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Online Graduate Students' Preferences of Discussion Modality: Does Gender Matter?

Yu-Hui Ching
Boise State University

Yu-Chang Hsu
Boise State University

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Yu-Hui Ching
Assistant Professor
Department of Educational Technology
Boise State University
Boise, Idaho, 83725, USA
yu-huiching@boisestate.edu

Yu-Chang Hsu
Assistant Professor
Department of Educational Technology
Boise State University
Boise, Idaho, 83725, USA
hsu@boisestate.edu

Abstract

Audio/video discussion has been used increasingly in online courses due to its affordances in enhancing online communication. However, whether learners of different characteristics can benefit from this discussion modality has not been investigated extensively. This study examined whether gender plays a role in learners' preferences and perceptions of audio/video discussion as compared to text discussion. The survey data of thirty-six participants' perceptions were collected and studied after they participated in an audio/video discussion activity. The findings show that females preferred audio/video discussion more than males did, and more females reported that audio/video discussion strengthened their connection with peers. The top three benefits of audio/video discussion perceived by females and males are presented in this paper. Overall, using audio/video discussion to augment online communication and to connect learners is likely to be more effective and perceived more positively by female students than male students. The findings in this study could provide implications for sound pedagogical decisions that satisfy student preferences.

Keywords: Online Discussion, Discussion Modality, Gender, Audio Discussion, Video Discussion, Instructional Design

Introduction

The number of online courses offered in higher education in the United States has grown tremendously. Allen and Seaman (2014) reported that virtually all public higher education institutions in the United States offer online courses, and a total of 7.1 million students took at least one online course during Fall 2012, compared to 1.6 million students during Fall 2002. To ensure quality educational experiences for these unprecedented numbers of online learners, online courses need to marry sound pedagogy with enabling technology to address learners' needs and preferences. One challenge faced by online learners is the potential feeling of isolation in online environments (Palloff & Pratt, 2007), which may contribute to attrition of online learners (Song, Singleton, Hill, & Koh, 2004). To mitigate the feeling of isolation in learners, online courses can build in abundant opportunities for learner interaction that promote social learning and connect students to their online community (Palloff & Pratt, 2007). Research has shown that interactivity has a positive correlation with learner satisfaction, performance (Durrington, Berryhill, & Swaffor, 2006), and achievement (Bernard et al., 2009). In addition, rubrics and checklists developed to ensure effectiveness of online courses usually contain learner interaction as an evaluation criterion (e.g., Quality Matters Rubric: https://www.qualitymatters.org/rubric).

Interaction, in the form of peer feedback has also been associated with a positive impact on students' persistence in online programs (Hart, 2012). The feedback obtained from the learning community can bolster learners' actions and sustain their motivation. As online learner-to-learner interaction happens mostly in online discussions, how to incorporate effective discussion activities into online courses has been a major pedagogical consideration. Instructional designers and educators strive to identify optimal pedagogical uses of various online discussion formats (e.g., asynchronous, synchronous, text-based, and audio/video-based) to meet the needs of learners of different characteristics, and to create meaningful and successful online learning experiences.

Among different discussion formats, asynchronous text-based discussion (text discussion hereafter) has been used extensively in online education because of its flexibility considering schedule and space (Parsad & Lewis, 2009). This discussion modality allows learners sufficient time to compose their ideas and to engage in higher-order thinking (Garrison, Anderson, & Archer, 2000). Studies have found that asynchronous text discussion also increased equity by gaining more discussion participation from females, who were found to participate less in face-to-face discussion compared to their male peers (Caspi, Chajut, & Saporta, 2008; Rovai & Baker, 2005). Females tended to prefer online discussion more than face-to-face discussion and posted more messages in asynchronous text online discussion forums compared to their male peers (Bostock & Lizhi, 2005). Nevertheless, text discussion has its disadvantages. It presents obstacles for students who have poor skills in typing, reading, or writing (Girasoli & Hannafin, 2008; Bowe, 2002). Student contribution and participation in text discussions may be limited due to the elongated time required to clearly write complex concepts (An & Frick, 2006; Hew & Hara, 2007). Learners using text communication are more likely to misunderstand each other without visual and auditory hints (Hew & Hara, 2007), and are more likely to feel lost (Palloff & Pratt, 2007) or isolation that contributes to attrition of online learners (Song, Singleton, Hill, & Koh, 2004).

In contrast, asynchronous audio/video discussion allows learners to record audio or video messages for idea exchange. An audio/video discussion affords learners the opportunity to show their emotion through intonation and/or visual cues, which improves communication and reduces misunderstanding (Ching & Hsu, 2013; Hew & Cheung, 2013). In addition, audio/video discussion enables easier self-expression (Ching & Hsu, 2013) and helps learners perceive peers as real people. In the context of instructor and learner interaction, learners reported that instructor's audio feedback showed more nuance in the communication (Ice, Curtis, Phillips, & Wells, 2007) and more favorable tone than text feedback (Cavanaugh & Song, 2014). In the past, audio/video discussion was not widely used (Palloff & Pratt, 2007) probably due to technology constraints such as Internet bandwidth and speed. With the advancement of computers and Internet technology, this discussion modality is now much more accessible for online learners and instructors concerned with enriching personal and social learning experiences. However, whether learners of different characteristics can all benefit from this discussion modality has not been studied extensively.

This study explored learners' preferences of online discussion modality. Specifically, this study examined whether gender plays a role in learners' preferences and perceptions of audio/video discussion. The following research questions were asked:

1. Does gender play a role in learners' preferences of audio/video discussion versus text discussion?
2. How does audio/video discussion connect female learners and male learners respectively with their peers?
3. What are the perceived benefits of audio/video discussion compared to those of text discussion by females and males?

Literature Review

Gender Differences in Online Learning

Whether gender plays a role in learning behaviors has been researched in both face-to-face and online learning environments. Gender differences have been identified in traditional classroom behaviors (e.g., Canada & Pringle, 1995; Crombie et al., 2003), showing females speak less frequently and less confidently than males (Caspi, Chajut, & Saporta, 2008). As online learning becomes pervasive, researchers have examined the impact of gender on online learning behaviors and experiences, but the findings have been inconclusive. A number of studies found that females participated more than males, and had higher levels of satisfaction in online learning environments. For example, females read and posted more messages on the course bulletin board (e.g., Bostock & Lizhi, 2005; Caspi et al., 2008; Gunn, McSporran, Macleod, & French, 2003). Compared to males, females established a stronger sense of community, and perceived more learning in an online learning environment (Rovai & Baker, 2005). In addition, more females preferred online discussion to face-to-face discussion (Bostock & Lizhi, 2005). Females were also found to value connection and interaction, which led to their preference of learning through connectedness and a cooperative communication style (Guiller & Durndell, 2007). On the other hand, males preferred environments allowing for more independent learning and an argumentative communication style (Guiller & Durndell, 2007).

However, several studies found that gender effects were insignificant in some aspects of online learning. For example, Yukselturk and Bulut (2009) examined 145 participants from an online programing course and identified similar results from females and males in motivation, self-regulation, and achievement in the subject matter. Lin and Overbaugh (2009) studied 151 female and 29 male undergraduate teacher-education students, and reported that gender did not have an impact on students' choices of discussion format in terms of synchronicity. Situational characteristics, such as perceived value of time flexibility and part-time versus full-time enrollment, seem to be more influential than gender effects on students' preference of an asynchronous discussion format. While the affordances of audio/video discussion have been documented in recent research, whether gender plays a role in learners' preferences on this discussion modality has not been examined.

Asynchronous Audio/Video Discussion

Research has investigated students' preferences of discussion modality and their participation in audio/video discussion. Ching and Hsu (2013) inspected the use of a multi-modal discussion in an entire online course where 20 graduate students (55% females) used VoiceThread for collaboration and knowledge sharing. It was found that when given a choice of discussion modality, more graduate students interacted with peers using audio than text, and they preferred audio discussion to text discussion for its affordance to aid communication and reduce misinterpretation. In contrast, Hew and Cheung (2013) found that their undergraduate participants (70% females) actually preferred using text discussion if given a choice, despite identifying several affordances of audio discussion. These undergraduate students seemed to be self-conscious about how they sounded in the audio format, which prevented them from considering audio as the preferred medium. An earlier study also had similar findings stating that students preferred text discussion because reading text was easier and quicker than listening to audio (Bargeron, et al., 2002). Comparing undergraduate students' actual participation in discussion of different modalities, Hew and Cheung (2012) found that students' discussion had greater depth in the asynchronous audio discussion group than in the text discussion group, despite the level of participation in both discussion modalities being similar.

The educational benefits of audio/video discussion have been documented in recent research. For example, learners can better express their emotion and personality through audio/video discussion as this modality reveals intonation and/or visual cues, leading to improved communication (Ching & Hsu, 2013; Hew & Cheung, 2013). Teacher education students (predominantly females) reported positive influence of video communication on their social presence, and perceived this communication mode to be more natural than text communication (Borup, West, & Graham, 2012). However, the audio/video discussion benefited students of various backgrounds in different ways. For example, English language learners with limited speaking and listening skills may not be able to participate fully (Borup, West, & Graham, 2013).

What remains unknown is whether audio/video discussion is equally preferred by both males and females, and whether its pedagogical advantages are perceived similarly by both genders.

Research Method

Participants and Context

Thirty-six graduate students in an online master's program at a public university in the United States voluntarily participated in this study. Most of these participants were teachers in K-12 schools, along with some technology coordinators, and instructional designers. Fifty-three percent of the participants were males and 47% were females. Thirty-six percent of the participants were between 41 to 60 years old, 39% were between 31 to 40 years old, and 25% were 30 years old or younger.

Materials and Procedure

One of the course activities required that learners participated in an audio/video discussion activity via VoiceThread. In the VoiceThread environment, learners can create a multimedia presentation to share their ideas and understanding of the learning materials, while peers participate in the discussion using audio, video, or text (Hsu, Ching, & Grabowski, 2014). This specific discussion task asked learners to present their analysis of a case scenario representing a complex problem relevant to the course topic, provide feedback to three peers' analysis, revise their own original written analysis by incorporating the peer feedback, and submit the final analysis to a forum in the course management system.

Data Analysis

In this case study, a survey with open-ended questions was administered after the discussion activity to solicit participants' experiences and perceptions of audio/video discussions. The responses were examined using the constant-comparative approach espoused by Lincoln and Guba (1985). The researchers also converted qualitative data into frequency tallies in order to perform a chi-squared test of independence to examine whether gender is associated with learners' preferences of discussion modality.

Results

Gender Differences in Learners' Preferences on the Discussion Modality

The data shows that females and males have different preferences regarding discussion modality. Table 1 presents the percentage distribution of preference for audio/video and text discussion by gender. Fifty-three percent of the females preferred to use *audio/video* discussion via VoiceThread, 18% preferred text discussion, while 29% reported that their preferences depended on the nature of the task. Comparatively, 67% of the males preferred using text discussion, 22% preferred audio/video discussion via VoiceThread, and 11% reported that the task would dictate their preferences. A chi-squared test of independence shows that gender is associated with learner preferences on the discussion modality (χ^2 (2, N = 35) = 8.28; p < .05).

Table 1.

Percentage Distribution of Preference for Audio/video and Text Discussion by Gender

	Females	Males
Audio/video discussion	53%	22%
Text discussion	18%	67%
Depending on the task	29%	11%

Connection to Peers

When asked how the audio/video discussion via VoiceThread connected learners with peers, 82% of the female participants commented that the discussion helped connect them further with

their peers. However, only 47% of the male participants reported that the audio/video discussion on VoiceThread connected them further with their peers. A chi-squared test of independence shows that gender is associated with learners' differential perceptions of connectedness to peers (χ^2 (1, N = 34) = 4.64; p < .05). As revealed in the qualitative data, those who did not feel that audio/video discussion connected them further cited reasons such as "it was one assignment of many," "no communication besides the commentary," and "do not want to connect with my peers all that much."

Perceived Benefits and Shortcomings of Audio/Video Discussion

Learners were asked to comment on the benefits of audio/video discussion compared to text discussion. The top three perceived benefits of audio/video discussion for females and males are listed in Table 2. Compared to males, more females (31% vs.18%) cited the ability to hear and see their peers as the main benefit of using audio/video discussion. Both females (25%) and males (18%) commented on the functionalities of the tool (VoiceThread) as one of the benefits, such as the affordance of attaching their feedback to a specific part of the presentation, and the user-friendly interface of the tool. While females also indicated that the audio and video components created a more personal touch and helped self-expression (19%), males focused on the efficiency of the discussion mode (18%), commenting that speaking is faster than typing when providing feedback. The efficiency of speaking also led to students' willingness to elaborate on their ideas and therefore, to provide more elaborate responses. It is worth noting that 24% of the males did not indicate any benefits of audio/video discussion, while only 6% of the females did not indicate any benefits.

Regarding the shortcomings of audio/video discussion, 38% of females identified one or more shortcomings of audio/video discussion. Thirteen percent of females commented on the extra time needed to prepare for audio/video discussion because of the need for writing scripts and the need for several attempts to achieve a satisfying recording. In addition, 13% of females commented on the difficulties of accessing and retrieving feedback for referencing.

Table 2.

Top Three Perceived Benefits of Audio/video Discussion for Females and Males

Benefits of VoiceThread Discussion	Percentage	Sample responses
Female		
Enhanced communication	31%	One major benefit is that the listener can hear the fluctuation in the speaker's voice, which helps you understand their tone better than text does.
Functionality of the tool	25%	I believe that the benefits are that the feedback can be attached to a specific slide or part of the presentation. Therefore, it is easier to go back to that area and make adjustments if necessary.

	Personal touch	19%	VoiceThread discussions give more of a personal touch to the discussion.
Male			
	Enhanced communication	18%	You can see or hear your cohorts. I like to watch someone's eyes when they speak. VoiceThread allows that. …Furthermore it allows the presenter emphasis and emotion that does not happen with text.
	Functionality of the tool	18%	The ability to share a PowerPoint presentation and provide commentary on each slide.
	Task efficiency	18%	For those who are comfortable speaking freely, it might be a much shorter assignment as they may not write a script but simply speak what they are thinking. I was able to voice my ideas and elaborate much more compared to typing. Recording things was also much faster than typing all my ideas.

Overall, 47% of males identified various drawbacks of audio/video discussion. 18% males commented on the utility of the audio/video discussion tool (e.g., VoiceThread) as the audio/video discussion is not centrally located in the LMS, which made the learning activity less organized. Other drawbacks of audio/video discussion cited by males included the extra time needed for preparing audio/video discussion due to the need for scripting, the difficulty of putting together coherent feedback, and the challenge of accessing comments for referencing.

Discussion

The findings of this study revealed gender differences on learners' preferences of discussion modality. The results showed that females preferred audio/video discussion to text discussion (53% to 18%) whereas males prefer text discussion to audio/video discussion (67% to 22%). In terms of connecting with peers, 82% of the female participants felt that audio/video discussion helped them connect with peers while only 47% of the male participants reported this perception. About 30% of females valued the benefit of enhanced communication enabled by auditory and visual cues from the audio/video discussion, and 19% valued the capability of adding some personal touch to the discussion. On the other hand, only 18% of males valued the enhanced communication enabled by the audio/video discussion, and another 18% valued the potential of improved efficiency with audio/video commenting.

Gender's Impact on Learners' Preferences of Discussion Modality

The finding that females preferred audio/video discussion more than males may be explained by learners' characteristics and their value systems. Females tend to be social and interactive learners (Rovai & Baker, 2005) who seek to establish intimacy in a relationship (Tannen, 1991), and form a stronger sense of community in an online learning environment (e.g., Rovai & Baker, 2005). With the auditory and visual cues conveyed through audio/video discussion, personality and emotion can be revealed for relationship and community building. Intonation can also be revealed to enhance communication through reducing misinterpretation. Males, on the other hand, seem to place higher value on the productivity and efficiency associated with text discussion. It is understandable that these adult online learners appreciate productivity and efficiency because they are primarily part-time students with work and family obligations (Stavredes, 2011). Similarly, Lin and Overbaugh (2009) found that both female and male undergraduate students preferred asynchronous to synchronous discussion format due to situational and practical considerations, such as their perceived value of time flexibility. Additional data collected from the survey in this study revealed that about 90% of the learners (both males and females) wrote drafts or outlines before they recorded their audio/video messages for professionalism, which leads to more time spent on the activity. One comment from a male participant illustrated this concern- "I still do the exact same writing portion - VoiceThread simply adds more time to the assignment in order to get the visual/audio components completed, but this time is spent to put together a presentation and not on learning material." However, it is worth noting that females seem to place higher value on being able to see and hear peers, and become connected with the community, despite that audio/video discussions also took them more time to complete. In this asynchronous online course, this audio/video discussion activity presented a rare and valuable opportunity for female learners to further build interpersonal relationship with fellow classmates. As such, they seemed to be more willing to devote time to composing audio/video responses.

Elaborate Responses in Audio/Video Discussion

One interesting finding is that learners reported that they tended to provide longer and more elaborate comments via audio/video discussion. This finding supports prior research findings in the context of instructor offered audio feedback where instructors provided more examples (Merry & Orsmond, 2008) and richer language with more adjectives (Dagen, Matter, Rinehart, & Ice, 2008) in audio format than in written format. In the context of peer-to-peer interaction, the finding also echoes previous findings that students might not provide more critical input in text discussion because communicating complicated ideas in text is time-consuming (An & Frick, 2006; Hew & Hara, 2007). It would be interesting if future research looks into whether learners do provide more elaborate and/or quality responses in audio/video discussion. Although more elaborate feedback is likely to benefit the feedback receiver content-wise, it can also be cumbersome for learners to receive long feedback in audio or video format. One drawback of audio/video discussion mentioned by both female and male participants was the difficulty of extracting ideas from long audio/video comments. In this study, students were asked to use peer feedback to help them improve their own work. In this design, it became particularly critical for learners to clearly understand peers' comments and extract constructive points for improvement. Students ended up spending more time and effort reviewing the audio/video comments, compared to text comments. This was especially true of long comments. To provide an optimal condition for effective online idea exchanges, learners may benefit from a system where they could use audio/video to provide comments and the system would automatically transcribe the audio comments into text if there is a need for referencing the comments.

Mixing Audio/Video Discussion with Text Discussion

Based on the findings of this study, the researchers recommend that instructional designers and online educators incorporate audio/video discussion into online courses for enhancing communication and strengthening connection among learners in a learning community. However, the extent that this discussion modality is used may be varied for classes with different gender composition. For a class with more females, a mix of audio/video and text discussion would better meet learners' preferences to be more interactive and better connected with peers. On the other hand, for a predominantly male class, audio/video discussion is best used as an infrequent

alternative to text-based discussion. Sensible use of audio/video discussion modality seems to best match males' preference for efficiency and productivity. This recommendation aligns with previous studies in the context of instructor and learner interaction in which students in general preferred to receive a mix of audio/video feedback and text feedback from instructors instead of a single format of feedback (Ice et al., 2010; Olesova, Richardson, Weasenforth, & Meloni, 2011; Oomen-Early et al., 2008). In general, audio/video discussion can be used more for community building and ice-breaking activities that do not require learners to reference others' responses heavily.

Future Research Directions

Future research may explore whether females and males act differently in audio/video discussion compared to text discussion. Prior studies revealed gender differences in the online text-based communication pattern and discourse. Overall, females were more likely to express agreement (Guiller & Durndell, 2006), use exclamations (Waseleski, 2006), and employ personal and emotional forms of language (Guiller & Durndell, 2007) in online communication. These communication tactics might have been developed by females to convey friendliness in an impersonal environment where auditory and visual cues in communication were limited (Guiller & Durndell, 2007; Waseleski, 2006). However, in the context of audio/video discussion, the medium can convey more emotion and personality. Future research could study if females still employ more personal and emotional forms of languages than males in audio/video discussion, like they did in the text discussion. In addition, research has found that males tend to post negative responses while females are more likely to respond positively in computer mediated text-based communication (Guiller & Durndell, 2007; Tannen, 1991). We suspect that this gender-related communication pattern could become more salient in audio/video discussion. Females who care more about interpersonal relationships may communicate in a more cooperative manner because audio/video discussion makes communication more personal. A female participant in the current study raised a relevant concern, commenting that "one thing I would be concerned with if we used VoiceThread for discussion board responses would be the possibility that some people might take comments more personally. After all, the response was aimed at them, not the text they wrote in a response box." Future research may also want to investigate how audio/video discussion impacts idea sharing and critical thinking for different genders and identify best practices for a gender-mixed learning environment.

Conclusion and Limitations

This study explores whether gender plays a role in learners' preference of asynchronous audio/video discussions. The findings show that females preferred audio/video discussion more than males did, and more females reported that audio/video discussion strengthened their connection with peers. The top three benefits of audio/video discussion perceived by females and males are also presented in the paper. The findings provide implications for sound pedagogical decisions to meet students' preferences. While audio/video discussion offers unique pedagogical affordances, it is premature to assume the pedagogical affordances will meet the preferences and needs of all learners. Using audio/video discussion to augment online communication and to connect learners is likely to be more effective and perceived positively by female students than male students. The results of the current study represent a single case and should be interpreted with caution due to the small number of participants, the specific learning contexts (e.g., adult graduate learners in an online learning environment), and learners' one-time exposure to the audio/video peer feedback activity. Future research is encouraged to replicate this study in different learning contexts with learners of different characteristics to verify the gender preferences of discussion modality identified in this study. In addition, the audio/video discussion may have had a novelty effect on the students in this study. Future research can explore learners' preferences and perceived benefits of audio/video discussion after they have experienced the modality for a longer duration.

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