Text-Based versus video discussion boards to promote a sense of community with graduate online students: A student perspective

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Abstract

For university administrators creating an engaging online course where students feel part of an online community can be challenging even for the most experienced online educator. Online discussions are a common tool used to connect students in online courses, but it is often limited to text-based posts. This research paper will compare the use of text-based versus video-based discussions in online courses to ascertain students' perceptions of social presence in the course room. This paper will discuss which method of discussion would be an appropriate exchange for a live classroom discussion, this is not always the case online. Research has demonstrated that text-based discussions often do not promote genuine communication and an alternative to text-based discussion forums is video-based discussion. The strategy of text-based discussion is employable in most popular learning management systems such as Canvas or Blackboard or with a variety of other tools such as YouTube or Voice thread to accommodate the use of video discussion in online courses. Researchers have been keenly exploring the implications of these two formats on engagement, comprehension, and overall effectiveness. This study delved into the key findings from community experiences by online students comparing and contrasting text-based and video-based discussions, examining their impact, and shedding light on their relative advantages and disadvantages. The purpose of this research paper was to compare the sense of community experienced by online students taking part in text-based versus video-based discussions. The implications of this study indicated that most of the students reported that they preferred text-based discussions; however, the students in this study felt video-based discussion boards promoted the ability to form connections with their learning community.

Introduction

Enrollment in online programs, in the United States, continues to increase and has increased for the fourteenth straight year with over 3.2 million students enrolled exclusively in online classes (National Center for Education Statistics, 2018; Seaman et al., 2018). The US has seen online course registrations grow approximately 10% from 2018 to 2019 while the total number of course registrations remained unchanged. At the same time, online education has a 20% higher attrition rate than face-to-face programs. This attrition has been attributed to a lack of engagement leading to students feeling isolated (Purarjomandlangrudi et al., 2016; Stott, 2016). Furthermore, the pandemic has moved many more students into the online environment as many colleges across the United States were forced to quickly move their classes online. It is currently unknown when full face-to-face instruction will resume.

As enrollments in online education continue to grow and the future of higher education course delivery remains unknown, it is imperative that educators design courses that are engaging and provide collaboration among students as well as faculty. Traditionally, online faculty have relied on text-based discussion forums to stimulate student collaboration and engagement. These forums usually require that students respond to a question with an initial reply and then a minimum of two replies to two other students. While this method of discussion would be an appropriate exchange for a live classroom discussion, this is not always the case online. Research has demonstrated that text-based discussions often do not promote genuine communication (Clark et al., 2015; Cummins et al., 2016; Denison & Shurts, 2019).

Research objectives

The objective of this research is to investigate the effectiveness of using text-based versus video-based discussion boards in graduate and higher education in a private university in Campbellsville, Kentucky.

Significance of the study

This study seeks to investigate students' perspectives of text-based versus video-based discussion boards to promote a sense of community among graduate online students. The results of the study will help teaching organizations to care for knowledge management to improve the usage of discussion boards toward students.

Literature Review
Text-based Discussion Boards

Online discussions are similar to classroom discussions in terms of content. In a traditional classroom, the lecturer speaks to the students, and the students either speak to the instructor or one another. Yet, most dialogue is one-dimensional, with only one conversation taking place at a time. In other words, either the instructor speaks and a student responds, or one student speaks to another. Parallel talks (i.e., numerous conversations occurring at the same time) in a traditional classroom can be noisy, chaotic, and cumbersome unless students are divided into groups. Conversations can, however, take place in parallel on online discussion boards.

Online discussion boards can occur in various media. The literature reflects the existence of debates in numerous mediums. According to Martínez-Cerdá, Torrent-Sellens, and González-González (2018), "The development of collaborative skills by online university students can be supported through several advanced tools for information communication technology-supported pedagogical practices" (p. 1067). As a result, the researchers discovered advantages to alternative methods to online debates. While this research's conclusions are limited to text-based online discussions, the researchers may be generalizable to online discussions using other media.

Another research examined the topic of possibly sensitive internet exchanges. Littlefield and Bertera (2004) investigated the use of online conversations for social work courses and concluded that "online discussion boards may be especially effective for sensitive or contentious topic matter such as oppression and diversity" (p. 132). Furthermore, online discussion boards make it possible to have private conversations. As a result, students can hold critical discussions in private. Asynchronous online discussion boards allow students to carefully consider how they wish to convey their opinions, with less fear of making inadvertent or insensitive slips of the tongue. Hence, online discussion boards enable course design considerations to allow for in-depth discussions on delicate themes.

Online discussion boards can be found on a variety of platforms, not simply a single learning management system. Camus et al. (2016) investigated the usage of Facebook as an online discussion medium and investigated the effects on student involvement, learning, and overall course achievement.

According to Camus et al. (2016), different forms of discussion forums appear to affect "classroom dynamics and student learning in different ways" (p. 84). Specifically, Facebook appears to be a good setting for students to interact and participate; nevertheless, Facebook participation appears to be relatively superficial, at least in some cases. According to Camus et al. (2016), "the University-sponsored LMS [learning management system] may be a more effective instrument for motivating students to create coherent arguments and apply course information in other contexts" (p. 83).

Other studies looked into the social and online presence aspects of online learning content analysis. Henrikson (2020) investigated how online lectures might be used to increase student engagement. "Relationships between teaching presence, social presence, and cognitive presence in online learning contexts," (p. 17). The study included twenty graduate students as participants. The research looked at content from screencasts and discussion boards. The relevance of "social presence through involvement and collaboration among participants" was highlighted by the researcher (Henrikson, 2020, p. 27). Additionally, Henrikson noticed the interaction between "the self-directed nature of online learners and phases of cognitive presence that may change depending on the experiences of individual learners" (p. 29).

In addition, the study noted "the connection of cognitive, social, and teaching presence" (Henrikson, 2020, p. 21). A major conclusion said that any "online learning structure should provide students with numerous opportunities to maximize their engagement and learning." This interaction can be seen in learning opportunities such as presentations, group projects, discussion boards, and other collaborative assignments" (p. 21). Henrikson's research emphasizes the significance of student participation. According to the study, "it is critical for online instructors to understand how to support a learner-centered online environment that improves engagement and cognitive presence by aligning practice with adult learning theories" (Henrikson, 2020, p. 28).

One research looked at the potential of using online discussion boards to improve the learning experience. According to Krentler and Willis-Flurry (2005), "the use of technology in the classroom does improve actual student learning, and this link is controlled by student characteristics" (p. 316). As a moderating variable, the research constructs included technology use, student learning, and individual differences. Major, Class Status, Hours per Week on the Internet, and Term Type were the specific moderators. The sample consisted of 549 students from six sections of marketing principles. The learning-enhancing technology was online discussions, and the researchers observed statistical significance with $F_{(72.578, 38)} = 3.48$, p 0.001. The coefficient of determination revealed that "the postulated model explained 24.6% of the variance in student learning" (Krentler & Willis-Flurry, 2005, p. 318).

The Need for Advancement in Discussion Boards

There have been some positive developments in the advancement of technologies and methodologies aimed at increasing both social presence and student engagement, particularly in the incorporation of video and audio into higher education courses, it is clear that discussion boards have remained "stuck" in a text-based format that is nearly identical to their original applications. Failure to adopt new technologies and methodologies is a major impediment to providing the best educational environment possible. As Garrison et al. (2009) note, "The challenge educators face today is creating a community of inquiry in a virtual environment" (p. 9). Relying solely on the older method of online education, specifically text-based discussion boards, may no longer be sufficient. Garrison et al. (2009) posit, "It may be that different media have different potentials to address cognitive, social, and teaching presence" (p. \s9). Consider how the iPad or iPhone, which is only ten years old, has changed the way students communicate with both their peers and their instructors.

Moreover, another group of researchers explored into using videos to improve the quality of classroom-text discussions. According to one group of researchers, teacher-video lectures "may provide a rich setting for learning through coaching" since they capture some of the intricacies of traditional classrooms (Matsumura et al., 2019, p. 73). In online environments, video lectures can serve as a "springboard for collaborative and thoughtful interactions" (Matsumura et al., 2019, p. 65). As a result, the video lessons act as a platform for the online text-based discussions.

Additionally, several advantages of synchronous versus asynchronous approaches to online discussions have been revealed by research, which may demand course modifications (Molnar & Kearney, 2017; Sage, 2013; Vess, 2005). Nonetheless, each strategy has advantages and disadvantages. The advantage of synchronous communication is the ability to respond quickly. Asynchronous communication has the advantage of convenience in communicating as well as the ability to carefully formulate thoughts. The use of synchronous or asynchronous communication in online discussions might be beneficial. What exactly is the difference between synchronous and asynchronous communication? Synchronous communications take place in real-time. Real-time communications are those that are linked to a single moment in time, such that one point of communication interacts with another point of communication instantaneously. Real-time communications occur during phone talks, for example, because the interactions require fast responses, alternatively another way, one point of communication synchronizes with another.

Asynchronous communications do not necessitate instant responses; yet, temporal delays may occur. Email and SMS messages, for example, occur asynchronously. According to Molnar and Kearney (2017), "asynchronous discussion occurs with no predetermined day or time, whereas synchronous decision occurs in real-time" (pp. 14-15). In other words, one communication point does not actively synchronize with another communication point. In one case, the literature indicated a strength in synchronous communication. Molnar and Kearney (2017) investigated communication between two groups of students for a single online class and the cognitive presence of each group. Cognitive presence, according to the researchers, is "the amount to which individuals in a community of inquiry can generate meaning through prolonged conversation" (Molnar & Kearney, 2017, p. 15). Both student groups responded to online discussion questions, with one group communicating synchronously (through video web conferencing) and the other asynchronously (by online discussion board). The study found that the synchronous communication group had a higher level of cognitive presence. Furthermore, larger levels of cognitive presence appeared to be associated with higher levels of critical thinking.

Another study found that teachers who used synchronous discussions had a positive experience. Cook, Dickerson, Annetta, and Minogue (2011) investigated in-service teachers' opinions of online learning settings and discovered that online discussions were successful. "Post-hoc analyses show that teachers who participate in synchronous text conversations evaluate their online learning experiences as more introspective, engaged, and supportive," according to the study (Cook et al., 2011, p. 73). As a result, synchronous discussion boards could be a beneficial component of an online course design. Dixon (2014), on the other hand, acknowledged the extensive use of online discussion boards while also recognizing the lack of online discussion frameworks (p. 6). Thus, the literature acknowledged research limitations in online discussion boards. Therefore, course planners must consider the potential effects of online discussion boards on their courses. Again, these gaps in the literature justify the need for this study's conclusions and additional research.

Video-Based Discussion Boards

Several studies have investigated the use of video responses in discussion boards instead of text-based discussions to see if these, along with other factors, could increase student course engagement.

These studies have demonstrated varied results while also using a variety of technologies for these video discussions. There are few studies on the use of video discussions and fewer are still being replicated using one method. Cummins et al. (2016) used VoiceThread to study student perceptions and participation patterns related to asynchronous video discussion in an inter-professional graduate course. VoiceThread is a cloud-based, interactive, collaboration and sharing tool that enables students to build online presentations by adding images, documents, videos, and other media to which other users can add comments for discussion. Students were encouraged to use video posts versus audio or text. When asked which mode they preferred, 40% selected video, 30% chose audio, and 20% preferred text. Data from 10 student interviews and surveys indicated that student perceptions of social and teaching presence were significantly higher when using video posts. Students also indicated that the ability to view their classmates permitted them to get to know one another. On the other hand, they did note that preparation for video discussions required a greater time commitment than other methods. Faculty noted that it took some time for them and students to learn how to use VoiceThread. Additionally, one challenge noted was that while text-based posts are easily viewed and read, video posts take longer to access and view (Cummins et al., 2016). Using a different video-based platform, Clark et al. (2015) compared video with text-based discussions in an online teacher education course. The technology used for the video discussion was Google+ and was placed within the LMS.

Based on data from interviews and surveys for the 16 participants, the researchers found that video discussions were more effective in creating social and teaching presence than text-based discussions. Participants stated that the video discussions gave them the ability to see the faces of classmates and promote feelings of connectivity while lowering feelings of isolation (Clark et al., 2015). There is some research indicating that video-based discussion questions can be an effective way to engage college students in class discussions.

The Need for Video-Based Discussion Boards

The age-old use of asynchronous discussion boards could be on its way to becoming extinct. COVID-19 has shown upper administrators and faculty that students can flourish online just as well as in the classroom (Milovic & Dingus, 2021). Increased technological advances have opened the door for exciting ways to enhance the stale discussion board pedagogy of the past. Past discussion boards that have the student answer a question and then respond to one or two classmates tend to produce answers that are not focused entirely on the question and feel strained sometimes. It is as if the student is just trying to achieve the minimum word count without considering their answer(s) (Milovic & Dingus, 2021). Critical thinking skills, engagement/social interaction, and community are not typically associated with text-based discussion boards.

Video-based discussion boards, however, require students to interact synchronously, which helps foster a sense of community that is sometimes lacking in asynchronous online courses. Video-based discussions not only help with the previously mentioned aspects of online learning but can also help professors enhance how they facilitate their courses which should improve student engagement and learning outcomes. Students learn and retain more if they interact socially (Svokos, 2019).

Video-based discussions tend to be extremely more efficient regarding cognitive learning. Videos allow for more in-depth conversations about a topic, rather than just answering a question and replying to one or two more classmates (Matsumura, Zook-Howell, Bickel, Walsh, & Correnti, 2019). Matsumura et al. (2019) went on to postulate that recorded video discussions could enhance an instructor's course facilitation quality and improve their overall skills as an educator.

Online learning can become stagnant and boring for students of all ages and faculty who continuously strive to enhance their skills as an educator will prove to be an asset to their organization

and a mentor to their students. Students frequently discuss how interaction with classmates is one of the best parts of their educational careers. Students like the classroom atmosphere of being with others and learning together. Text-based discussion boards via online classes do not provide the same atmosphere and usually do not provide the same knowledge, experience, and cohesion as video-based discussions can provide (Milovic & Dingus, 2021). Video-based discussions allow for a sense of social presence. Social presence is the connectedness and cohesiveness students long for in the classroom, but it happens in an online course. Social presence must happen before cognitive presence occurs (Svokos, 2019). Svokos (2019) went on to state that cognitive presence is achieved when students demonstrate "self-reflection, questioning, and learning" (p. 20).

Methods

Data were collected from 50 online students using a questionnaire of text-based versus video-based discussion boards to promote a sense of community with graduate online students.

GENDER		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	12	24.0	24.0	24.0
	Male	38	76.0	76.0	100.0
	No entry	0	0.0	0.0	100.0
	Total	50	100.0	100.0	

Table I Gender

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	18	36.0	36.0	36.0
	25-34	32	64.0	64.0	100.0
	34+	0	0.0	0.0	100.0
	Total	50	100.0	100.0	

Table II Age

Study Population

Data were collected from students in an online university who had completed in-person classes at Campbellsville University in KY, USA Friday, June 9, 2023. We performed convenience sampling by recruiting participants at a weekend face-to-face Residency. The participants voluntarily provided informed consent. Students were instructed to return the questionnaire to the professor after completing the survey. The duration for survey completion was approximately 3 minutes. The appropriate sample size required for regression analysis was computed using the G*Power 3.1.9.2 software. For an effect size (f2) of 0.02, significance (α) of 0.05, and power (1 − β) of 0.80, the minimum required sample size was 50, and we distributed the questionnaire to 50 students with the hope of no potential withdrawal. A total of 50 questionnaires were retrieved in the final analysis.

Validity: To measure the validity of the questionnaire, the questionnaire was distributed to 15 students outside the sample. The notes and feedback about the questionnaire were collected. The language and research notes were collected on the questionnaire before its final distribution.

Reliability: To measure the reliability of this questionnaire, Cronbach's Alpha was used, and the results show that the value of Cronbach's alpha was more than 0.6 for all variables of the study, which makes it reliable.
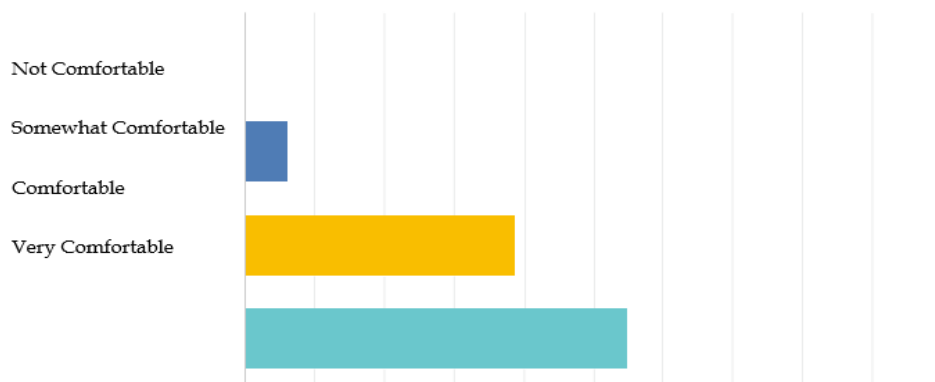
Measures

General characteristics

We collected information about participants' sex and age with sex characterized as male and female and age with the ranges of 18-24, 25-34, 35-44, and 45+.

The students responded to the following questions.

How would you rate your comfort level with online discussions?

Answered: 49 Skipped: 1

ANSWER CHOICES	RESPONSES	
Not Comfortable	0.00%	0
Somewhat Comfortable	6.12%	3
Comfortable	38.78%	19
Very Comfortable	55.10%	27
TOTAL		49

Which discussion format, text-based or video, did you feel will best enhance the sense of an online community in the course?
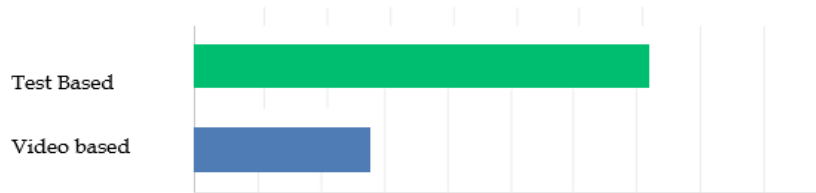
ANSWER CHOICES RESPONSES	
Text-Based	72.00% 36
Video	28.00% 14
TOTAL	50

Statistical Analysis

As described in the research design, the students were given a choice for their discussion format and could use either a text or video format. A total of 36 (72%) students selected a text-based response, whereas 14 students (28%) selected a video-based response. However, when asked on the survey which discussion format made them feel most connected to their peers, the majority of students (60.49%) selected video-based discussions.

With the ever-changing educational landscape, consideration should be taken because many students did not start their college-level program expecting to complete their degree requirements in the online environment. Those who did choose to continue their education in the online environment may have very little experience learning in an asynchronous classroom. The use of video-based discussions may be a useful bridge from a traditional in-person classroom to the world of online learning, but only if there is buy-in from the students. Faculty should create guidelines on the way to use new technology, setting online learning expectations, and cultivating a safe learning environment will be essential when attempting to create an engaging online classroom.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
How many online courses have you completed before this course?	Between Groups	1.082	1	1.082	1.744	.193
	Within Groups	27.288	44	.620		
	Total	28.370	45			
How would you rate your comfort level with online discussions?	Between Groups	1.469	1	1.469	4.005	.052
	Within Groups	15.775	43	.367		
	Total	17.244	44			
Would you prefer text-based or video discussions?	Between Groups	.265	1	.265	1.220	.275
	Within Groups	9.561	44	.217		
	Total	9.826	45			
If you were given a choice for how to respond, text or video. Which would you select?	Between Groups	.042	1	.042	.517	.476
	Within Groups	3.610	44	.082		
	Total	3.652	45			
Why did you select this method of responding for your last discussion?	Between Groups	1678.916	1	1678.916	19.051	<.001
	Within Groups	3436.889	39	88.125		
	Total	5115.805	40			
Which discussion format, text-based or video, did you feel will best enhance the sense of an online community in the course?	Between Groups	.382	1	.382	1.979	.167
	Within Groups	8.488	44	.193		
	Total	8.870	45			
Why did you feel this discussion format will enhance the sense of an online community?	Between Groups	1338.552	1	1338.552	19.803	<.001
	Within Groups	2365.719	35	67.592		
	Total	3704.270	36			

Quantitative Results

Statistics were utilized to ascertain the students' comfort level with text-based and video-based discussions and their perception as to which discussion format best facilitated peer-to-peer connection. In the survey, the students were asked to reflect on their preferences and comfort levels with text-based and video-based discussions before the start of the course. Most of the students reported that they preferred text-based discussions, the students were given a choice for the last discussion and could use either a text or video format. Descriptive and inferential statistics, specifically an ANOVA, were used to analyze the results from the survey. For the Likert-scale survey, the students were asked to reflect on discussion assignments from the course and then indicate the extent to which they were very comfortable (5) not comfortable (1) with each phrase as it relates to text-based discussions and video-based discussions.

Discussion

Recent literature suggests that text-based discussions can foster a higher degree of engagement, as they often encourage participants to craft thoughtful responses and engage in in-depth analysis. Conversely, video-based discussions tend to promote real-time interaction and a sense of immediacy. Text-based formats generally impose a lower cognitive load, as participants can read and process content at their own pace. This is particularly advantageous for complex or technical subjects, as individuals can take the time to digest intricate information. Additionally, text-based discussions are often more accessible for individuals with hearing impairments or those who prefer to consume content silently. Video formats can

sometimes overwhelm participants with a higher cognitive load due to the combination of visual and auditory stimuli. However, well-structured, and concise videos can mitigate this issue. Accessibility can be a concern in video discussions, especially for those with hearing or visual impairments, unless appropriate captions and audio descriptions are provided.

In comparing and contrasting text-based and video-based discussions based on recent literature and the key findings of this study, it becomes evident that both formats offer unique advantages and challenges. Text-based discussions excel in fostering in-depth engagement, comprehension, and accessibility, while video-based discussions leverage non-verbal cues and sensory engagement for enhanced emotional connection and retention. Choosing the appropriate format depends on the specific goals of the discussion, the nature of the content, and the preferences of the participants. Future research should continue to explore nuanced factors that influence the effectiveness of these formats in various contexts.

Limitations

There are several limitations to this study. While the small sample size of 50 participants can be considered a limitation, there are no large studies to date that compare video-based and text-based discussions. This study included online students from graduate programs; therefore, future studies should include students from various disciplines and levels of education. This would provide insight into how social presence is perceived by a more diverse population. Future studies can also include different types of video-based technology depending on which faculty selected for their courses to understand the relative ease or difficulty of using one technology over another as experienced by learners. This should be introduced to understand the way students' interpretation of their experience of the video-based software discussion board in terms of the subjects' comfort level as well as the instruction provided on software use should be considered limitations to the study.

Recommendations

Effective community engagement is a pivotal aspect of fostering a meaningful and enriching educational experience for graduate online students. This study has unveiled valuable insights into the preferences and perspectives of students. Based on the findings, several recommendations are proposed to optimize community engagement strategies and amplify the sense of belonging among graduate online students.

Hybrid Discussion Platforms: Implement a hybrid discussion platform that combines both text-based and video-based components. This approach accommodates diverse learning preferences and communication styles among graduate online students. Offering options for text-based discussions for those who prefer reflection and in-depth analysis, as well as video-based discussions for those who thrive on real-time interaction, can cater to a wider spectrum of students' needs.

Structured Discussion Prompts: Develop structured discussion prompts that encourage meaningful interactions. These prompts should encourage critical thinking, synthesis of ideas, and the application of course content to real-world scenarios. Incorporating a mix of open-ended questions, case studies, and scenario-based discussions can stimulate engaging conversations and promote a deeper sense of community among students.

Scheduled Live Video Sessions: Integrate scheduled live video sessions that complement text-based discussions. These sessions can be utilized for real-time Q&A sessions, guest lectures, and collaborative problem-solving exercises. By providing a structured platform for face-to-face interactions, students can forge stronger connections with peers and instructors, enhancing the overall community experience.

By embracing hybrid approaches, structuring discussions, involving skilled facilitators, scheduling live video sessions, encouraging diverse group activities, and focusing on personalized engagement and assessment, institutions can create a vibrant and cohesive online learning community that enriches the

educational journey for graduate students. These recommendations lay the foundation for a dynamic and inclusive virtual learning environment that prioritizes both academic excellence and interpersonal connections.

Conclusion

As online education in the USA continues to grow and colleges are forced to move courses from in-person to online, educators and researchers need to understand the factors affecting students' perceptions of presence and community as it relates to their learning success. While the students in this study felt video-based discussion boards promoted the ability to form connections with their learning community, they ultimately preferred the use of text-based communications for a variety of reasons. These results support the use of differentiated assessment and universal design by instructors to allow for multiple means of participation and engagement. Ongoing research on students' perspectives of social presence through the use of video tools would be helpful. With the changing educational environment and the increased use of video tools, student perspectives and preferences may change over time. Also, research into instructor perspectives would be interesting to understand what modalities are used in practice and what concerns instructors have concerning the use of video

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