a three-year period and analyzed with inferential statistics at posttest. The first intervention focused on the quality of students' responses. The second focused on the substance of students' responses. And the third focused on promoting more equitable student-to-student discourse.

The control and experimental groups were randomly selected from multiple sections of an upper-level education course at a small liberal-arts university in western Pennsylvania. The Quality Intervention was applied during the first year of the study. The Substance Intervention was added during the second year. And the Equity Intervention was added during the third year.

Improving the Quality of Responses

The quality of online discussion boards depends on their ability to approximate the interplay of face-to-face conversations. It is important for students to feel like they are participating in an actual exchange, rather than simply responding to a set number of their peers (Gilbert & Dabbagh, 2004; Pena-Shaff & Altman, 2015; Wang, 2019).

Students in the control groups were instructed to respond to three of their classmates after making their initial posts. Students in the experimental groups were also instructed to respond to three of their classmates; however, they received more structured instructions for advancing the conversation (Andrade, 2000).

Table 1 presents the assessment criteria and theoretical frameworks used to assess the quality of students' posts. Posts that met any of the criteria were coded as "Advancing the Conversation" and assigned a numerical value of 1. Posts that did not meet any of the criteria were coded as "Ending the Conversation" and assigned a numerical value of 0. Students in both the control and the experimental groups received the same rubrics and were evaluated on the number and not the quality of their peer reviews.

Enhancing the Substance of Responses

The length of students' posts, especially when they involve peer reviews, often depends on how teachers assign and make use of deadlines. To encourage more substantial engagement, it is important to set multiple due dates for initial and follow-up responses so that students have more time to contribute to the conversation (Black, 2005).

Table 2
t-Tests on the Quality and Substance Interventions

Inter.	Group	N	M	SD	df	t	t Crit.	p
Quality	Con.	16	.35	.17	15	21.97	4.87	<.01
	Exp.	16	.76	.17				
Sub.	Con.	16	67	23.32	15	22.49	2.99	<.01
	Exp.	16	187	63.08				

Table 3
F-Test on the Equity Intervention

Inter.	Group	n	M	SD	df	F	F Crit.	p
Equity	Con.	16	2	1.97	15	2.64	2.40	<.01
	Exp.	16	2	1.21				

Students in the control groups were expected to submit their peer reviews within two days of the deadline for their initial posts. Students in the experimental groups were also expected to submit their peer reviews within two days; however, they were not permitted to submit their reviews until after the deadline for their initial posts.

While students in the control groups were permitted to respond to any of their peers at any time, students in the experimental groups were assigned "first-response" partners that changed for each assignment. After responding to their "first-response" partners, students were permitted to respond to any of their peers (see Figure 1).

Promoting Democratic Engagement

Regardless of when students are expected to submit their peer reviews, those who make their initial posts early have the most visibility and typically receive the largest number of responses. This leads to an inequitable distribution of course-based social capital, which can produce disproportionate student experiences (Casebeer, 2021).

For the purpose of this study, course-based social capital is defined as the resources that students attain or have access to as a result of student-to-student discourse, including the relationships they develop during discussion board assignments that can provide more nuanced opportunities for future engagement (Van Rossem et al., 2015).

Analysis

The researchers applied t-tests to the Quality and Substance Interventions to test the null hypotheses that there were no differences in terms of the quality and substance of students' responses between the control and experimental groups. An F-test was applied to the Equity Intervention to test the null hypothesis that the responses that students received were equitably distributed.

For the Quality Intervention, the dependent variable was the students' average capacity for advancing the conversation. For the Substance Intervention, the dependent variable was the average length of the students' responses. And for the Equity Intervention, the dependent variable was the average number of responses received.

Figure 1
Sample Matrix "First-Response" Partners

DISCUSSION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Social Cartography	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
Educational Psych.	3	4	5	6	7	8	9	10	11	12	13	14	15	1	2
Critical Literacy	4	5	6	7	8	9	10	11	12	13	14	15	1	2	3
Postmodern Theory	5	6	7	8	9	10	11	12	13	14	15	1	2	3	4
Politics of Space	6	7	8	9	10	11	12	13	14	15	1	2	3	4	5
Trauma and Empathy	7	8	9	10	11	12	13	14	15	1	2	3	4	5	6

Note: During the discussion on Social Cartography, for example, Student 1 would have to first respond to Student 2, Student 2 would have to first respond to Student 3, and so on.

Results

Table 2 presents the results of the t-tests that were conducted on the Quality and Substance Interventions. In both cases, the mean scores were higher in the experimental groups than in the control groups.

Table 3 presents the results of the F-test on the Equity Intervention. The standard deviation for the equity of students' responses was lower in the experimental groups than in the control groups.

For all three interventions, the tests revealed statistically significant differences between the groups and the null hypotheses were rejected.

Discussion

The results suggest that all of the interventions were successful. Providing students with criteria for responding to their peers improved the quality of their work. Creating two windows for engagement, one for making initial posts and one for making follow-up responses, increased the length of students' responses. Assigning "first-response" partners also encouraged a more equitable distribution of responses.

Unpacking the Quality Intervention

Without specific guidance for how to respond to their peers, students in the control groups struggled to advance the conversation. As Table 2 suggests, students in the experimental groups were more than two times as likely to contribute new ideas, expand on previous posts, make references to relevant materials, or ask pertinent questions.

Many of the responses in the control groups that were coded as "Ending the Conversation" offered little more than personal affirmations, such as "Great work!" or "I totally agree!" While students technically met the requirements—they responded to three of their peers—their responses provided little in the way of substance to their peers and effectively ended the discourse.

Offering suggestions for advancing the conversation in the directions improved the quality of student work without raising the stakes of the assignment: that is, students did not have to refer to the rubric for anything more than the minimum number of responses. This empowered them not only to engage in a more fluid discourse, but also to focus on the immediate conversation rather than the mechanisms of assessment.

Table 4
F-Test on Students' Second Responses During the Equity Intervention

Inter.	Group	n	M	SD	df	F	F Crit.	p
Equity	Con.	16	1	1.26	15	3	2.4	<.01
	Exp.	16	1	.73				

Unpacking the Substance Intervention

With the exception of first responders, who sometimes forgot to return to the discussions to acknowledge their peers, students in the control groups typically posted their initial and follow-up responses at the same time. Even though their peer reviews were not due until two days after their initial posts, many of them were finished posting by the first deadline.

According to Table 2, students in the experimental groups wrote approximately three times more than their counterparts in the control groups. This increase may be attributed either to the additional time students received to formulate their ideas, or to the respite they received from not typing their initial posts and responses concurrently.

Once again, students in both groups received the same rubric and were evaluated with the same criteria, and there was no benefit to writing more unless the students actually had something to contribute. This suggests that students in the control groups viewed peer reviews as extensions of their initial posts rather than as a means to collaborate with their classmates.

Unpacking the Equity Intervention

The first 10% of students to post in the control groups received more than 50% of their peers' responses. Similarly, the last 50% of students to post received less than 10% of their peers' responses. This led to lopsided conversations, and some of the late responders in the control groups did not receive a single response all semester.

As Table 3 suggests, the responses in the experimental groups were more equitably distributed than the responses in the control groups; in this case, a tighter standard deviation implies more equitable participation. While the Equity Intervention ensured that each student received at least one response to their initial posts, an unforeseen benefit was that students' second responses were more equitably distributed as well (see Table 4).

In some cases, students in the experimental groups forgot to respond to their "first-response" partners. Rather than reducing their scores for responding to the wrong peers, they received gentle reminders about the importance of following the response schedule, and many of them self-corrected.

Building Better Discussion Boards

With a bit of planning, asynchronous online discussion boards can provide students with low-stakes writing opportunities that not only promote higher-level engagement with course concepts, but also increase their social capital. This can improve the effectiveness of each subsequent discussion, as students feel more comfortable responding their peers.

To improve the quality of students' responses, teachers can provide students with recommendations rather than rules for advancing the conversation. Instead of simply asking them to respond to a set number of their peers, they can advise them to respond with new perspectives, references to course materials, or questions that expand on previous posts.

To encourage students to write more substantial responses, teachers can set mutually exclusive windows for initial and follow-up responses. This provides students with more time to think before responding to their classmates and cuts down on the tendency to meet an assignment's minimum standards as quickly as possible.

Finally, to improve equity and ensure that students feel like their work is being seen, teachers can assign "first-response" partners. This can be as simple as creating a generic flowchart in which Student A responds to Student B, Student B responds to Student C, and Student C responds to Student A, and then cycling through the list for the next assignment.

The Quality, Substance, and Equity Interventions can be applied to almost any asynchronous online discussion board with very little oversight. In addition to improving the depth and length of student responses and promoting democratic engagement, these strategies have the added benefit of maximizing response time for teachers. The instructions are universal, which gives teachers more time to participate in the conversation, and the assessment criteria is minimal, which gives them more time to provide individualized feedback.

While there are numerous ways that students can collaborate online, including live chats and interactive whiteboards, asynchronous discussion boards often provide the foundation of learning in the virtual environment.

In much the same way that real-time conversations can spark curiosity and produce unexpected outcomes, these assignments can lead to new lines of inquiry, especially when teachers address students' concerns and foster an authentic discourse. The interventions presented in this study provide a step in the right direction; however, there is still work to be done, and there is always room for new innovations.

Limitations and Recommendations

This study was limited by a small sample size, which decreases its generalizability. Even though data were collected from almost one hundred online discussion boards over a three-year period, they were collected from the same upper-level education course at the same institution. Future research could expand on this work by applying these interventions not only to other courses at different levels, which would reach students majoring in different fields, but also at institutions that serve larger populations.

This study was also limited by its quantitative approach to the data, and future research would benefit from a mixed methods approach. For example, while this study was able to conclude that the substance of students' responses improved by setting mutually exclusive windows for initial and follow-up responses, it could not say why.

Similarly, while this study was able to conclude that the equity of students' responses was improved by assigning "first-

response" partners, it could only speculate and not determine how that led to better in-course outcomes. Recommendations for future inquiry include interviewing participants about their perceptions of online discussion boards and analyzing trends across content areas.

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