Teacher Candidate Perceptions on Alternative Asynchronous Online Discussion Boards

Jennie CARR

jcarr@bridgewater.edu; Bridgewater College, Bridgewater, USA; ORCID: 0000-0002-6264-8414

Article Info	Abstract
      Research Article	Asynchronous online discussion boards are frequently utilized as a pedagogical tool within traditional, hybrid, and online collegiate courses. Research has found teacher candidates can be disenchanted with the monotonous structure of traditional asynchronous online discussion boards. In educator preparation, we claim to understand teacher candidates learn differently. Yet, traditional discussion boards are not effective for all teacher candidates. Faculty can find ways to differentiate by incorporating alternative asynchronous discussion board platforms. A quantitative survey was used measure 77 teacher candidates perceptions of creativity, demonstrating understanding, enhancing student voice, and usefulness toward learning. Results indicate participants prefer BookSnaps, Flipgrid, and video-response to traditional discussion boards. More specifically when evaluating for enhancing creativity, understanding, student voice, and usefulness participants preferred Flipgrid. It is important to understand the factors, which create a high-quality asynchronous discussion board experience. This research can help faculty to determine how to strengthen the asynchronous online discussion board learning experience. **Keywords**: asynchronous discussion boards, instructional technology, teacher education

1. INTRODUCTION

Technology has the capability to help education faculty re-envision their pedagogical techniques (Kumari, 2001). As faculty design courses, technology such as asynchronous online discussion board (AODB) platforms can be used to their advantage to develop intentional, thought-provoking, meaningful learning experiences. AODBs have a significant presence in many education preparation courses. Due to COVID-19, many institutions are facing diminishing financial resources and institutions are creating more online learning opportunities (Bisesenbach-Lucas, 2003) therefore it is not only timely but necessary to identify teacher candidate perceptions of traditional and alternative AODB platforms which may foster creativity, promote student voice and deepen understanding and purpose (Ajayi, 2009). Unfortunately, higher education faculty are historically slow to adopt new technologies (Jang,

2015) or are not aware there are other ways to enhance AODBs with technology like Flipgrid, video-response, and BookSnaps (Yeh & Lahman, 2007).

The objective of the research was to investigate teacher candidate perceptions of alternative AODB platforms including Flipgrid, BookSnaps, video-response, and traditional written AOBDs which may foster creativity, promote student voice and deepen understanding and purpose. It sought to answer the following research question: 1) What asynchronous online discussion board platform enhanced teacher candidates perceptions of creativity, ability to demonstrate content understanding, student voice, and usefulness toward learning?

Theoretical Framework

The theoretical framework for this study is guided by Garrison, Anderson, and Archer (2000)'s Community of Inquiry (CoI) framework. This social constructivist model of learning occurs in both online and hybrid teaching and learning environments which inform research and practice. The framework is built on three dimensions including: social, teaching, and cognitive presence. First, social presence is defined as "the ability of participants in the CoI to project their personal characteristics into the community, thereby presenting themselves to the other participants as real people" (Garrison et al., 2000, p. 89). Second, teaching presence directs the social and cognitive process. It is comprised of three areas: instructional design, facilitation of discussion and direct instruction (Huang, Hurt, Richardson, Swan, & Caskurlu, 2018). Third, the cognitive presence is defined as "... the extent to which the participants of a community of inquiry are able to construct meaning through sustained communication" (Garrison et al., 2000, p. 89).

Initially, researchers believed the CoI framework implied specific characteristics and relationships however, more recent research has found there can be an ebb and flow of the three presences as a course progresses (Akyol, 2014). There is clearly a relationship between the three CoI presences. Students' perceive deep and meaningful learning occurs at the intersection of the teaching, cognitive and social presence (Huang, Hurt, Richardson, Swan, & Caskurlu, 2018 et al., 2018). Richardson, Arbaugh, Cleveland-Innes, Ice, Moller, Huett, Swan, & Garrison (2012) reported, "as learning technologies have proliferated over the last few years, the ability to enhance each of the three presences has dramatically increased" (p. 112).

AODBs are frequently used in teacher education coursework to develop a community of inquiry. As teacher candidate responses can indicate level of content understanding and cognitive presence. Additionally, discussion board responses can provide an environment for

developing a social presence if the proposed prompt is purposeful (Kreijns, Kirschner, Jochems, and Van Burren, 2004; Remesal & Colomina, 2013). Faculty in education preparation are generally thoughtful about their teaching presence and often spend a significant amount of time and energy creating discussion board assignments that will develop a teacher candidate's understanding, creativity, leadership, and critical thinking skills (McKinney, 2018). Currently, there is no research comparing teacher candidate perceptions of Flipgrid, Video-response, BookSnaps, and traditional AODB platforms.

2. LITERATURE REVIEW

Asynchronous Online Discussion Boards

AODBs have been a common practice in higher education for over a decade (Cho & Tobia, 2016; Geo, Zhang, & Franklin, 2013; Gerosa, Filippo, Pimentel, Fuks, & Lucena, 2010). Researchers have studied their impact since their initial inception in the early 1990s (Fernandez, Simo, Castillo & Sallan, 2014). College students appreciate the online asynchronous format because it provides greater access and releases them from traditional time and space constraints (O'Shea, Stone, Delahunty, 2015). These benefits only occur if the AODB is carefully designed and moderated by teacher education faculty (Ravenna, Foster, Bishop, 2012). Even though AODBs are one of the most common instructional tools, faculty receive little training on how to effectively use the AOBD to meet their course objectives or strengthen the teacher candidate's learning experience.

Traditional Discussion Boards

AODBs are commonly used by educator preparation faculty to promote understanding, participation and collaboration as teacher candidates tend to have higher academic performance when they are more actively involved in using course learning materials, readings, and participating in online discussions (Campbell, Gibson, Hall, Richards & Callery, 2008; Kumari, 2001; Lyons & Evans, 2013). The traditional AODBs used in this study is defined as the education faculty posting an assignment with supporting materials and teacher candidates responding by typing a written response within a designated timeframe. Traditional text-based AODBs can led to a teaching and social presence which meets to of the three components of CoI which can create a meaningful learning experience (Nagel & Kotze, 2010).

The common AODB usage has delivered some negative consequences. Most commonly referenced is disengagement as evidenced by robotic, forced, unnatural, shallow, disingenuous responses (Biesenbach-Lucas, 2003; Ding, Kim, Orey, 2016; McKinney, 2018; Xie, Durrington & Yen, 2011). Additionally, AODBs that are solely text-based may not be effective for all learners (Green & Green 2018). For example, teacher candidates who are more creative or interpersonal may not have the opportunity to use their intellectual strengths in a traditional AODB. Nonverbal cues such as gestures, smiles, and tone of voice are entirely absent, which can lead to unintentional assumptions and miscommunications (Clark, Strudler & Grove, 2015; Hara, Bonk, Angeli, 2000).

Of the four platforms utilized in this study, the most research can be found on traditional AODBs. In a vast literature review of AODBs, Ringler, Schubert, Deem Flores, & Friestad-Tate (2015) found the majority of empirical research has focused on the quality of student responses instead of the type of responses or platform used. Thus, creating the need for this relevant research.

Flipgrid

Flipgrid is a free platform where faculty create a brief discussion-based prompt for teacher candidates respond by recorded videos. Flipgrid's goal is "100% engagement for everyone" (Flipgrid, 2020). This happens because every teacher candidate has the opportunity to respond to the prompt. Faculty can use this tool synchronously or asynchronously in endless ways such as, but not limited to, a bell ringer, debates, appsmashing, exit ticket, or discussion forum. After the teacher candidate records their video, they can add fun stickers, giphys, and emojis which personalize the user experience and mimic current social media filter trends. Flipgrid (2020) gives a voice to every teacher candidate thus "igniting student discussion and engagement".

Little formalized research has been done using Flipgrid, in fact a keyword search found only 41 hits, with the majority reporting of Microsoft's purchase of the company in 2017 and the other half descriptive about how educators can use Flipgrid (Green & X, 2017, Dunbar, 2019; Holbeck & Hartmen, 2018; Iona, 2017; Kompar, 2018; Marcoux, 2015; Rivero, 2017). CoI teaching presence has been shown to increase when video-based discussion platforms are implemented (Akyol, 2014). Stoszkowski (2018) published a list of strengths and barriers reported by undergraduates using Flipgrid. The reported strengths were access, convenience, participation, appeal, formative feedback, tracking, and compatibility and the reported potential barriers as confidence, impression management, equipment, and competitiveness (Stoszkowski,

2018). Barlett (2018) reported students who used Flipgrid found an increased connectedness to the course, their peers, and the faculty.

LMS Video-Response Discussion Boards

Leading collegiate learning management systems such a Canvas and Blackboard have video-response tools integrated into discussion board responses. In this study, a video-based discussion board is defined as users orally respond to a prompt using a LMS built-in video. Initially when using a video-based platform, many users report feeling uncomfortable recording themselves talk or listening to their own voices. However, after a few trials, users report feeling more connected to classmates because video-response AODBs allow users to view verbal and non-verbal social cues (Svokos, 2019).

There is minimal research available on the use of video discussion boards. College students slightly prefer asynchronous video discussion boards over asynchronous traditional discussion boards (Clark, Strudler, Grove, 2015; Cummins, Rajan, Hodge & Gouripeddi, 2016). Video-response AODBs provide a promising approach to achieving and meeting positive learning outcomes (Cummins et. al, 2016). Like Flipgrid, video-based AODBs are shown to be more effective in creating social and teaching presence over traditional written AODBs (Borup, West, Thomas, Graham, 2012; Akyol, 2014). Video-response AODBs also help to prepare teacher candidates with necessary critical thinking and communication skills they need for the classroom (Cummins et. al, 2016).   Minimal research focus has been placed toward the use of videos in AODBS (Ferdandez et. al, 2014).

BookSnaps

A BookSnap is a visual representation of content, traditionally a screenshot of a book excerpt, with annotated personal reflections using text, bitmojis and stickers to express emotions, thoughts, or feelings provoked by their reading. BookSnaps allow teacher candidates to identify key concepts in a reading and personalize it using their bitmojis (Forster, 2017). BookSnaps engage both hemispheres of the brain, which increases content and memory retention (Martin, 2017).

BookSnaps have taken the P-12 education sector by storm and the concept has trickled into several other academic arenas including twitter chats and higher education. The research focused on the use of social media applications like a BookSnap embraces the drastic perspectives in higher education including the "absolutely enthusiastic ones featuring social

media as the panacea evoking unlimited positive for the expression of human creativity to the most resistant ones viewed social media as totally disruptive technology contaminating education and human minds" (p. 85). BookSnaps can help teacher candidates to critically think by make personal connections to the text or identify key concepts in a visually appealing manner (Boucher, 2017; Forster, 2017; Raines, 2018). Through BookSnaps, faculty can invite teacher candidates to use social media for productive and meaningful purposes using any course content (Author, 2019; Hicks, 2018). Other than antidotal reflections, there little to no peer-reviewed research on BookSnaps.

3. METHODOLOGY

Research Design and Data Collection Instrument

This study employed a quantitative design collecting data from a 43-item online survey *Asynchronous Online Discussion Board and Instructor Feedback Survey* (AODBIF) (Appendix A). The AODBIF survey was developed by the researcher using an online platform (Qualtrics) for the purpose of this study to identify ways to enhance AODB through teacher candidate perceptions. Using Lawshe's content validity ratio, a panel of five experts with vast experience determined the AODBIF survey has 80% content validity.

For the purposes of this paper, 25 of 44 questions were analyzed to address the study's research questions. Using a Likert scale, the AODBIF survey included four questions for each platform which directly aligned to the research question. For example, teacher candidates responded these questions, "*Flipgrid provides opportunities for me to be creative, Flipgrid provides opportunities to demonstrate my understanding of the content, Flipgrid provides opportunity to share my opinions/student voice and Flipgrid is useful to my learning experience.*" These four questions were repeated for each of the additional AODB platforms including BookSnaps, video-response, and traditional written to identify the research question: what asynchronous online discussion board platform enhanced teacher candidates perceptions of creativity, ability to demonstrate content understanding, student voice, and usefulness toward learning. Additional questions requested teacher candidates to rank their preference for each platform, select one platform to complete, and provide a rationale for their selection for reliability.

Sampling

Data was collected from the researcher's two upper division elementary methods courses over three semesters at a small private, liberal arts college in the Mid-Atlantic region. All candidates enrolled in the two courses were invited to participate. 77 of the 82 (94%) enrolled candidates consented to be a participant in study and completed the end of course survey evaluating their perceptions on alternative AODB platforms related to ability to demonstrate creativity, express student voice/opinion, demonstrate understanding and usefulness toward learning.

Research Procedures

Participants enrolled in the researcher's two upper division elementary methods courses had extensive experiences with each AOBD compared in this study. Teacher candidates completed at least two of each type of AODB throughout the semester including: Flipgrid, video-response, BookSnap, and traditional based on course readings and in class learning experiences. During the final week of the course, teacher candidate participants were asked to complete the AODBIF survey. The survey was distributed through the course's learning management system to all teacher candidate participants.

4. FINDINGS AND DISCUSSIONS

Responses of teacher candidate participants in the survey questionnaire were imported to SPSS v22.0 to prepare for data analyses. Teacher candidate participant responses to Likert-type scales were numerically-coded as 1 for *strongly agree,* 2 for *agree,* 3 for *neither agree nor disagree,* 4 for *disagree,* and 5 for *strongly disagree.* Teacher candidate participants were asked to rank their preference for each of the online tools for education. To analyze the preference ranking, frequencies and percentages were used to determine the number of teacher candidate participants who ranked each online tool as 1, 2, 3, and 4. Descriptive statistics were also calculated to describe the responses of participants on the Likert-type scales for creativity, demonstration of content understanding, opinion sharing, and learning experience. The paired samples *t*-tests were conducted to achieve the purpose of the study, which is to determine the differences in preferences between four AOBD platforms for learning across the four criteria of creativity, demonstration of content understanding, student voice, and usefulness toward learning. The paired samples *t*-tests were used to determine whether there were pairwise differences in the responses of participants for the online tool for education considering each of the four factors. A significance level of .05 was used for all analyses.

A total of 77 participants completed the survey questionnaire. However, 15 participants skipped the items on ranking the four AODB platforms. The frequencies and percentages of preference ranking for AOBD platforms are presented in Table 1. The most frequent number 1 ranking was given to BookSnap ($n = 29$, 37.7%) followed by Flipgrid ($n = 22$, 28.6%). There were 25 participants who chose Flipgrid as rank 2 preferred AOBD platforms (32.5%). A total of 27 participants (35.1%) ranked traditional discussion board as the least preferred, followed by video-response ($n = 22$, 28.6%). These finding are aligned with existing research in which shows consensus regarding the disengagement of teacher candidates during traditional AODB platforms as robotic, shallow, disingenuous responses (Ding, Kim, Orey, 2016; McKinney, 2018; Xie, Durrington & Yen, 2011).

Table 1

Frequencies and Percentages of Preference Ranking for AODB platforms (N = 77)

Rank	Traditional Discussion Board		Flipgrid		Video Response		BookSnap	
	n	%	n	%	n	%	n	%
1	5	6.5	22	28.6	6	7.8	29	37.7
2	13	16.9	25	32.5	11	14.3	13	16.9
3	17	22.1	12	15.6	23	29.9	10	13.0
4	27	35.1	3	3.9	22	28.6	10	13.0
Missing	15	19.5	15	19.5	15	19.5	15	19.5
Total	77	100.0	77	100.0	77	100.0	77	100.0

Teacher candidate participants were asked to provide a rationale for their top ranking. Table 2 presents the five emergent themes (creative, easy, fun, quick and understanding) from the qualitative responses. 37% of respondents provided a rationale indicating they were able to be creative when responding on the AODB platform. 32% of participants provided a rationale that the AODB platform helped their level of understanding, 28% of participants provided a response that the AODB platform was easy. 31% of participants provided a response that the AODB platform was fun and 15% of participants indicated they preferred the AODB platform because it was quick.

Table 2

Emergent themes

Themes	Example Responses	% of participan
Creative	"I felt that I could be the most creative with the bookshop and that made me more engaged as a whole and I learned more because I was interested in it."	37%
	"I feel more creative and heard through the creativeness of art with emojis, text, and drawings."	
Easy	"…it's easy to work on mobile and computer,"	28%
	"the simplest form of discussion board"	
Fun	"I think this option is fun while still being educational"	31%
	"…it's fun that you can add fun stickers and emojis to a selfie…"	
Quick	"Took the least amount of time to submit"	15%
	"...quickest to make especially after reading though the assigned pages."	
Understanding	"it allows me to highlight salient material that I think is important and this might be different than what others think is important"	32%
	"I really like connecting the quotes to something that we have learned in class"	

Figure 1 presents the emergent themes organized by teacher candidate participant preference. Some participants provided preference responses which were coded into multiple themes. Participants who indicated their preference was driven by ability to be creative selected Flipgrid (n=10) and BookSnap (n=18). Participants who indicated their preference was because the AODB was easy selected Flipgrid (n=12), Video-response (n=1), and BookSnap (n=8). Participants who indicated their preference was because the AODB was fun selected Flipgrid (n=12) and BookSnap (n=11). Participants who indicated their preference was because the AODB response was quick selected Flipgrid (n=5) and BookSnap (n=6). Participants who indicated their preference was driven by their ability to better understand the content selected Flipgrid (n=12), video-response (n=2), and BookSnap (n=10). No participant who provided a

rationale ranked traditional AODB as their first preference; therefore, no emergent themes are reported for traditional AODBs.
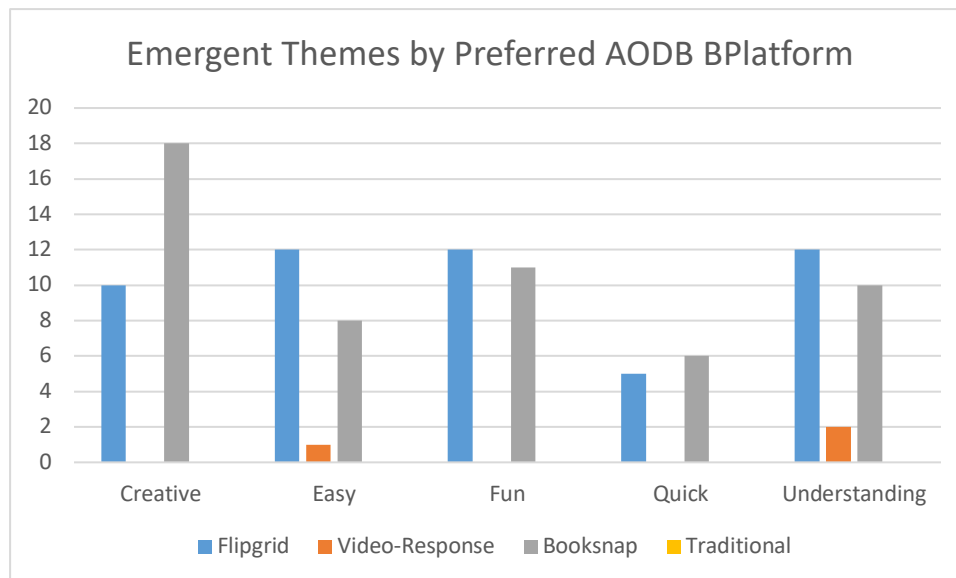

Figure 1. Emergent Themes by Preferred AODB platforms

Table 3 presents the descriptive statistics of the responses of participants on Likert-type scales for creativity, demonstration of content understanding, student voice, and usefulness toward learning on the four AODB platforms. The scale used was as follows: 1 for *strongly agree,* 2 for *agree,* 3 for *neither agree nor disagree,* 4 for *disagree,* and 5 for *strongly disagree.* Therefore, a lower score indicates higher agreement that the AOBD platform has creativity, demonstration of content understanding, student voice, and usefulness toward learning.

For creativity, the lowest mean score is observed for BookSnaps (M = 1.47, SD = .55), followed by Flipgrid (M = 1.53, SD = .55). This indicated that participants perceive BookSnaps and Flipgrid as the *AODB* platforms that allows them to be creative. Teacher candidate participants perceive that traditional asynchronous online discussion boards allow the least level of creativity among the four AODB platforms (M = 2.42, SD = 1.04).

For demonstration of content understanding, the lowest mean score is observed for Flipgrid (M = 1.46, SD = .55), followed by video-response (M = 1.65, SD = .74). This indicated that participants perceive Flipgrid and video-response asynchronous online discussion boards as the AODB platforms that allows them to demonstrate content understanding. Teacher candidate

participants perceive that BookSnaps allow the least level of demonstration of content understanding among the four AODB platforms (M = 1.81, SD = .87).

For student voice, the lowest mean score is observed for Flipgrid (M = 1.42, SD = .52), followed by video-response (M = 1.58, SD = .66). This indicated that participants perceive Flipgrid and video-response as the AODB platforms that allows them to promote their voice. Teacher candidate participants perceive that BookSnaps allow the least level of student voice among the four AODB platforms (M = 1.77, SD = .79).

For usefulness toward learning, the lowest mean score is observed for Flipgrid (M = 1.57, SD = .68), followed by video-response asynchronous online discussion boards (M = 1.78, SD = .7). This indicated that participants perceive Flipgrid and video-response asynchronous online discussion boards as the AODB platforms that are useful for their learning experience. Teacher candidate participants perceive that traditional AODB allow the least level of usefulness among the four AODB platforms (M = 1.91, SD = .73).

The social aspect of Flipgrid aligns with all three dimensions of the CoI framework. The social dimension is the most obvious as the teacher candidates have the opportunity to interact with each other using familiar social tools. Teacher candidates have the opportunity to process and construct meaning of the content through their Flipgrid response. Faculty have the option to imbed the teaching dimension asynchronously through Flipgrid through the prompt and attachments (such as reading an article or watching a lecture). All three presences of the CoI framework can be found when using Flipgrid. It is possible the CoI intersection helped teacher candidates to feel a deep and meaningful learning experience when using Flipgrid (Huang et al, 2018).

Table 3

Descriptive Statistics of the Responses on Four Factors

		N	Min	Max	Mean	SD
Creativity	Flipgrid	75	1	3	1.53	0.55
	Video-Response	77	1	5	1.86	0.85
	BookSnaps	77	1	3	1.47	0.55
	Traditional Asynchronous Online Discussion Boards	77	1	5	2.42	1.04
Demonstration of Content Understanding	Flipgrid	76	1	3	1.46	0.55
	Video-Response	77	1	4	1.65	0.74
	BookSnaps	77	1	5	1.81	0.87

	Traditional Asynchronous Online Discussion Boards	77	1	3	1.70	0.56
Student Voice	Flipgrid	77	1	3	1.42	0.52
	Video-Response	77	1	3	1.58	0.66
	BookSnaps	77	1	5	1.77	0.79
	Traditional Asynchronous Online Discussion Boards	77	1	4	1.74	0.66
Usefulness	Flipgrid	77	1	4	1.57	0.68
	Video-Response	77	1	5	1.78	0.79
	BookSnaps	77	1	5	1.81	0.83
	Traditional Asynchronous Online Discussion Boards	77	1	4	1.91	0.73

Four paired-samples t-tests were conducted to determine the differences in creativity responses between the four AODB platforms. The results of the analyses are presented in Table 4. The results showed that there is significant difference between Flipgrid and Video-responses (t = -3.361, p-value = .001) and between Flipgrid and traditional asynchronous discussion boards (t = -7.577, p-value < .05). The results showed that in terms of creativity, participants preferred Flipgrid significantly as opposed to video-response, and traditional asynchronous discussion boards. This is likely due to the social and informal aspects of BookSnaps and Flipgrid which include selfies, bitmojis, stickers, GIFs, and filters that are not available on the video-response and traditional platforms. The results align with Carter (2002), who found creativity is more likely to occur in familiar and informal contexts.

Table 4

Paired Samples t-Test for Difference between Creativity Responses

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
Creativity		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Flipgrid - Video-Response	-.320	.825	.095	-.510	-.130	-3.361	74	.001
Pair 2	Flipgrid - BookSnaps	.080	.693	.080	-.079	.239	1.000	74	.321
Pair 3	Flipgrid - Traditional Asynchronous Online Discussion Boards	-.893	1.021	.118	-1.128	-.658	-7.577	74	.000

Four paired-samples t-tests were conducted to determine the differences in demonstration of content understanding responses between the four AODB platforms. The results of the analyses are presented in Table 5. The results showed that there is significant difference between Flipgrid and Video-responses (t = -2.190, p-value = .032), between Flipgrid and BookSnaps (t = -3.304, p-value = .001), and between Flipgrid and traditional asynchronous discussion boards (t = -3.174, p-value = .002). The results showed that in terms of demonstration of content understanding, participants preferred Flipgrid significantly as opposed to the other AODB platforms. AODBs are commonly used by instructors to promote and check for content understanding (Campbell, Gibson, Hall, Richards & Callery, 2008; Kumari, 2001; Lyons & Evans, 2013). The results indicate participants felt they were able to best able to demonstrate their understanding of course content on Flipgrid.

Table 5

Paired Samples t-Test for Difference between Demonstration of Content Understanding Responses

	Paired Differences							
Demonstration of Content Understanding	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	df	Sig. (2-tailed)
Pair 1 Flipgrid - Video-Response	-.171	.681	.078	-.327	-.015	-2.190	75	.032
Pair 2 Flipgrid - BookSnaps	-.342	.903	.104	-.548	-.136	-3.304	75	.001
Pair 3 Flipgrid - Traditional Asynchronous Online Discussion Boards	-.237	.651	.075	-.385	-.088	-3.174	75	.002

Four paired-samples t-tests were conducted to determine the differences in student voice responses between the four AODB platforms. The results of the analyses are presented in Table 6. The results showed that there is significant difference between Flipgrid and Video-responses (t = -2.189, p-value = .032), between Flipgrid and BookSnaps (t = -3.975, p-value < .05), and between Flipgrid and traditional asynchronous discussion boards (t = -4.205, p-value < .05). The results showed that in terms of student voice, participants preferred Flipgrid significantly as opposed to all other AODB platforms. Participants were able to express their understanding through auditory voice on Flipgrid and voice-response or their linguistic words using traditional

versus primarily images when using the BookSnap. Education preparation faculty have to be intentional if they are going to promote student voice (Wilks et al., 2019). If utilized appropriately AODBs can serve as a platform for teacher candidates to share their voice.

Table 6

Paired Samples t-Test for Difference between Student Voice Responses

		Paired Differences							
				Std. Error	95% Confidence Interval of the Difference				Sig. (2-tailed)
Opinion Sharing		Mean	Std. Deviation	Mean	Lower	Upper	t	df	
Pair 1	Flipgrid - Video-Response	-.169	.677	.077	-.322	-.015	-2.189	76	.032
Pair 2	Flipgrid - BookSnaps	-.351	.774	.088	-.526	-.175	-3.975	76	.000
Pair 3	Flipgrid - Traditional Asynchronous Online Discussion Boards	-.325	.677	.077	-.478	-.171	-4.205	76	.000

Four paired-samples t-tests were also conducted to determine the differences in usefulness responses between the AODB platforms. The results of the analyses are presented in Table 7. The results showed that there is significant difference between Flipgrid and Video-responses ($t = -2.233$, p-value = .028), between Flipgrid and BookSnaps ($t = -2.394$, p-value = .019), and between Flip-grid and traditional asynchronous discussion boards ($t = -3.541$, p-value = .001). The results showed that in terms of usefulness, participants preferred Flipgrid significantly as opposed to the other AODB platforms. Teacher candidates perceive AOBDs as valuable educational tools that are helpful toward learning (Ajayi, 2009; Reonieri, 2006; Birch & Volkov, 2007). Some learning experiences are going to be viewed as more purposeful than others. Flipgrids and video-response AOBDs require teacher candidates to explain their understanding. While BookSnaps were viewed as more fun or creative.

Table 7

Paired Samples t-Test for Difference between Learning Experience Responses

	Learning Experience	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Flipgrid - Video-Response	-.208	.817	.093	-.393	-.022	-2.233	76	.028
Pair 2	Flipgrid - BookSnaps	-.234	.857	.098	-.428	-.039	-2.394	76	.019
Pair 3	Flipgrid - Traditional Asynchronous Online Discussion Boards	-.338	.837	.095	-.528	-.148	-3.541	76	.001

The theoretical framework for this study was Garrison et. al (2000) Community of Inquiry (CoI). Within the CoI framework, deep and meaningful learning occurs at the intersection of teaching, cognitive and social presence (Huang et al., 2018). AODBs are frequently used in teacher education coursework to develop the community of inquiry presences. Responses can indicate level of content understanding and cognitive presence. Additionally, discussion board responses can provide an environment for developing a social presence when the prompt is purposeful.

AODBs have been a common practice in higher education to promote understanding, participation, and collaboration. Teacher candidates tend to have higher academic performance when they are more actively involved in using course materials and readings (Campbell, Gibson, Hall, Richards & Callery, 2008; Kumari, 2001; Lyons & Evans, 2013; Gerosa, Filippo, Pimentel, Fuks, & Lucena, 2010). As technology continues to advance, the National Research Council (1999) calls to for faculty better understand technology tools of instruction, explaining "what has not yet been fully understood is that computer-based technologies can be powerful pedagogical tools… extensions of human capabilities and contexts for social interactions supporting learning (p. 218). The purpose of this study was to identify teacher candidate perceptions of four AODB platforms. The study investigated ways to enhance understanding, creativity, student voice, and usefulness toward learning through evaluating teacher candidate perceptions of four AOBD platforms.

Participants indicated their strongest preference for BookSnaps (37.7%) and Flipgrid (28.6%) over video-response (7.8%) and traditional (5%) platform. These finding are aligned with existing research in which shows consensus regarding the disengagement of teacher candidates during traditional AODB platforms as robotic, shallow, disingenuous responses (Ding, Kim, Orey, 2016; McKinney, 2018; Xie, Durrington & Yen, 2011).

The results found Flipgrid had the highest ranking for all four criteria including: enhancing creativity, demonstrating understanding, student voice, and usefulness toward learning. The social aspect of Flipgrid aligns with all three dimensions of the CoI framework. The social dimension is the most obvious as the teacher candidates have the opportunity to interact with each other using familiar social tools. Teacher candidates have the opportunity to process and construct meaning of the content through their Flipgrid response. Faculty have the option to imbed the teaching dimension asynchronously through Flipgrid through the prompt and attachments (such as reading an article or watching a lecture). All three presences of the CoI framework can be found when using Flipgrid. It is possible the CoI intersection helped teacher candidates to feel a deep and meaningful learning experience when using Flipgrid (Huang et. al, 2018).

As teacher educators, we claim to understand the importance of differentiation however, teacher education faculty heavily utilize traditional AODBs. Even if they know they may not be effective for all learners (Green & Green 2018). This was also confirmed by the data in this study as 27 participants ranked traditional discussion boards as their least preferred AODB. Teacher candidate participants selected alternative platforms over traditional because they enabled them to demonstrate their understanding (32%), be more creative (37%), or were considered more fun (31%), easy (28%) or quick (15%).

Technology is utilized in higher education ubiquitously and today's teacher candidates are constantly on their devices for academic and person reasons. The four AOBDs used in this study offer teacher candidates innovative, immediate, interactive, and investigative approaches to learning (Buckingham, 2006). Educator preparators should consider modifying their learning environments such as AODB platforms to provide differentiated learning experiences inclusive of all learners (Vaughan 2014).

5. CONCLUSIONS, LIMITATIONS AND SUGGESTIONS

Instructional technology is constantly changing and educator preparation faculty have the option to utilize technology as a positive tool which can enhance understanding, creativity, student voice, and usefulness. This study will add to the current research on AODBs by helping faculty to increase the CoI. The participating teacher candidate responses indicate their overall preference toward the three alternative AODB platforms including Flipgrid, Video-response, and BookSnap over traditional AODB. Therefore, education preparation faculty could consider integrating varied formats of AODBs into their courses.

This study had a small sample size and participants in this study were generally agreeable to the variety of AODB utilized by the researcher. Few teacher candidate participants indicated they disagreed or strongly disagreed on the survey. Additionally, when evaluating for enhancing creativity, understanding, student voice, and usefulness participants preferred Flipgrid over video-response, BookSnaps, and traditional AODBs. It should be noted Flipgrid was the first AODB listed on the Qualtrics survey which may have played a role in its higher ranking throughout the study. This study's results participants preferred alternative AODBs over traditional AODBs, all classroom dynamics are different; thus, implementation of any of these platforms do not guarantee the same results.

Ringler, Schubert, Deem Flores, & Friestad-Tate (2015) found the majority of empirical research has focused on the quality of responses versus the type or platform of AODB. Four AOBD platforms were selected for this study; however, they are not the only formats available. It is clear as institutions continue to broaden their online and hybrid instruction more research is necessary on alternative platforms for AODBs. Future studies on alternative AOBD platforms and evaluating alternative criteria are recommended as there is much to learn about the implementation and effectiveness of alternative AODBs.

Eşzamansız Çevrimiçi Tartışma Panolarına İlişkin Öğretmen Adaylarının Görüşleri

Özet

Eşzamansız çevrimiçi tartışma panoları, geleneksel, karma ve çevrimiçi derslerde sıklıkla kullanılan pedagojik araçlardır. Araştırmalar, öğretmen adaylarının geleneksel eşzamansız çevrimiçi tartışma panolarının monoton yapısıyla hayal kırıklığına uğrayabileceğini ortaya çıkarmıştır. Öğretmen eğitimi sürecinde, öğretmen adayları farklı şekillerde öğrenmektedir. Bu bağlamda, geleneksel tartışma panoları tüm öğretmen adayları için etkili bir araç değildir. Öğretim üyeleri, alternatif eşzamansız tartışma panosu platformlarını eğitim sürecine dahil ederek öğrenme sürecinde farklılaşma sağlayabilirler. Bu araştırma, anket aracılığıyla 77 öğretmen adayının; yaratıcılığa ilişkin algılarını ve anlama düzeylerini ölçüp öğrencilerin sesini güçlendirmiş ve öğrenmeye yönelik yararlılığı ortaya koymuştur. Araştırma sonuçları, katılımcıların BookSnaps, Flipgrid ve video yanıtını, geleneksel tartışma panolarına tercih ettiğini göstermiştir. Ayrıca, yaratıcılığı, anlayışı, öğrenci sesini

ve kullanışlılığı geliştirmek için katılımcıların Flipgrid'i tercih ettiği bulunmuştur. Bu bağlamda, eşzamansız yüksek kaliteli bir tartışma panosu deneyimi yaratan faktörleri anlamak önemlidir. Bu araştırma, öğretim üyelerinin eşzamansız çevrimiçi tartışma panosu kullanarak öğrenme deneyimini nasıl güçlendireceklerini belirlemelerine yardımcı olabilir.

Anahtar kelimeler: Eşzamansız çevrimiçi tartışma panosu, öğretim teknolojileri, öğretmen eğitimi

---

About the Author

Jennie M. Carr

Jennie M. Carr is an Associate Professor of Education and the Elementary Education Program Coordinator at Bridgewater College. She is passionate about instructional technology and helping her teacher candidates pursue their classroom dreams. Dedicated to the field of education for 15 years, Jennie is an award-winning teacher with published work in the areas of technology, mentorships, care, and relationships.

Mailing Address: 402 E. College Street Bridgewater VA 22821 USA
E-mail: jcarr@bridgewater.edu

REFERENCES

Ajayi, L. (2009). An exploration of pre-service teachers' perceptions of learning to teach while using asynchronous discussion board. *Educational Technology & Society*, 12(2), 86+.Retrieved from https://linkgalecom.ezproxy.liberty.edu/apps/doc/A198291285/AONE?u=vic_liberty& sid=AONE&xid=85993632

Akyol, Z. (2014). The development of a community of inquiry over time in an online course; Understanding the progression and integration of social, cognitive, and teaching presence. *Journal of Asynchronous Learning Networks* 12(3-4), 3-22.

Author. (2019). BookSnaps for enhancing student teaching. *The teaching professor.* https://www.teachingprofessor.com/topics/online-learning/booksnaps-for-enhancing-student-learning/

Biesenbach-Lucas, S. (2003). Asynchronous discussion groups in teacher training classes: perceptions of native and non-native students. *Journal of Asynchronous Learning Networks*, 7(3), 24+. Retrieved from http://link.galegroup.com.ezproxy.liberty.edu/apps/doc/A284325565/AONE?u=vic_libert y&sid=AONE&xid=e84c12b7

Birch, D., &Volkov, M. (2007). Assessment of online reflections: Engaging English Second Language (ESL) students. *Australasian Journal of Educational Technology*, Vol.23, No.3, pp.291-306.

Borup, J., West, R. E., Thomas, R. A., & Graham, C. R. (2014). Examining the impact of video feedback on instructor social presence in blended courses. International Review of *Research in Open and Distributed Learning*, 15(3), 232-256. doi:10.19173/irrodl.v15i3.1821

Boucher, J. (2017, Oct 11). Do your BookSnaps seem flat or disorganized? Spice up and organize BookSnaps using Google Drawings will adding gifs, bitmojis, and word art to code text. *Flipped Tech Coaching with Joli*. Retrieved from https://flippedtechcoaching.com/2017/10/11/google-drawings-BookSnaps-promote-thinking-and-creativity-using-bitmojis-student-created-stickers-and-images-to-code-the-text/

Clark, C., Strudler, N., & Grove, K. (2015). Comparing asynchronous and synchronous video vs. text based discussions in an online teacher education course. *Online Learning Journal* [OLJ], *19*(3), 48+. Retrieved from https://link-gale-com.ezproxy.liberty.edu/apps/doc/A443459150/AONE?u=vic_liberty&sid=AONE&xid= eb8c5f65

Cummins, M., Rajan, N. S., Hodge, C., & Gouripeddi, R. (2016). Patterns and perceptions of asynchronous video discussion in a graduate health sciences course. *Journal of Nursing Education*, 55(12), 706-710. doi:http://dx.doi.org.ezproxy.liberty.edu/10.3928/01484834-20161114-08

Dunbar, L. (2019). When Responses Cannot Be Written Down: Video Submission Possibilities in the Music Classroom. *General Music Today*, 32(3), 29–30. https://doi-org.ezproxy.liberty.edu/10.1177/1048371319832880

Fernandez, V., Simo, P., Castillo, D., & Sallan, J.M. (2014). Online discussion forums with embedded streaming videos on distance courses. *Journal of Technology and Science* Education. Retrieved from http://dx.doi.org/10.3926/jotse.91

Flipgrid Announces Explosive 800 Percent Year-Over-Year Growth in 2017. (2017, January 31). *Business Wire* (English). Retrieved from http://search.ebscohost.com.ezproxy.liberty.edu/login.aspx?direct=true&db=nsm&AN=6CU9200107142017013100587&site=ehost-live&scope=site

Garrison, D.R., Anderson, T., Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education.*2(2-3). 87-105.

Hara, N., Bonk, C. J., & Angeli, C. (2000). Content analysis of online discussion in an applied educational psychology course. *Instructional Science*, 28(2) Retrieved from http://www.jstor.org/stable/23371529

Hattie, J. (2010). How would we know of the effects of teacher education in these times of National Standards? Keynote presentation at the Teacher Education of Aotearoa/New Zealand Biannual Conference, Auckland, October 25, 2010.

Hicks, T. (2018). The next decade of digital writing. *Voices from the Middle*, 25(4), 9-14. Retrieved from http://ezproxy.liberty.edu/login?url=https://search-proquest-com.ezproxy.liberty.edu/docview/2039201206?accountid=12085

Holbeck, R., & Hartman, J. (2018). Efficient Strategies for Maximizing Online Student Satisfaction: Applying Technologies to Increase Cognitive Presence, Social Presence, and Teaching Presence. *Journal of Educators Online*, 15(3), 91–95. https://doi-org.ezproxy.liberty.edu/10.9743/jeo.2018.15.3.6

Huang, W., Hurt, A., Richardson, J. C., Swan, K., & Caskurlu, S. (2018). Community of Inquiry Framework. *Purdue Repository for Online Teaching and Learning*. Retrieved from https://www.purdue.edu/innovativelearning/supporting-instruction/portal/files/4_Community_of_Inquiry_Framework.pdf

Kompar, F. (2018, 02). "Mile deep" digital tools. *Teacher Librarian*, 45, 66-69,71. Retrieved from http://ezproxy.liberty.edu/login?url=https://search-proquest-com.ezproxy.liberty.edu/docview/2015789464?accountid=12085

Kreijns, K., Kirschner, P., Jochems, W., & Burren, H. (2004). Determining sociability, social space, and social presence in (a)synchronous collaborative groups. *CyberPsychology & Behavior*, 7(2), 155172. doi: 10.1089/109493104323024429

Kumari, D. S. (2001). Connecting graduate students to virtual guests through asynchronous discussions--analysis of an experience. *Journal of Asynchronous Learning Networks*, 5(2), 53+. Retrieved from http://link.galegroup.com/.ezproxy.liberty.edu/apps/doc/A284451536/AONE?u=vic_l bert   y&sid=AONE&xid=32486e42

Lyons, T. Evans, M. (2013). Blended learning to increase student satisfaction: an exploratory study. *Internet Reference Services Quarterly*. 18. pp. 43-53

Marcoux, E. Q. B. Q. (2015). New device advice. *Teacher Librarian*, 42(3), 70. Retrieved from

http://link.galegroup.com.ezproxy.liberty.edu/apps/doc/A404590055/AONE?u=vic_li
berty&sid=AONE&xid=58633bc6

Martin,   T.   (2017).   #BookSnaps   Snapchat   in   Education.
https://www.viewsonic.com/us/blog/post/view/id/6712

McKinney, B.K. (2018). The impact of program-wide discussion board grading rubrics on
students   and   faculty   satisfaction.   *Online   Learning*,   22(2),   289-299.
doi:10.24059/olj.v22i2.1386

National Research Council (1999). How people learn: Brain, mind, experience, and school,
Washington, DC: National Academy Press.

Raines, A. (2018, Aug 30). Engaging students with #BookSnaps: Reinventing how your
students discuss text within the classroom. *Achieve the Core*. Retrieved from
https://achievethecore.org/aligned/engaging-students-BookSnaps/

Ringler, I., Schubert, C., Deem, J., Flores, J., Friestad-Tate, J., & Lockwood, R. (2015).
Improving the asynchronous online learning environment using discussion boards. I-
Manager's *Journal of Educational Technology,* 12(1), 15-27. Retrieved from
http://ezproxy.liberty.edu/login?url=https://search-proquest-
com.ezproxy.liberty.edu/docview/1718069932?accountid=12085

Rivero, V. (2017). Reaching out to the World. *Internet@Schools*, 24(2), 5. Retrieved from
http://search.ebscohost.com.ezproxy.liberty.edu/login.aspx?direct=true&db=f5h&AN
=121676165&site=ehost-live&scope=site

Reonieri, D. C. (2006). "Optimizing the number of students for an effective online discussion
board   learning   experience".   Retrieved   from   http://files.eric.ed.gov   /fulltext
/ED494890.pdf [23]. Sa

Remesal, A., & Colomina, R. (2013). Social presence and online collaborative small group
work: A socio-constructivist account. *Computers & Education*, 60(\), 357-367. doi:
10.1016/i.compedu.2012.07.009

Richardson, J., Arbaugh, J., Cleveland-Innes, M., Ice, P., Moller, L., Huett, J., Garrison, D.
(2012). Using the Community of Inquiry Framework to Inform Effective Instructional
Design. In *The next generation of distance education unconstrained learning ∕* (pp.
42–125). https://doi.org/10.1007/978-1-4614-1785-9_7

Stoszkowski, J. (2018). Using Flipgrid to develop social learning. *Compass: Journal of
Learning and Teaching*, 11(2). DOI: http://dx.doi.org/10.21100/compass.v11i2.786

Svokos, G. R. (2019). *Video vs. text in discussion boards: Exploring asynchronous video communication among second language undergraduates in a blended U.S. english composition course* (Order No. 13856767). Available from ProQuest Dissertations & Theses Global. (2235436246). Retrieved from http://ezproxy.liberty.edu/login?url=https://search-proquest-com.ezproxy.liberty.edu/docview/2235436246?accountid=12085

Wilks, J. L., Snow, M., Lasczik, L., Bowling, A., Southern Cross University, & University of Notre Dame. (2019). Working towards 'doing it better' : Seeking the student voice in teacher education. *Australian Journal of Teacher Education (Online)*, 44(1), 76-92. doi:10.14221/ajte.2018v44n1.5

Xie, K., Durrington, V., & Yen, L. L. (2011). Relationship between students' motivation and their participation in asynchronous online discussions. *Journal of Online Learning and Teaching*, 7(1), 17-29.

Yeh, H., & Lahman, M. (2007). Pre-service teachers' perceptions of asynchronous online discussion on blackboard. *The Qualitative Report*, 12(4), 680.

Appendix A: Asynchronous Online Discussion Board and Instructor Feedback Part 1

1. I look forward to completing Traditional Asynchronous Online Discussion Boards.
2. I look forward to completing Technology Enhanced Asynchronous Online Discussion Boards.

Flipgrid Section:
3.   Flipgrid provides opportunities for me to be creative
4.   Flipgrid provides opportunities to demonstrate my understanding of the content
5.   Flipgrid provides opportunities to share my opinions/student voice
6.   Flipgrid is useful in my learning experience

Video-Response Section:
7.   Video-Response provides me with opportunities to be creative
8.   Video-Response provides opportunities to demonstrate my understanding of the content
9.   Video-Response provide opportunities to share my opinions/student voice
10.   Video-Response is useful in my learning experience

BookSnap Section
11.   BookSnaps provides opportunities for me to be creative
12.   BookSnaps provide opportunities to demonstrate my understanding of the content
13.   BookSnaps provide opportunities to share my opinions/student voice
14.   BookSnaps are useful in my learning experience

Traditional written Section
19.   Traditional written provide me with opportunities to be creative
20.   Traditional written provide opportunities to demonstrate my understanding of the content
21.   Traditional written provide opportunities to share my opinions/student voice
22.   Traditional written are useful in my learning experience

23.   Rank your preference for completing each of the following Asynchronous Online Discussion Board: 1st as the highest and 4th as the lowest.
        Traditional written
        Flipgrid
        Video Response
        BookSnap

24.   If you could select one of the technology-enhanced discussion boards to complete, which would you select?

25.   Why do make this selection?