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Achieving Critical Dialogue in Online Doctoral Programs: an Exploration of Student Perceptions and Experiences with Multiple Modalities

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Abstract
Critical pedagogy employs dialogue that is embodied, reflective, and authentic with aims to promote action toward social justice. Although online learning is well suited to support several characteristics of critical dialogue (i.e., participant diversity, student discussions, emphasis on reflection), it can also be impersonal and disembodied. The purpose of this paper is to explore the experiences and perceptions of online doctoral students in a course designed to facilitate critical dialogue about education. The course experimented with three discussion formats aimed at achieving critical dialogue: (a) traditional, text-based discussion board; (b) asynchronous video (voice thread), and (c) recorded small-group, synchronous video discussions followed by asynchronous discussion board interactions. In this paper, we share results from student surveys of three semesters of the course ($n =$ 22 of 46 students enrolled). The findings suggest that students preferred synchronous video chats and perceived this format as most supportive of critical dialogue. Students, on average, rated the discussion board format as the least enjoyable, least engaging, and least supportive of critical dialogue. Students' open-ended comments emphasized that the discussion board and voice thread formats promoted reflection but were less supportive of interactive dialogue. We conclude by discussing implications regarding course design and student support for online instructors who aim to promote critical dialogue in online courses.

Keywords Critical dialogue · Online learning · Video discussion

Over the past 30 years, online learning in higher education has grown significantly, both in the number of institutions that have adopted online courses and in the depth at which learning can occur online (Boyd 2016). For many institutions and their students, the benefits of online learning are reflected in factors such as broader access, lower costs, and more flexibility when compared to teaching and learning that takes place in a classroom. However, online learning also presents challenges, including the inability to create a physical space where students and instructors can connect and engage in real-time discussions that foster critical dialogue (Rudick 2016). Critical

dialogue is an "educational strategy that supports a problem-posing approach. .. in which the relationship of the students to teacher is, without question, dialogical, each having something to contribute and receive" (Darder et al. 2003, p. 15). For instructors who aim to adopt a critical pedagogical approach in their teaching, critical dialogue is essential.

Most online learning research focuses on non-critical pedagogical methods. These often emphasize the transmission of knowledge by the teacher and the acquisition of knowledge by the student, or what Freire (1970) called a "banking" approach to education. Researchers exploring non-critical pedagogical methods tend to focus on the relationship among characteristics of online courses (Moore 1973, 2013), how to develop an online community (Garrison et al. 2010b), and effects of discussion modalities on learning and community (Borup et al. 2012; Clark et al. 2015). These studies provide important insight into understanding the landscape of online learning. However, the field seems to have neglected the important role that critical dialogue can play in learning. Additionally, many scholars whose work focuses on critical pedagogy consider the role of technology in K-12 classrooms (Apple 2003;

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Darder et al. 2003) or how technology has enhanced the corporatization of higher education (McLaren 2015), while overlooking how online learning shapes the opportunities and barriers to critical pedagogy. Indeed, in this complex and ever-more-connected world, educators must go beyond the "banking" method to create spaces that empower students to critically engage in their world as active learners. We must support students in developing solutions to the various inequities and problems we and others around us experience daily. This type of learning can come about through critical dialogue—conversations that are reflective, authentic, embodied, often contentious, and that lead to individual and community action.

In this paper, we explore the possibilities of critical dialogue among online doctoral students in a course about critical issues in education. In this course, we attempted to support critical dialogue through three discussion modalities. Drawing on survey results of three semesters, we discuss how students experienced and perceived these modalities, specifically in terms of critical dialogue. Below we provide a brief overview of the research and theory that framed this study, followed by a description of our research methods. We conclude with a summary of our findings and some implications for online instructors and designers.

Literature and Framework

Before describing our research method and findings, we review two online learning theories on which our research is based (transactional distance and communities of inquiry), describe critical dialogue, and summarize previous research related to the effects of modalities in online discussions.

Transactional Distance and Communities of Inquiry

In this paper, we draw on two theories of online learning: transactional distance and communities of inquiry. Transactional distance reflects the relationship between student-instructor dialogue (interactions and responses), course structure (rigidity and standardization), and required learner autonomy (students' ability to obtain course objectives) (Moore 1973, 2013). Accordingly, Moore (2013) argued that "As structure increases, transactional distance increases" and "As dialogue *decreases*, transactional distance increases" (p. 71, emphasis added) which contributes to higher levels of learner autonomy.

The community of inquiry framework, widely used in online learning research, reflects students' educational experience using three types of presence (social, cognitive, and teaching) as well as describes the dynamics of online learning (Garrison et al. 2010a, b). Garrison et al. (2010a) argued that asynchronous text-based communication is a "reflective,

precise, and lean form" of dialogue, while synchronous oral communication can be described as "fast paced, spontaneous, and fleeting" (p. 6). They claimed the strengths of text-based communication outweigh the deficits resulting from a lack of non-verbal cues. Garrison et al. offered evidence of their claim and further explained that their position is "understood and taken for granted today" (2010a, p. 6). Yet, in this paper, we consider how the inclusion of asynchronous video and critical dialogue that is grounded in a Freirean approach complicates Garrison et al.'s claims.

Critical Dialogue

Paulo Freire (1970) argued that education should expand critical consciousness at individual and collective levels and result in actions toward a more humanizing and liberated world. Critical dialogue is a central component to a Freirean approach of critical pedagogy (Darder et al. 2003). According to Freire, true dialogue, "as a process of learning and knowing. .. always involves an epistemological curiosity about the very elements of dialogue" (Freire and Macedo 1995, pp. 382–383) and exists in the context of love, humility, faith, hope, and critical thinking (Freire 1970, pp. 91–92). This type of dialogue provokes students to critically reflect on important and potentially contentious issues, leading to a deeper understanding of their own and others' lived experiences.

In recent years, several scholars have discussed the advantages and challenges of promoting critical dialogue in online education (Boyd 2016; Hilton 2013; Rudick 2016). In our review of this literature, we identified seven characteristics that scholars argue support critical dialogue online: equitable access, embodiment, critical engagement, challenging social and cultural contexts, collaborative exploration and active listening of lived experiences, awareness of various perspectives, and promoting action toward social justice. In Table 1, we include a short description of each characteristic along with potential benefits and challenges for online learning.

We use these seven elements to guide this study as we analyzed the extent to which students engaged critical dialogue in an online course using various modalities of online learning.

Modalities and Online Learning

Despite claims that asynchronous text communication is as or more effective than synchronous video (Garrison et al. 2010a), critical dialogue that reflects the seven aforementioned characteristics requires more intentionality. In particular, the distance and impersonality of many online courses presents a barrier for embodied dialogue that requires trust. Still, new technologies, including synchronous and asynchronous video, may mitigate some of these challenges.

Researchers found that video discussion mediums can increase social presence in online learning environments (Clark

Table 1 Characteristics of critical dialogue and implications for online learning

Characteristic of critical dialogue	Description	Benefits and challenges for online learning
Equitable access	Participate in dialogue with relative flexibility in how, when, and from where (Hilton 2013)	The digital divide might inhibit access for some (Boyd 2016).
Embodiment	Authentic, whole-bodied participation	Traditional online pedagogy's text-centered approach might pose limitations (Hilton 2013; Rudick 2016)
Critical engagement	Respectful confrontation and dissent encourages students to create, examine, and re-create their beliefs	Might be hindered or supported by online, asynchronous environments where students have more time to post, respond, and edit (Boyd 2016; Hilton 2013; Hudson 2002)
Challenging social and cultural contexts	Identifying and questioning power structures	Online learning management systems and related financial structures reflect deeply embedded power structures (Boyd 2016; Rudick 2016)
Collaborative exploration and listening of lived experiences	Epistemological understanding of power, privilege, and oppression	Might offer time and space for critical reflection of each other's experiences (Hilton 2013; Hudson 2002)
Awareness of various perspectives	Exposure to others' perspectives both within and beyond classroom	Might provide opportunity for more diversity in learners, such as students living in different countries (Hudson 2002)
Action promoting	Movement from discussion to social action	Because students are physically separate, collective action might be limited; however, broad individual action might be possible (Hilton 2013; Rudick 2016)

et al. 2015). For example, in one study, students perceived asynchronous video discussions as more supportive of open communication, emotional expression, and social cohesion (Borup et al. 2012). Additionally, while many students described communicating through video as more natural than text-based discussions, and video offered more opportunity to view their peers as "real people" (p. 201), others did not trust that their peers watched their video responses. In another study using mixed-methods, Clark et al. found that video communication increased social presence, trust, and group cohesion more effectively than text-based discussions. Still, in exploring how different types of students experienced asynchronous video discussions, Borup et al. (2013) found that some students (those identified as introverts) preferred asynchronous video because of the opportunity to reflect and re-record while others (an English learner and an extrovert) felt less comfortable creating video posts and did not seem to value their peers' posts.

These studies offer an understanding of social presence and learning experiences among students using videos in online learning. Thus, we aim to build on these studies by exploring students' perceptions and experiences with the use of different modalities, including video and text-based, in enhancing critical dialogue within an online course. Next, we describe the context of this course and the research methods we used to explore this topic.

Research Method

In this paper, we draw from findings based on a larger study of critical dialogue in online courses. For the larger study, we used case study methods (Yin 2017), collecting and analyzing a range of data to examine the role of different modalities in achieving critical dialogue in online courses. Below we describe the context of the course that we studied followed by the data collection and analysis methods.

Course Context

We examined data from a semester-long online doctoral course taught at a large, public university in the Southwest during three semesters (Fall 2016, Spring 2017, and Fall 2018). Students completed the course during their fourth semester of a three-year EdD program. Since the program is centered on supporting action research in the students' practitioner contexts, students are required to also work full-time as a practitioner in an educational environment, such as a school or university. The course objectives focused on understanding contemporary issues in education, providing a critical analysis of existing scholarship, and relating these ideas to students' individual research projects. Students were assigned literature and videos that offered diverse perspectives on educational systems and cultures related to education. Moreover, the course calls students to draw from their personal experiences of privilege and oppression when engaging in course discussions, thus the diversity of student experiences in the course provided a rich source for discussion.

The course was structured around discussions of readings and videos on contemporary and critical issues in education. Students completed these readings/videos, wrote reflections, and participated in weekly discussions in one of three discussion formats: asynchronous discussion boards, asynchronous video discussions, or a combination of small-group

synchronous video and discussion board responses. The asynchronous discussion boards followed a traditional online discussion format: students wrote an original post and then responded to at least one other student's post. The discussion prompt used each week was: *Think about the text and/or videos assigned in this module. Pick one or two that you considered most interesting and relevant to your experience in educational settings and/or to your problem of practice.* The remaining prompt varied slightly depending on whether it was a discussion board, asynchronous video, or small group synchronous video. For discussion boards, the remaining prompt was: *Discuss why you are interested and the relevance of this piece(s) in approximately 250–500 words. Pull the text/video into this conversation by including one or two quotes.* For asynchronous video, the remaining prompt was: *Discuss why you are interested and the relevance of this piece(s) in approximately 3–5 min. Pull the text/video into this conversation by including one or two quotes.* For small group synchronous video, the remaining prompt was: *Discuss why you are interested and the relevance of this piece(s) in your group for approximately 25–30 min. Pull the text/video into this conversation by including one or two quotes. Come prepared to the dialogue by posing questions, critiques,* etc.

Students participated in discussion boards through the Blackboard learning management system. Asynchronous video discussions followed a similar format, with students posting an original 3–5 min video response via Voice Thread and responding to at least one other student. Most students replied to videos through text responses, though some (33% of all response posts) did reply with video. Several students included slide presentations as part of their original video posts, something not required or suggested by the instructor. The third discussion format combined synchronous video and asynchronous discussion board. For each discussion, one small group of three to five students held a synchronous video discussion on the week's topic. The group recorded their discussion and posted a link of the video to the text-based discussion board. The other students watched the video and replied using asynchronous text and the following prompt: *Reply to the group's post in writing. Your reply should include a thoughtful response. For instance, you might want to provide constructive feedback, ask follow-up questions, or discuss whether you agree or not with your classmates' position.*

Data Collection

Across the three semesters, 46 students enrolled in the courses. Students lived around the world, including a student teaching in Singapore and another in Brazil, though a large proportion of students lived in Arizona (about 50%) or in other U.S. states. Twenty-five of the students were female and 19 were male. At the conclusion of the course, students

were asked to complete a survey about their experience in the course (see Appendix A). Twenty-two of the 46 students completed course surveys.

We analyzed the Likert-scaled survey items both within each semester and across semesters. We checked the variance between semesters by performing one-way between groups ANOVA tests on the mean response of each survey question by semester. Our results demonstrated no significant difference in responses between semesters at the $p < .05$ level ($df = 2$, 19; p-values range from .09 to .9). Thus, we aggregated the three semesters for analysis. We analyzed the open-ended survey responses through deductive coding, using the seven characteristics of critical dialogue outlined above as initial codes.

Findings

We present the findings in three parts. First, we describe how students rated different discussion formats. Then, we explain student preferences regarding the frequency of each format. Finally, we present themes that we identified from the open-ended survey responses.
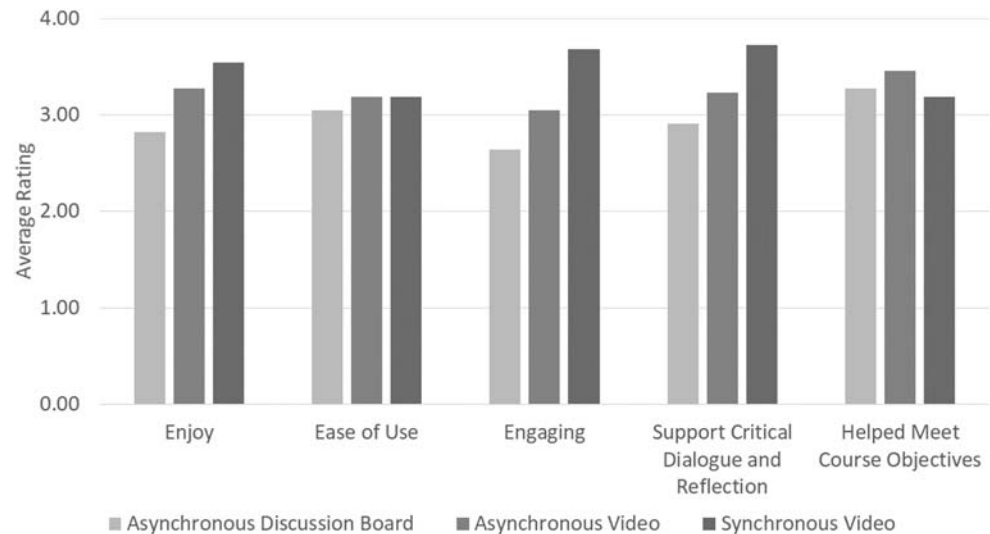
Discussion Formats

Figure 1 shows average student responses concerning each discussion format. On a scale of 1 to 5 (1 = lowest; 5 = highest), students rated synchronous video as the most supportive of critical dialogue and reflection (average rating of 3.73) while rating the discussion board (average of 2.90) as least supportive. Moreover, on average students rated enjoyment and engagement higher for synchronous video than asynchronous video or the discussion board. However, in terms of meeting course objectives and ease of use, students rated all three formats similarly.

Use of Discussion Formats Table 2 presents students responses to the statement: "[FORMAT] was used:" where "format" was replaced by the discussion type (asynchronous discussion board, Voice Thread (asynchronous video), Google Hangout or YouTube Live (synchronous video)). Although students rated discussion boards as the least enjoyable, least engaging, and least supportive of critical dialogue and reflection, most students (86%) indicated that discussion boards were used just enough. Yet, only 32% of students ranked synchronous video discussions as not having been used enough.

Open-Ended Question Responses

Students' open-ended question responses mirrored the results presented above. Students preferred the synchronous video over the other discussion formats, and most students preferred

Fig. 1 Average student ratings of discussion modalities by outcome

■ Asynchronous Discussion Board   ■ Asynchronous Video   ■ Synchronous Video

asynchronous video to text-based discussion boards. In this section, we discuss the affordances and limitations of each discussion format as described by students. We break limitations into three categories: limitations of the technology, limitations of the medium, and limitations that could reasonably be resolved through course design.

Discussion Board Students indicated that the discussion board format promoted deep reflection on course readings and topics. For instance, one student noted that the discussion board "allowed me to form my thoughts coherently and complete responses on my own time." Other students commented the discussion board offered them the opportunity to review a wider range of perspectives on topics when reading and responding to their peers' written comments.

Limitations of the discussion board format centered on three primary themes. First, students noted the software itself made it difficult to engage in authentic discussions. Students were required to click in and out of each individual student's discussion thread, making it difficult to engage across the class discussion as a whole. Students commented that notifications, a feature not available in the software at the time, might improve discussion engagement. Second, students shared that the lack of voice and facial expression limited their ability to understand one another. Finally, students explained that waiting for responses and experiencing no responses to

their post posed challenges in allowing for critical dialogue. As one student stated, "having to wait for responses sometimes pushed me to disinterest in the topic." While students' inability to know if they received a response right away may stem partly from the software design, the design of the course also contributed by moving on to new topics each week, artificially ending discussions and limiting space for closure. This challenge existed across all discussion formats.

Asynchronous Video Students noted that asynchronous video offered more overall engagement than asynchronous text, including comments that pointed to how this format "created some life in Blackboard" and "felt more personal." One student stated, "Voice Thread allowed us to explain our thoughts in a far better way. It captures nuances and is a much better vehicle for complex discussions." Students also commented that the videos promoted reflection. One student described this as recording a "video confessional." Another student noted, "It was hard to do the speaking, as I was speaking to myself but I enjoyed hearing and watching others to get more out of the communication than just writing."

In terms of the limitations, student comments reflected three areas. First, students shared that the software, VoiceThread, was sometimes difficult to use and they experienced frequent technical problems. Second, like the discussion board, some students mentioned that low responses to their posts made interaction difficult. Finally, students indicated that creating, watching, and responding to asynchronous video were time consuming, particularly as some students recorded long videos.

Synchronous Video Many student comments reflected a preference for the synchronous video format over the others because it offered more opportunity to engage with each other and discuss topics. For instance, one student explained, "This

Table 2 Preferred frequency of discussion modality use

Format	Not often enough	Just enough	Too often
Discussion board	14%	86%	14%
Asynchronous video	0%	77%	9%
Synchronous video	32%	59%	9%

was my favorite of all sessions! The collaboration between classmates was important to not only getting to know one another, but also towards discussing and conceptualizing topics for deep discussion." Some students indicated that they wanted more synchronous video discussions throughout the course because of the ability to engage better with each other.

Still, student comments also pointed to a few limitations. First, several students had trouble setting up and recording the video chats, and the discussions required each participant to have a stable internet connection. Second, some students explained that it was sometimes difficult to have cross-student dialogue if a student(s) dominated the discussion, with a student sharing that "one person spoke over 10 minutes" within a 25–30 min group discussion. Finally, one student expressed concern about recording discussions. Specifically, they noted "When we talk about controversial issues and your opinion is being recorded it changes things." They compared this to recording to a face-to-face class discussion and emphasized how "the dynamic would change." In other words, this comment points to the possibility that students might censor their opinions more in a recorded conversation than otherwise.

General Comments At the conclusion of the survey, students were asked for suggestions for improving the course as well as general comments. Most of the responses echoed what has been outlined above. Additionally, many students noted that they enjoyed the mixture of discussion formats which they believed supported student engagement. Also significant, many student's suggestions centered on providing more synchronous interactions, both in-person and online. These suggestions included having student groups debate a particular topic, round table discussions that include the instructor, and optional live online written discussions.

Discussion

The survey results outlined above highlight central issues to promoting critical dialogue in online courses. First, students described that the level of connection and engagement positively correlated with the fidelity of the discussion format. In most cases, students preferred asynchronous video to asynchronous text, and synchronous video to asynchronous video. These findings reaffirm the findings of Borup et al. (2012): video led to students feeling more connected to one another and increased engagement. Moreover, these results align with the notion of transactional distance theory, demonstrating that increased engagement and connection can result in lower transactional distance (Moore 1973, 2013). In other words, the decreased structure and increased dialogue of synchronous video discussions suggest less transactional distance than the higher-structure, lower-dialogue format of asynchronous text.

Second, like many online courses, dialogue was limited by the amount of student participation. In particular, the asynchronous formats promoted reflection, but dialogue across students was limited by lack of responses and follow-up. As Hilton (2013), Boyd (2016), and Hudson (2002) predicted, students indicated that asynchronous discussions promoted deep reflection, suggesting increased cognitive presence (Garrison et al. 2010a, b). However, the flexibility of the asynchronous format came at a cost: students reported less dialogue occurring in the asynchronous formats. Most students did not return to the discussions to respond and deepen the conversation with their peers, and some students commented that the asynchronous video posts felt like "video confessionals" or like they were talking to themselves. This suggests a low level of social presence and supports Rudick's (2016) claim that the technology can interrupt the human relationships. However, this dynamic might also be the result of the specific technology used and the course format.

In terms of the course format, the artificial nature of the asynchronous discussion seemed to limit dialogue. Discussions were bound to a specific module, and once the module was complete, the discussion stopped whether or not students were still engaged. The result was lower levels of dialogue and higher levels of structure, thus a greater transactional distance. Online instructors might consider how to format discussions that span longer time periods or to find ways to facilitate less-structured discussion formats that still encourage high levels of participation.

Third, this study offered some evidence that students' lack of trust inhibited authenticity and full participation. Although only two respondents commented on this effect, the result might significantly inhibit critical dialogue online. One student reported being hesitant to discuss sensitive issues in a permanent format, whether through text or recorded video, and believed that other students were also filtering their views on sensitive issues. Another student suggested that more synchronous opportunities would increase the trust within the class to promote more dialogue. This finding might be particularly salient to this population of students which included educational practitioners assigned to leadership roles in schools and communities.

Finally, despite the video capabilities of the asynchronous video discussion, students continued to strongly prefer synchronous interactions. Although one student reported problems with turn-taking in the synchronous video sessions, some students suggested this was the only format that fully supported critical dialogue. When students participated in synchronous discussions, they knew others were listening, and they were able to get immediate responses. Social presence and cognitive presence were high; structure was low and dialogue was high.

In summary, this study's results show that this online course offered some opportunity for critical dialogue but also

met significant challenges. Students reflected on their own experiences and became more aware of others' perspectives through the discussion formats. The use of asynchronous video provided a more embodied experience than asynchronous text. However, although the asynchronous formats supported reflection, synchronous video provided more opportunity for dialogue, the driving force of Freire's (1970) method. Students, on average, preferred formats that resulted in less transactional distance and claimed these formats were most supportive of critical dialogue. Additionally, the high levels of social and cognitive presence in synchronous video chats also corresponded with more preferred outcomes.

Limitations, Implications, and Conclusion

We identify four limitations, along with implications, related to the findings highlighted in this paper. First, our analysis focused on a single course design taught by a single professor. Because the design of a course might have more influence on learning than the discussion mediums (Clark 1983, 2013), other course designs might be more or less effective in supporting critical dialogue. In particular, designers and instructors should carefully consider how to best encourage students to fully engage in asynchronous discussions as well as intentionally create an atmosphere of trust.

Second, the software used for the discussions may have hindered critical dialogue. In particular, students reported the discussion board format was cumbersome to use and did not encourage students to interact deeply with one another. Software designers should carefully consider how their designs support or constrain different types of learning, and course designers and instructors should carefully select programs that best support their intentions for interaction.

Third, course participants were education doctorate students enrolled in an online-only degree program. These students likely have more experience with and are more comfortable with technology than other students, and they most likely have above average self-regulation and learning skills. The needs of other populations—for example, undergraduate students—would likely differ. Future research should consider other populations of students.

Finally, our findings are based on student perceptions of the course. Although how students experience online learning is important and provides insight into the learning experience, students may not be fully aware of how the discussion formats impacted their learning.

As online learning becomes more prevalent, it is important that we consider the range of pedagogies it can or cannot support. Freire's (1970) critical pedagogy has the power to support students in the development of critical thinking, increase their awareness of others' positions, and encourage students to take action against inequity. Although promoting this type of online learning is difficult, investigating ways to do so may lead to learning that better supports innovation, problem solving, and social engagement.

Compliance with Ethical Standards

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