

Ubiquitous Inclusive Learning in a Digital Era

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Chapter 6

Video-Based Discussion: Promoting Presence Through Interactions in Online Higher Education Courses

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ABSTRACT

Video-based discussion is an emerging technology that can be used in online higher education courses as part of introduction, debate, personal exploration, and reflection activities. The video format bridges the distance gap in course conversations and offers benefits of providing contextual details, emotion, and individual personality while also enabling asynchronous flexibility. This chapter provides an overview of research in this area and describes an exploratory case study in which video-based discussion was used as part of an online graduate course. Data gathered included video postings and follow-up survey responses. Design guidelines and strategy recommendations are offered for planning and implementing video-based discussion activities in online higher education courses.

INTRODUCTION

Online learning technologies can be used to expand educational offerings and facilitate global educational connections. An essential component of online learning is discussion, as performance tends to improve with active engagement in online course discussions (Cheng et al., 2011; Dalelio, 2013; Goggins & Xing, 2016; Thomas,

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2013). These conversations can take place in real-time (referred to as synchronous) or at different times (referred to as asynchronous) (Farquhar, 2013; Winiecki, 2003). Asynchronous discussion platforms provide opportunities for greater interaction and active engagement between students and faculty through text, audio, shared files, and video (Devers et al., 2016).

Video-based discussion is a worthwhile technology to consider as part of a ubiquitous inclusive instructional strategy. Video-based discussion employs the asynchronous format that aids with meeting varying student schedules; however, participating in the discussions requires self-discipline from the students to set aside ample time for composing, viewing, and responding to discussion posts. Planning video-based discussion activities also involves complexities unique to this medium. For instance, students may experience technical issues and motivational and digital citizenship challenges that can affect the amount of engagement they have in a discussion (Hew, Cheung, & Ng, 2010; Rovai, 2007).

This chapter explores current research and practice in video-based discussion and describes lessons learned through an exploratory case study on the application of the video-based discussion platform, Flipgrid, as part of online course experiences. It discusses advantages of the video-based discussion technology for enhancing students' active engagement, supporting varied learning preferences, and fostering greater human interaction in digital learning environments. Recommendations are offered for structuring educationally stimulating course discussions and strategies. Design guidelines for planning and activities for implementing this emerging, interactive technology as part of online and hybrid learning experiences will be shared.

BACKGROUND

Interactions between instructors and learners are challenged by a transactional distance that spans more than just a physical separation, but involves educational and psychological distances as well (Gavan, 2015; Moore, 1993). Dialog, a core factor of transactional distance, is central to learner success and significantly influences learner intention to return for an e-learning experience (Goel, Zhang, & Templeton, 2012). Planning and forethought is necessary to design and facilitate meaningful and worthwhile online course discussions. The autonomous nature of learning that occurs in online courses can be a benefit as well as a challenge for students.

Difficulties with establishing pedagogical presence in online courses are critical issues to explore, and adequately addressing them can contribute to greater learner engagement and meaningful learning. Though many current Learning Management Systems (LMSs) offer a variety of tools for course organization and interactions, the potential of these systems is often not realized when course delivery and engagement is

limited to primarily text-based ways (Bates & Sangrà, 2011; Siemens & Tittenberger, 2009). Learning opportunities can be missed when students are not part of active discussion that supports social and cognitive presence.

This has particularly been a major challenge in the design of MOOCs (Massive Open Online Courses), in which large enrollment courses aim to expand educational access to everyone around the world but often come up lacking in key components of learning, instruction, and student engagement (Spector, 2014). Some conclude that lack of presence is a key contributor to low engagement and low completion rates in MOOCs (MOOCs Research Initiative, 2014). Failure to complete a course may start with not having the needed prior experience and skills in online learning and communication, which can result in declining engagement in course activities (Hill, 2015). MOOC and online course design in general could be improved through the application of 21st century technologies that support more cognitively and socially present interactive learning environments. Video-based discussion offers potential for helping to humanize virtual learning and to provide personalized, social interactions as part of course activities (Siemens & Tittenberger, 2009).

Using video in course discussions can address transactional distance challenges in online learning by providing interpersonal and contextual cues that naturally occur in face-to-face situations. Video-based discussions can reduce barriers to learning by expanding options for expression and communication, as espoused in a Universal Design for Learning approach (Lapinski, Gravel, & Rose, 2012; Meyer, Rose, & Gordon, 2014). Supporting multimodality through digital media can provide students with varied means to reflect and express their thoughts in course discussions (Enochsson, 2018). Using video-based discussions can also advance the quality of interpersonal communications and skill development in digital environments and support 21st century learning outcomes (Huang & Hung, 2013).

THEORETICAL FRAMEWORK

Transactional Distance

The exploratory case study that will be described in this chapter is grounded within two key concepts – transactional distance and the Community of Inquiry framework. The online learning environment presents readily apparent barriers stemming from the geographic distances among students and between students and instructors. Communication limitations stemming from conversing through a digital medium are less obvious, but equally relevant, barriers in the online learning environment. Thus, an important concern is not just geographic separation among learners and

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instructors, but separation that is related to psychological and communication distance (Gavan, 2015; Moore, 1993).

Moore's transactional distance theory defines psychological and social distances in online courses as important concerns in the areas of dialog, course structure, and learner autonomy (Goel et al., 2012). The relationship among these is such that when interactions between educator and distance learners decrease, learner autonomy needs to increase (Farquhar, 2013; Moore, 1993). A lack of adequate interaction between educator and learners, as well as among learners, can cause misunderstandings during online communication. Further, motivation may be impacted, with learners losing interest to follow-up on their course activities. It is clear that transactional distance can be a direct link to negative learning experiences (Goel et al., 2012).

Planning for activities involving online communication often necessitates additional thought and detail than planning for activities involving face-to-face communication. For instance, in face-to-face communication, speakers can express themselves with direct eye contact, verbal tones, and physical movements. This generally contributes to greater understandings between speaker and listener. Online communication, however, can take many forms and may or may not include the visual and nonverbal cues that are natural components of face-to-face conversations.

Further, one's pedagogical presence in a course, that is, the social and cognitive presence exuded as part of course interactions, is similar to one's physical presence in a face-to-face instructional environment. Therefore, all aspects of academic-oriented communication, including pedagogical content, psychological, cognitive, and social aspects, are worthwhile to consider as part of the design of such activities for the online environments (Holder, 2017). Video-based discussion as a course activity may address the issue of transactional distance and support pedagogical, cognitive and social aspects of academic-oriented communications.

Community of Inquiry Framework

The Community of Inquiry (CoI) framework contributes to the understanding of video-based discussion applications in online learning. CoI involves collaborative engagement of a group in pedagogical discussion so that participants share meaningful ideas and thoughts and reflect on others' presented opinions to inform their understandings of what has been discussed (Swan, Garrison, & Richardson, 2009). CoI identifies three types of presence in online learning environments - teaching, social, and cognitive presence - and recognizes how community can be personalized and humanized when presence is maximized. Each of these three types will be briefly described.

Teaching Presence

Teaching presence can be promoted through course materials and instructor interactions. Video, for instance, can be used to create and share introductory instructor bios. Teaching presence can also be supported through video-based feedback, which involves instructors creating screencasts or selfie-type videos that highlight areas for improvement and commendation in submitted assignments. Videos can be used to communicate content through instructor-created presentations and can also involve interactive components as well.

Social Presence

Social presence is defined by Garrison, Anderson, and Archer (1999, p. 8) as “... the ability of participants in the Community of Inquiry to project their personal characteristics into the community, thereby presenting themselves to the other participants as ‘real people’ through the medium of communication being used.” Social presence can support the sustainability of cognitive presence and directly relates to pedagogical outcomes (Garrison et al., 1999). As social presence increases in a collaborative community of learners, learner engagement is also likely to increase (Garrison et al., 1999; York, Yang, & Dark, 2007). Social presence is further supported when communicants consider the various aspects of communication, including cognitive and social understandings, to keep the community of inquiry effectively engaged in the absence of direct eye contact and physical movement (Holder, 2017).

Cognitive Presence

Cognitive presence is “the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication” (Garrison et al., 1999, p. 3). Thus, effective online communication occurs when both parties in a conversation (listener and speaker) convey a message and understand the meaning of what being said (Robinson, Segal, & Smith, 2018). From the perspective of CoI, cognitive presence is improved through the give and take of course interactions that contribute to deeper understandings of course content.

VIDEO-BASED DISCUSSION

Learning is facilitated through learner engagement in course activities, whether it be in a face-to-face physical learning space or online (Moore, 1993; Winiecki, 2003).

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It is clear, then, why discussion is viewed as a fundamental component of online education and considered such a valuable practice in enhancing cognitive and social presence and collaboration in both divergent and convergent forms (Borup, West, & Graham, 2012). Although discussion in the online environment may be different from that of face-to-face, fundamental conversational components are still evident, such as turn-taking, overlap, repair, and formulation; however, these components can differ in appearance and social effects (Borup et al., 2012; Winiiecki, 2003). Video-based discussion tools can support these essential components by facilitating the sharing of ideas within a course and contributing to decreased learner isolation and increased learner autonomy, social and cognitive presence, and motivation to participate actively in course content (Wisher & Curnow, 2003).

Advantages of Video-Based Discussion

The video-based discussion technology has some important advantages for participants. Using video for discussion can amplify learners' social and cognitive presence, support collaboration, and address variability of learner needs and preferences (Grant, 2017). It facilitates student engagement and creative delivery of ideas and thoughts within a community of inquiry in a digital learning environment (Siemens & Tittenberger, 2009). The asynchronous format means that students are able to record and post their video messages at flexible times of their choosing within specified timeframes (Borup et al., 2012; Winiiecki, 2003). Video-based discussion platforms, such as Flipgrid, are often freely available, requiring no login or account creation to be able to use them, and yet they still allow participants to be able to present their thoughts and share their understandings of the subject with their peers and instructors within a private virtual environment.

Due to the nature of the video medium, student postings in video-based discussions necessitate articulation of thoughts and ideas into one's own words. This requires additional processing of information to transfer content into one's own language (Devers et al., 2016). Video empowers learners to enact the power of voice and body language even in a virtual environment. Video-based discussions expand opportunities for global connections. On the instructor side, video provides opportunities for instructors to share thoughts, provide feedback, establish interpersonal relationships with learners, and engage in the pedagogical community as collaborator and guide (Scollins-Mantha, 2008). Unlike text-only discussion formats, video-based discussion enables participants to creatively and effectively respond to questions and engage in communication through thoughtful postings and replies to classmates' video comments.

Uses of Video-Based Discussion

Video-based discussions enhance social and teaching presence by providing non-verbal cues through the recorded postings. In a pre-service teacher technology course, for example, students remarked at how engaging in video-based discussions helped them to get to know their classmates better and enabled them to see and hear emotion in the posted comments (Clark, Strudler, & Grove, 2015). The video-based discussions also facilitated group identity formation that then supported course collaborative learning activities. This provided students with opportunities to develop as a team and promoted interpersonal and group communication skills. Synchronous discussion activities, such as web conferences, offer similar benefits, but asynchronous video-based discussion platforms provide the additional flexibility for participation at varying times over an extended period.

Video-based discussion platforms can also be used for end-of-course student reflections, key takeaways, debates, book reviews, literature circles, updates on individual explorations, and projects (Robey, 2017). They can facilitate communication in group projects and be used as part of informal training experiences as well. Accessing the platform through the Web or via an app on a mobile device enables students to create their video recordings from their workspaces or even outside settings. This feature renders contextual cues for both the student creating the post as well as for others who will view the post, and it locates the content of a recording within a student's surroundings. Such contextual cues support student cognitive information processing during the learning process as the specificity of cues during encoding of information can facilitate greater recall of that information (Driscoll, 2005). In other words, it *situates* the student's response, which can help instructors and other learners better understand the student's perspective (Young, 2017).

Implementation Challenges

The human interaction aspect of video-based discussions in online courses advances students' presence and engagement; but, as with the integration of most instructional technologies into teaching and learning activities, a number of implementation challenges often arise (Ertmer, 1999). Participating in video-based discussions involves needing some skills and equipment in order to create and post good quality video recordings (Haddington, Mondada, & Nevile, 2013). Poorly produced video recordings, lack of access to computers or mobile devices, and limitations in Internet access can challenge users to full participation in such activities, and these challenges may be compounded for students from lower socio-economic strata (Makki et al., 2018).

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Repetitive videotaping to be able to capture one's "best" delivery of thoughts for a discussion can contribute to increased levels of frustration and anxiety during the activity (Huang & Hung, 2013). Preparing a script or outline before recording is recommended (Grant, 2017); however, students may feel compelled to memorize their scripts in order to deliver them flawlessly for the camera, which can be stressful for them. Further, some students may read their scripts without looking at the camera, limiting the connection potential through the medium. Differences in language can also create difficulties for students, particularly for students who are used to having academic discussions in text format that enables them to use translation services. Further, video may not be an appropriate match for the objectives, such as when framing arguments in written form is a key course goal.

Video-based discussions can also present unique challenges for instructors. Assessment of the quality and quantity of student participation is time-intensive, and the format of student performance feedback can differ from the performance itself. For example, though discussions are video-based, feedback may be verbal or written. There can be a delay between student postings and instructor review; consequently, performance detail may be lost due to this delay or limitations of feedback format (Pea & Lindgren, 2008).

The purposes and expectations for video-based discussion activities can differ from that of other discussion formats. For instance, video postings tend to involve common language, as speakers aim to explain and talk about their ideas to the camera. This is contrasted with threaded text-based discussions, which may yield postings that embody use of complex, academic language (Devers et al., 2016). The overall amount of time required of instructors to view and respond to video postings can be quite lengthy. This time commitment is an important consideration, as video posts often require viewing in their entirety in order to be able to adequately respond or assess. Skimming or scanning through postings at a surface level (as one may do in text-based discussions) is limited in the video format. Video-based discussion prompts, expectations, and activity structures should thus capitalize on the affordances of the medium while managing the time and resource demands needed for its use in online learning.

Video-Based Discussion Tools

Video-based discussion can be conducted using technologies that support the creation or uploading of video clips, and it is further enhanced through threading features that group together initial postings with their responses. Video-based discussion can be done within social media and video sharing platforms, such as Google+, Facebook, and YouTube, though the many steps required to create, post, view, and comment on videos can impede implementation and participation. Poorly produced

videos and poor video quality have the potential to distract from the messages of video postings, which may negatively impact learner experience.

Specialized tools, such as Flipgrid, address these concerns, as they are designed specifically for video-based discussion and are intuitive to use by instructors and students. Flipgrid is a recent innovation out of the University of Minnesota. Charles Miller, an associate professor and former co-director of the Learning Technologies Media Lab, created Flipgrid out of a need to continue in-class discussions with his 12 graduate students when he traveled for his research work. His first version of the tool featured the framework for a threaded video chat system, and students posted video responses to his questions that enabled him to then add replies from a distance (Young, 2017).

The tool had great student appeal, as it helped students to feel more connected to their fellow learners and part of the class community. Flipgrid has since been adopted in online courses as an alternative to text-based threaded discussion activities. It currently supports video postings of up to five minutes and customization using stickers and tagging. It can be accessed through the Web or via a mobile application, enabling users to verbalize their thoughts and ideas from anywhere, such as one's work environment, home setting, or outdoor public space.

Posts can be recorded and re-recorded, as needed, until they sufficiently capture on camera what students want to communicate in the discussion. Emoji reactions can be used to respond to others' videos, and reply postings are grouped (or "threaded") under the associated initial postings. At the time of this writing, Flipgrid does not contain video editing capabilities within the platform. Users can, however, upload edited videos, rather than record within the platform. Such affordances and tool features are explored within the case study described next.

CASE STUDY

Video-based discussion was investigated using an exploratory case study approach. The case study methodology was selected, as it enables empirical inquiry that focuses "on a contemporary phenomenon within some real-life context" (Yin, 1994, p. 1). The asynchronous video-based discussion platform, Flipgrid, was selected for this study and incorporated into a fully online graduate course on instructional technology that was offered through the Curriculum and Instruction Master's program at a large public university in the south central United States during Fall 2017. The second author was the instructor for this course. After the course concluded, video discussion postings were analyzed, and a follow-up survey was distributed to participants to gather their perceptions of the utility and effectiveness of this medium as part of their learning. The study was approved by the university Institutional Review Board.

Analysis of Video-Based Discussion Postings

A total of 359 video postings from the 115 students enrolled in this course were analyzed by two researchers using a researcher-developed Flipgrid Video Analysis Instrument (see Figure 1). Participants were students in the Master of Education (M.Ed.) program in curriculum and instruction. At the conclusion of the course, they were between 21 and 49 years old, with a median of 28 years. The researchers initially coded eight video postings together, discussing how in depth each item on the instrument should be coded. The researchers then coded 20 video postings separately, followed by a discussion of all discrepancies until 100% agreement was reached. The remaining video postings were divided between the two researchers and coded using the instrument.

Study participants recorded 7.5 hours of postings as part of a structured discussion in the course. Instructions for the activity were provided in a written handout within the course Learning Management System. Participants were asked to take their own “courageous educational technology adventure” in which they could select an educational technology mentioned in one of the provided course videos, readings, or resources and then try out the tool, creating and experimenting with it. They were prompted to consider how the tool could be used in their teaching and to explore ideas for how it might support instruction and learning. They were asked to reflect on the following questions:

- What did you learn?
- What challenges did you encounter?
- What did you enjoy most?
- What would you like to do next with this educational technology?

Participants were then instructed to record about a 90 second video posting in which they described their educational technology adventure and their reflections about it. The handout recommended that students write or outline what they planned to say in their recording prior to creating their video posts (see Figure 2). They were informed that they could use any device that had a camera, including a smartphone, tablet, laptop, or desktop computer with a webcam attachment. Students were able to record, review, and re-record their postings until the recordings were satisfactory. Instructions were provided in written format so that they could be easily referenced as participants completed the posting steps.

After completing their initial video posting, students were asked to record replies to at least two of their classmates’ video clips. Instructions specified that replies should be thoughtful comments that extended the discussion in meaningful ways

Figure 1. Flipgrid video analysis instrument

Flipgrid Video Analysis Instrument

1. Study code:
2. Posting number:
3. Length of posting: seconds
4. Posting date/timestamp:
5. Recording location (*Select one.*):

<ul style="list-style-type: none"> <input type="radio"/> Home interior <input type="radio"/> Home exterior <input type="radio"/> Workplace interior <input type="radio"/> Workplace exterior <input type="radio"/> Other interior: <input style="width: 80px;" type="text"/> <input type="radio"/> Other exterior: <input style="width: 80px;" type="text"/> 	<ul style="list-style-type: none"> <input type="radio"/> University interior <input type="radio"/> University exterior <input type="radio"/> Vehicle interior
--	--
6. Flipgrid features applied (*Select all that apply.*):

<ul style="list-style-type: none"> <input type="radio"/> Sticker <input type="radio"/> Drawing <input type="radio"/> Other: <input style="width: 80px;" type="text"/> 	<ul style="list-style-type: none"> <input type="radio"/> Emoji reaction <input type="radio"/> Video upload
--	--
7. To what extent is reading from a script apparent? (*Select one.*)
 - Reading from a script comprises most of the posting.
 - Reading from a script comprises about half of the posting.
 - Reading from a script comprises a small portion of the posting.
 - No reading from a script is apparent in the posting.
8. To what extent is eye contact attempted with the camera? (*Select one.*)
 - Eye contact with the camera is apparent in most of the posting.
 - Eye contact with the camera is apparent in about half of the posting.
 - Eye contact with the camera is apparent in a small portion of the posting.
 - No eye contact with the camera is apparent in the posting.
9. Additional comments regarding the video posting:

(e.g., needed to be more than “Great post!” or “I completely agree!”). A rubric was used to assess student contributions to the discussion (see Figure 3).

Out of the 359 total video posts in this discussion activity, it was found that participants on the whole followed the minimum posting guidelines, averaged about three postings each. Every participant posted an initial posting, and most participants (93%) met the minimum two reply expectation. Initial postings received an average of two reply postings, with some initial postings having as many as seven replies. About 26% of the video postings also received emoji reactions, indicating that viewers “liked” the video posting (heart emoji) or thought it was a great idea (light

Video-Based Discussion

Figure 2. Instructions for how to use Flipgrid

1. Write or outline what you plan to say in your response, keeping in mind your allotted amount of recording time. Use a webcam or device that has a camera, such as your phone, tablet, or laptop. Click the + **Add a response** button.
2. When you see a pop-up message, select the camera and microphone you would like to use and click **Allow**. Smile! Look at your camera, and click the camera button at the bottom center of the recording frame, and record your response. It will give you a countdown of how much time you have remaining. If you make a mistake or otherwise want to re-record, you can click the trash can and start again.
3. When you have made a satisfactory recording, click the arrow button to review and continue to take your selfie! Then, enter your name and, optionally, an email address, which will give you the advantage to be notified of any replies to your response and to be able to delete your response later. Click the **Submit my video!** Button, and you should see **Success!**
4. Next, you need to record replies to some of your classmates' video clips. To do this, click on a classmate's picture to watch his/her video, then click the **Add a reply** button. Record your reply by following similar steps that you just did to record your initial video posting.

bulb emoji), showed deep thinking (thinking face emoji), demonstrated success or ambition (rocket emoji), or made an impressive argument (mic drop emoji).

Students took “selfie” pictures after recording their video postings, and the selfies appeared as thumbnail images in the Flipgrid discussion grid. Flipgrid provides options for users to customize their selfies with stickers and drawings; and this feature was applied in about half of the postings. For instance, students added hats, sunglasses, seasonal decorations, and hashtags, such as #Agree or #Math.

Even though students were instructed to aim for about 90 seconds of recording time for their posts, the maximum recording time was set to two minutes within the Flipgrid discussion grid. Students came close to the 90 second target, with posting lengths averaging 75.5 seconds. The average length of initial posts (108 seconds) was generally longer than the average length of reply posts (60 seconds). Two students recorded their initial postings in two-part recordings, because they commented that they could not complete their posts within the two minute time limit. For coding purposes, the researchers combined their two recordings into singular initial posts.

Most of the postings (about 75%) were completed during the typical American work week (Monday-Friday), with the remaining postings completed on weekends (Saturday/Sunday). Participants completed postings typically in evening (5:01-9 PM) and late evening (9:01 PM-midnight) hours, with over 58% of the postings completed during these times. Another popular posting time frame was during afternoon hours of noon to 5 PM, in which 25% of the postings were completed. Thus, about 83% of the postings were completed between noon and midnight, as illustrated in Figure 4.

Figure 3. Rubric for assessment of video-based discussion participation

Criteria	Excellent	Fair	Needs Improvement
Prompt response	5 points Posts a well-developed video response (about 90 seconds) for the discussion prompt - “Describe your educational technology adventure and your reflections about it.”	2.5 points Posts a video response for the discussion prompt, but it does not adequately address all aspects of the prompt or communicate thoughts clearly.	0 points Does not post a video response for the discussion prompt.
Reply 1	2.5 points Posts a thoughtful reply video to a classmate’s video response that extends the discussion in a meaningful way.	1 point Posts a reply to a classmate’s video response, but it does not extend the discussion in a meaningful way (e.g., needs to be more than “Great post!” or “I completely agree!”).	0 points Does not post a reply to a classmate’s video response.
Reply 2	2.5 points Posts a thoughtful reply video to a second classmate’s video response that extends the discussion in a meaningful way.	1 point Posts a reply to a second classmate’s video response, but it does not extend the discussion in a meaningful way (e.g., needs to be more than “Great post!” or “I completely agree!”).	0 points Does not post a reply to a second classmate’s video response.
Total = 10 points			

Participants recorded their video postings in a variety of environments, with the vast majority (89%) completed in home settings (see Figure 5). While many participants appeared to be filming in home office spaces, recordings were also completed in other rooms, including kitchens, living rooms, bedrooms, and even closets. Other recording settings included workplaces (9%) and vehicle driver’s seats (2%). None of the postings were coded with recording locations of workplace exterior or university interior/exterior. Of the 32 postings recorded at a workplace, half of them were completed during typical workday hours (8 AM to 5 PM).

Video-Based Discussion

Figure 4. Posting time of day

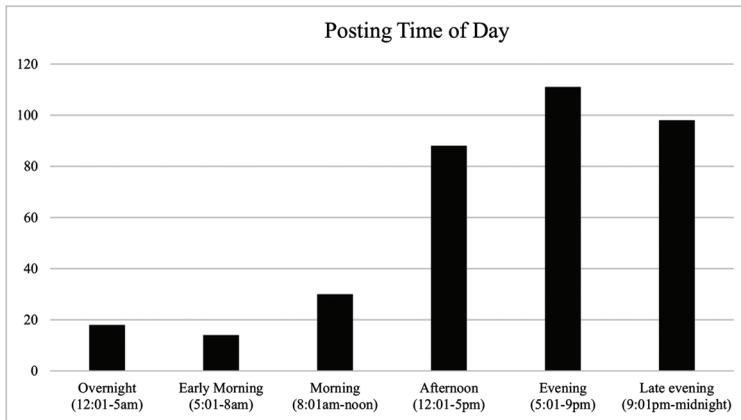
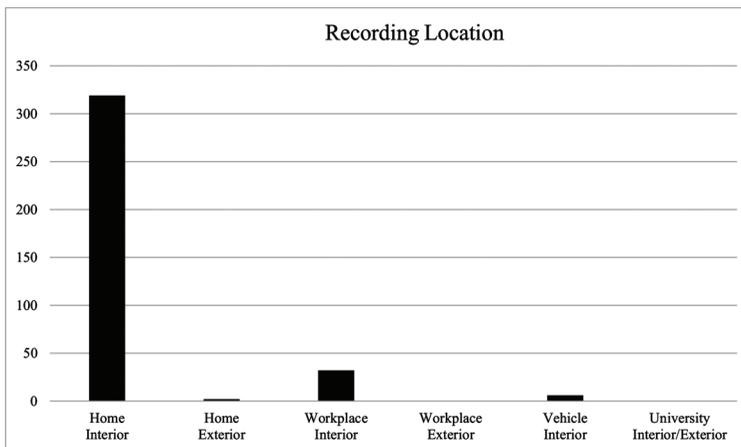


Figure 5. Recording location



In most (59%) of the recordings, participants did not appear to be reading from a script or using notes. In an additional 18% of recordings, participants only glanced at a script or notes occasionally. When participants appeared to be using a script or glancing at notes, it was more evident in initial postings (71%) than reply postings (27%). Further, it was found that in about 26% of the initial postings, participants read directly from a script or relied heavily on notes, appearing to be reading a text discussion posting that they would have otherwise posted on a discussion board. This is contrasted with only 8% of reply postings in which participants were observed to be reading from a script or relying heavily on notes.

The researchers observed that most participants made efforts to make eye contact with the viewers of their videos. However, it was found that eye contact with the camera occurred less frequently in initial postings than reply postings. For instance, participants in 23 of the 115 initial postings (20%) made eye contact with the camera in most of their posting as compared to 70 out of the 244 reply postings (29%). Even when participants had minimal eye contact with the camera, it was observed that they often demonstrated effort to speak directly to viewers. In these cases (44% of total postings), the learners appeared to not have been cognizant of their camera locations, as their eyes focused on their screens, rather than the cameras. In about 20% of the postings, participants made minimal eye contact with both their cameras as well as their screens; instead, they were observed to look up, around the room, or down at the floor or desk.

Student Perceptions of Video-Based Discussion

The survey was distributed after the conclusion of the course. It included five sections – 1) demographic items, 2) the Flipgrid for Teaching and Learning Questionnaire (FTLQ), 3) Flipgrid Social Presence items, 4) Technology Self-Efficacy items, and 5) open-ended items regarding benefits and challenges of participating in video-based discussions using Flipgrid. The FTLQ is based on the WhatsApp for Teaching and Learning Questionnaire (WATLQ) that was developed and validated by So (2016). The Flipgrid Social Presence items were based on the Community of Inquiry Survey Instrument (Arbaugh et al., 2008; Garrison, Cleveland-Innes, & Fung, 2010; Swan et al., 2009). The Technology Self-Efficacy items were based on the Perceived Computer Self-Efficacy Scale (Askar & Umay, 2001). The open-ended items were developed by the researchers.

Twenty participants completed the survey, providing additional insights into learner perspectives as related to video-based discussion. Though this was the first time that most respondents had used Flipgrid, the majority (75%) indicated that they felt comfortable using the tool. Most (75%) also felt that discussions on this medium brought new opportunities for learning, were a quicker method of participating in course discussions than text-based discussions, and helped students get to know other course participants. Respondents were also positive about how the video-based discussion platform was more flexible than text-based discussion boards and supported multimedia learning, as 70% of respondents agreed to strongly agreed with these statements.

Several themes emerged from responses to the open-ended survey items. The themes will be presented and supported with response excerpts. The first theme that emerged is that video-based discussion supported interaction and social connections within the course:

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Seeing my classmates on video was beneficial to learning, because it gave me more of a sense of camaraderie and common purpose than you sometimes get in the strict text-based discussions.

With Flipgrid, I get to see the people and hear how they talk and interact with them in a way that feels more real/concrete than purely textual communication.

It allowed me to get to know my classmates by face, instead of just a name.

The video medium enabled students to better communicate their thoughts, as it captured not only their words but also tone and emotion:

Sometimes when writing a message, especially with academic language, tones are misconstrued as being harsh. With Flipgrid, you are able to hear the inflection in others' voices. This helps points get across more effectively.

I enjoyed the face to face aspect and the ability to see the nuances of the other person's perspective. It helped develop more of a sense of community than a text discussion board.

The video-based discussion addressed varying audio and visual learning preferences:

It's easier for me to talk about my ideas than to write them. It helped me express my thoughts more effectively and helped me understand other participants' points of view more clearly.

I find that I can better articulate myself and my thoughts orally. Also, it's just more natural and humane to just talk instead of putting it in words which can make it sound more formal.

It allows students to display mastery of subject content via digital resources. This allows scholars with various learning styles to demonstrate student synthesized products.

The video format was a welcomed break from the typically writing-heavy online course activities:

Flipgrid gave me a chance to participate with the coursework in a new way that helped to give me a break from the endless writing. Because I had this other method

of participation, it went a long way in keeping me engaged and curious about the content of our studies.

I know I looked forward to talking more than writing my responses.

Having to video record their responses prompted learners to consider not only the words of their response but the delivery of it as well:

This was my first time to use Flipgrid, and I would say the novelty made it a more memorable experience. I still had to write down my talking points but still it somehow felt more spontaneous.

It really made me think on what I was going to say and how I was going to say it. I had to practice to ensure what I was saying [would] come out clear and concise.

The additional attention to the delivery aspects of their video discussion postings was also viewed by some respondents as a challenge to discussion participation:

It was uncomfortable being on screen. I felt like I had to get dressed and put on makeup in order to be presentable for a recording. I also had to practice what I was going to say, which was in my opinion, a waste of my time. It was like I was a journalist getting camera ready and rehearsing lines.

I experienced nervousness while recording myself. Since I knew I had a short time to verbally express an opinion, I knew I had to rehearse what I would say beforehand, which is kind of hard for me.

Creating work that fit the time allotment requirement. Felt like I was “dragging it on” in the video and saying “ummm” a lot.

Some respondents seemed hopeful that they would become more comfortable being on camera and hearing their own voices as they gained experience in participating in video-based discussions:

The first time, I think I basically read a script while standing in front of a bookcase so I would look smart. Later on, after using it a few times, I became more comfortable with it and didn't stress myself out near as much when it came to preparing.

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I would have never recorded myself in either audio or video if it wasn't for the course. I have always felt uncomfortable hearing my own voice. Flipgrid gave me the confidence in trying something new.

Overall, findings from this exploratory case study suggest that the video-based discussion enhanced student and instructor presence, promoted learner engagement, and provided benefits of richer, situated comments within students' related professional and daily contexts. The video-based discussion format provided students with opportunities to express their thinking alongside contextual and emotional details as part of their discussion contributions. The video format enhanced learner presence and offered flexibility in how learners participated in the course discussions.

SOLUTIONS AND RECOMMENDATIONS

The results of this case study have implications for both educators and instructional designers regarding the planning and facilitation of video-based discussions (see Figure 6). As observed in a portion of the video postings and described in the open-ended survey responses, some learners experienced anxiety when being filmed. Planning for future video-based discussion activities could address this in part through development of pre-discussion materials and instructions that establish the expectations of the discussion and incorporate modeling of the medium. Instructions could even be provided in multiple formats, such as written, infographic, and video screencast, to mirror the variety of communication means. In addition, future possible tool features, such as options for editing or adding background music or animated characters, could offer further customization and aid learners in becoming more comfortable with the video discussion format.

Discussion questions that prompt learners to relay personal experiences, such as the discussion prompt used in the case study, seem to be a good fit for the video discussion format. Structuring the expectations for participation can also help learners to self-regulate their contributions and engagement in the discussion and can ease apprehension that learners may have regarding this new medium. Developing and communicating protocols that provide structure and clarify expectations is an effective strategy in text-based discussions (e.g., Chen et al., 2017) and can similarly be a worthwhile component of the instructional design of video-based discussions. Instructors and designers of video-based discussion activities should give consideration to the amount of time involved for students to not only view and respond to video postings but also devote to the preparation and delivery aspects of recording the discussion posts.

Figure 6. Recommendations for implementing video-based discussion

- Clearly communicate the participation expectations of the video-based discussion activity.
- Model how to use the video-discussion medium to alleviate initial student anxiety.
- Provide pre-discussion materials and instructions in multiple formats, such as written, infographic, and video screencast.
- Use discussions questions that prompt students to reflect on and share experiences related to course topics.
- Plan sufficient time for students to prepare, record, view, and respond to video-based discussion postings.

FUTURE RESEARCH DIRECTIONS

The case study illustrates how video-based discussion can contribute to learners' social presence in online courses. Video-based discussion platforms, such as Flipgrid, can be used in a variety of ways to support student engagement and learning. For instance, video-based discussion can facilitate book study conversations in which participants share their reflections about the books (Burns, 2018). It could be leveraged to aid in communication among group members during the planning and development of a group project. It can also be used for sharing ideas, projects, locations/contexts, and experiences with others. Future research could evaluate the impact of implementing video-based discussion for such uses, as well as within the context of other content area courses and programs. Further investigations could also focus on how learners interact on a video-based discussion platform.

In the case study, most of the initial discussion recordings came close to the allotted two minutes of provided recording time, averaging 108 seconds per posting. Some of the students' postings appeared and sounded rushed, and several students commented about how they did not feel that they had enough time to completely convey their thoughts. Two students even circumvented the time limit and recorded their initial postings in two parts so that they would have more recording time. Thus, consideration should be given to the connection between the extent of the discussion question and the amount of time that a learner could successfully respond to that prompt. While extending the allotted time could address this issue (e.g., Flipgrid supports up to five minutes of recording time per post), longer posts would simultaneously increase the amount of time that learners (as well as instructors) spend on viewing and responding in the discussion. Future studies are needed to

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determine the impact of post length on the quality and effectiveness of video-based discussions.

Further research could also address needed features of video-based discussion platforms for use in academia. For instance, post-production capabilities could impact the amount of time participants engage with the creation of their posts. The relationships among resolution, audio quality, and lighting on receiving more replies and views could be investigated in future studies as well. Finally, future research could address the limited survey response rate of the present study by surveying and interviewing students during the course in which they are using video-based discussion. This would likely render additional insights into learner perceptions of usefulness, benefits, and challenges of the technology.

CONCLUSION

Video-based discussion provides opportunities for learners to enact social presence in online courses and to practice digital citizenship skills. In addition to threaded reply videos, users can respond to others' postings using emoji reactions to express that they "love" a video post or that they think the post identifies a great idea. Video-based discussion promotes individual reflection and can be used to prompt students to articulate their thoughts and ideas in a more natural, perhaps spontaneous way. Video postings thus enable users to express their individuality, and they serve to humanize online learning, addressing some of the interpersonal communication challenges in online courses.

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KEY TERMS AND DEFINITIONS

Asynchronous: Online course discussions that take place at different times.

Cognitive Presence: Construction of meaning through communications within a Community of Inquiry.

Community of Inquiry: A group formed around pedagogical interactions and exploration in which thoughts and ideas expressed by its members inform conceptual understandings of others in the group.

Online Discussions: Course-related conversations that take place in a virtual format.

Social Presence: Presentation of personal characteristics that present participants in a Community of Inquiry as “real people.”

Teaching Presence: Indications of instructor involvement within a virtual learning environment.

Transactional Distance: A separation in online learning designs that involves physical, educational, and psychological dimensions.

Video-Based Discussion: A threaded, asynchronous online discussion format in which participants record their postings as video clips.