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# Discussion Boards in the Online Classroom: Are They Actually Influencing Instructor Mediated Immediacy, Student Motivation, Student Affective Learning, Student Connectedness, and Online Learning Climate?

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# DISCUSSION BOARDS IN THE ONLINE CLASSROOM: ARE THEY ACTUALLY INFLUENCING INSTRUCTOR MEDIATED IMMEDIACY, STUDENT MOTIVATION, STUDENT AFFECTIVE LEARNING, STUDENT CONNECTEDNESS, AND ONLINE LEARNING CLIMATE?

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Discussion boards are one of the most popular forms of asynchronous discussion in online classes. Utilized by instructors in asynchronous and synchronous courses to facilitate class discussions, they offer a means for the class to communicate among each other and with the instructor. Few researchers have examined how the use of discussion boards in the online classroom affects instructor mediated immediacy, student motivation, affective learning, connectedness, and the online learning climate. This study sought to examine the influence of discussion boards on these variables. After review of research on discussion boards and related variables, participants completed a questionnaire composed of closed- and open-ended questions. Students currently enrolled in an asynchronous or synchronous, online class which utilized asynchronous discussion boards completed the survey to determine their perceptions of how discussion boards affected their learning and connection in the course. A multivariate ANOVA test found differences occurring between the discussion boards optional condition ($M = 70.75$, $SD = 20.72$) and both the no discussion boards condition ($M = 87.38$, $SD = 20.12$) and the required, graded discussion boards condition ($M = 84.72$, $SD = 18.96$) for motivation. A thematic analysis revealed consistent themes for all other dependent variables. Participants utilized

discussion boards most commonly only if it were for a grade and felt discussion boards did not bring them closer to their instructor. Discussion boards were seen as a place for student-to-student conversation, but they did not bring students closer on a personal level or contribute to the online learning climate positively.

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CHAPTER I: LITERATURE REVIEW

The number of students taking online courses has vastly increased in recent years due to the COVID-19 pandemic. As of August 2020, 80% of families reported their children were engaging in some form of online, distance learning (McElrath, 2020). It is reasonable to suspect the trend of online learning will continue long after the pandemic has ended now that instructors have seen the opportunities available with online learning. Online courses before the start of the COVID-19 pandemic in 2020 were primarily asynchronous learning networks where students participated and interacted with one another and the instructor at their own pace and utilized a threaded discussion forum as the main form of classroom discussion (Driscoll et al., 2012). Synchronous courses, or courses where the instructor and students meet at the same time via video chat (e.g., Zoom or Google Classroom), provide the ability to have live class discussions and most closely resemble the in-person classroom (Watson & Sutton, 2012). While many online classes take place synchronously, some instructors also utilize asynchronous discussion boards for out-of-class discussions as a main form of communication between students. This raises the question if these discussion boards are helpful to students when they are also participating in synchronous, live discussions or if they become merely *busy work*. Because the purpose of discussion boards is to facilitate communication among the class, it is important to examine whether this tactic for communication aids in student success in their course. It seems online courses will only continue to rise in popularity, so it is important to examine if discussion boards are a useful tool to enhance the learning experience.

The goal of the present study is to examine how the use of discussion boards in the online classroom as a form of communication affects instructor mediated immediacy, student motivation, student affective learning, student connectedness, and online learning climate. This

study will first examine past research on discussion boards including review of discussion board use in both asynchronous and synchronous courses, the critique of the traditional threaded discussion board forum, and research of the above variables in the online classroom.

While online classes have increased significantly since the start of the COVID-19 pandemic in 2020, discussion boards are not a new concept. Many researchers have examined online discussion boards in a variety of ways including how to best design asynchronous, online discussions (Gao et al., 2012), student perceptions of discussion boards (Amos, 2014), and the impact of discussion boards on student engagement with group work (Delaney et al., 2018). The following review of literature examines past research on the use of asynchronous discussion boards in both synchronous and asynchronous online classes; a review of the traditional threaded discussion boards forum; and research on mediated immediacy, student motivation, affective learning, connectedness, and online learning climate in the online classroom in relation to discussion boards.

**Discussion Boards**

Synchronous, online classes most closely mirror the face-to-face classroom. Synchronous classrooms typically involve a central, online classroom management system, chat tools, audio and video sharing options, ways to share content among the class, and a video chat network for meetings (Watson & Sutton, 2012). Conversely, asynchronous classes do not require students and instructors to virtually meet at the same time. Rather, students interact with each other and their instructor at times of their choosing via different asynchronous strategies (Driscoll et al., 2012). These strategies include emails, online assignments, pre-recorded audio and video lessons, Microsoft PowerPoint presentations, and discussion boards which are the primary focus of this paper (Watson & Sutton, 2012). Discussion boards are not only the primary form of

classroom discussion in asynchronous classes, but they are popular in synchronous courses as well. Instructors utilize them as supplemental discussion to the live chats (Blackmon, 2012). However, just because discussion boards are common in online classes, it does not mean they are the preferred mode of learning for students. Amos (2014) found 97% of their participants preferred synchronous, live classroom sessions over asynchronous discussion boards as means of learning course content and communicating with peers and the instructor. One reason for this is instructors sometimes try to make these asynchronous forms of communication function like a synchronous or in-person discussion or do not modify the discussion for the asynchronous context (Berry, 2018). Watson and Sutton (2012) found when students enroll in online courses, they do not necessarily expect it to replicate an in-person class. However, even though students are not expecting the same experience as in-person, courses and instruction methods need to be carefully designed. Yough et al. (2017) found when design and method of instruction are not thoughtfully considered it may lessen the efficacy of the teaching method to help students better understand the content itself. Instructors need to keep these things in mind as they format discussion boards.

Discussion boards are aimed at furthering students' understanding of course content through interaction with peers. They are designed to help students apply knowledge from readings and interact with fellow students and the instructor to better understand the material (Vitale, 2010). Delaney et al. (2018) found discussion boards can be used for better learning course content but also basic skills such as group collaboration. In this way, discussion boards aid in student learning. However, they do not always provide opportunities to practice higher-order thinking like live discussions do. Zohar and Dori (2003) found the opportunities to practice higher-order thinking to be essential to the learning process among high-achieving students. This

is where the role of the instructor becomes most important in discussion boards. An et al. (2009) found the instructor's role as the facilitator of the discussion can determine how students participate in discussion boards. The instructor should set the tone for the discussions by guiding students to participate in various ways (Bleich, 2020) and encouraging students to assume responsibility for their participation in the discussion (Mazzolini & Maddison, 2003). However, the instructor should not be placing themselves at the center of the discussion. Vitale (2010) stated the instructor should be providing expert insight on the content rather than general comments. However, effective facilitation can only assist students in as much as they are willing to be assisted.

Even with effective facilitation from the instructor, students may struggle with discussion boards when they underestimate how much self-discipline they must have while being leaders of their own learning (Comer & Lenaghan, 2012). Because students must be willing to join and contribute to collaborative activities such as discussion boards (Bromme et al., 2005), students need to have a clear understanding of what is expected and how much effort will be required of them. Because of this, instructors must clearly state what is expected in discussion boards and what constitutes thoughtful, scholarly responses (Vitale, 2010). Additionally, instructors need to consider both posting and non-posting behaviors of students, what the expectations are for these, and how they will affect student learning, connection, and affective outcomes. Non-posting behaviors include reading posts, looking for general course information, or what one might call a "lurking" of the page (Xie, 2012). The non-posting behaviors can be an indicator of student learning if proper expectations are laid out for them. These clearly laid out expectations help increase engagement among students and increase overall learning. Bleich (2020) stated learner engagement can occur in a variety of ways requiring students to use cognitive, affective, and

psychomotor proficiency and asking questions that promote self-discovery and personal reflections. Instructors must monitor both of these asynchronous communication behaviors to ensure the discussion board is creating a constructive learning environment (Maor, 2003). While discussion boards can sometimes help produce these self-discoveries, some scholars would argue these forms of engagement and learning are hard to reach when utilizing the traditional threaded forum format in discussion boards.

**Threaded Discussion**

Discussion boards provide an outlet for student discussions furthering students understanding of content while also providing them the opportunity to engage with other students. They are used for students to do everything from simply answering questions found directly in the reading to elaborating on and connecting readings to other course concepts to sharing personal experiences, thoughts, and emotions with fellow classmates (Li & Yu, 2020). Unfortunately, it can be hard to create and maintain productive, interactive discussions using a traditional threaded discussion forum which is the most common type of discussion board used in online classes (Gao et al., 2012). The traditional threaded discussion allows students to create new posts, react to fellow students' posts through comments, apply knowledge, and learn through interaction with peers and the instructor (Vitale, 2010). These types of forums typically only focus on students answering questions easily found in readings and giving surface level responses to other students. It often results in students interacting with the most recent post as it is at the top of the forum. This results in multiple small conversations and ideas and difficulty in maintaining a focused discussion (Gao et al., 2012).

The threaded discussion board gives each student the opportunity to create their own post and respond to other students but may not generates student interaction which increases

understanding of course content and connection between students (Cox & Cox, 2008). This discussion board style leaves the students to lead the discussions with generally very little guidance outside of the questions posed by the instructor. When students are familiar with the in-person classroom where the instructor guides the discussion and topics, it can be overwhelming for students to decide which posts to read, which to respond to, or what information they should add which can result in less communication from individuals (Journell, 2008). This can be a hinderance to student learning and connection when the students are left to initiate and regulate their conversations if the instructor is not carefully and effectively monitoring and guiding the discussions. Thus, it is important to first examine the effectiveness of asynchronous, threaded discussion boards to influence student learning and connection in the online classroom before further diving into how to best utilize online discussion boards.

**Communication in Online Classes**

Discussion boards are one of the primary options instructors provide in online courses for students to communicate with one another. Bliss and Lawrence (2019) found discussion boards may enhance students' learning experience in the online classroom by helping build social presence and interaction among students. They also aid in fostering a sense of community among students by encouraging collaboration and support from fellow students (Delaney et al., 2018). However, this can be hard to accomplish due to the lack of verbal and nonverbal cues in the online classroom. It can sometimes seem as though students talk *at* one another rather than *with* one another (Journell, 2008). This can make creating and maintaining social presence and a community difficult (Evans et al., 2019). Namely, factors including instructor mediated immediacy, student motivation, affective learning, connectedness, and online learning climate can be challenging to maintain in the online classroom and especially regarding discussion

boards. Mediated immediacy is important to examine first as it can be influential on all other factors.

### Mediated Immediacy

Immediacy has long been studied in the classroom. Mehrabian (1966) defined immediacy as the perception of physical and psychological closeness between individuals. In the classroom, it has been defined as verbal and nonverbal behaviors which send positive messages of liking and convey closeness, decrease psychological distance between people, and increase student motivation (Dixson et al., 2016). Andersen (1979) defined teacher immediacy as the nonverbal behaviors which reduce distance, both physical and psychological, between students and teachers. Immediacy conveys psychological availability and closeness between a student and instructor (Wilson & Locker, 2007). Immediacy can be found in nonverbal and verbal forms. Nonverbal immediacy behaviors include proxemics or physical distance, haptics or touch, vocalics or vocal variety and expression, kinesics or facial expressions, posture, and body gestures, eye contact, chronemics or time spent with students, and physical appearance including appropriate attire (Comstock et al., 1995). Verbal immediacy behaviors include the instructors use of praise, humor, willingness to have conversation with students, calling students by name, and asking students for their input in discussions (Carrell & Menzel, 2001). Research has found immediacy is one of the most important factors in motivating students in a class (Kucuk, 2009). An increased feeling of closeness creates a positive affect for the instructor which can lead to a positive affect for the class itself (Baker, 2004). For these reasons and with the rise of online learning, it is important to examine the role of immediacy in the online classroom when examining online discussion boards and more specifically mediated immediacy.

Mediated immediacy is defined by O'Sullivan et al. (2004) as "communicative cues in mediated channels that can shape perceptions of psychological closeness between interactants" (p. 470). The online context lacks the face-to-face immediacy cues typically conveyed in the classroom, but immediacy is one of the leading factors in determining student participation in online, asynchronous classes (Kucuk, 2009). Instructors are thus tasked with finding different ways to maintain immediacy in the online classroom. O'Sullivan et al. identified two macro categories of mediated immediacy including approachability and regard for others. Some examples of mediated immediacy cues they list are frequent encounters, indicating availability to students, sharing jokes or funny anecdotes, demonstrating extensive knowledge on the course content, revealing personal information and interests, and creating clearly laid out online course pages and information through syllabi and emails (O'Sullivan et al., 2004). Vareberg et al. (2020) referred to ways students and the instructors communicate out-of-class as technology-mediated out of class communication. This includes email, instant messaging, and discussion boards which will be the subject of this study. Mediated immediacy can play a large role in how students feel about the course and their instructor when using discussion boards as a form of technology-mediated out of class communication (Vareberg et al., 2020).

Discussion boards are one place in the online classroom where instructors can frequently interact with students and create clear course guidelines to convey mediated immediacy cues. This is important as Russo and Benson (2005) found opportunities for students to connect to the instructor and one another were related to positive feelings towards the course. Additionally, instructor immediacy has been shown to improve the student-instructor relationship, lower students' feelings of anxiety about the course, and increase students' feelings of connectedness within the class (Creasey et al., 2009). Immediacy can be seemingly easy to convey in the in-

person classroom, but it becomes more time-consuming and complex when the instructor cannot physically be present with the students. However, the mediated course does not make immediacy behaviors impossible to achieve online. Instructors must make efforts to create immediacy behaviors in their online course though it may take longer to produce the results with students than it would in-person (Baker, 2004). These mediated immediacy actions may take more effort than typical immediacy actions such as smiling or making eye contact. If instructor mediated immediacy is lacking, the online class can feel similar to a robotic, automated course with little to no immediacy cues leaving students feeling unconnected (Campbell, 2014). Creasey et al. (2009) found student anxiety was driven by subtle, nonverbal actions from the instructor. While this study did not specifically examine discussion boards, the results can be applicable as instructors can make nonverbal actions such as responding to discussion board posts which can convey mediated immediacy cues. Thus, if discussion boards are one of the essential ways instructors can convey immediacy online and immediacy is one of the most important factors affecting student success and feelings towards a course, it is important to examine if the use of discussion boards in online classes increases student perceptions of instructor immediacy. It follows if mediated immediacy is affected by discussion board use, then student motivation, affective learning, connectedness, and the online learning climate will most likely be influenced as well. Christophel (1990) found immediacy to have a positive influence on all levels of student learning with the largest impact being on motivation. This leads to the first research question examining whether discussion boards help instructors maintain immediacy in the online classroom.

RQ1: Does the presence of discussion boards and whether they are graded affect students' perceptions of instructor mediated immediacy in online classes?

**Student Motivation**

As Christophel (1990) found, instructor immediacy has a direct influence on motivation, so it is imperative to also look at how discussion boards and student motivation affect one another. Student motivation is another widely researched area where the factors affecting it change in the online context. Online learning means learning occurs "without some of the important temporal, spatial, and intellectual supports provided in the traditional classroom," (Artino & Jones, 2012, p. 170), which may affect student motivation. Motivation is an internal force driving an individual to participate in an activity or behavior (Xie & Ke, 2010). What motivates people varies depending on the person and situation, and the self-determination theory (SDT) helps us better understand this. The SDT proposed by Deci and Ryan (2000) identified five different motivational factors individuals experience including intrinsic motivations, identified regulation, introjected regulation, extrinsic motivations, and amotivation. Intrinsic motivation occurs when students participate for the fun or challenge of the task they feel internally (Xie & Ke, 2010). Identified regulation is when students learn because it is relevant to them personally (Xie & Ke, 2010). Introjected regulation is when people learn because they do not want to feel guilty or shamed for not participating (Deci & Ryan, 2000). External motivation is when people participate to get positive outcomes or avoid negative ones such as getting a bad grade (Xie & Ke, 2010). Lastly, amotivation is when people simple are not motivated to learn (Deci & Ryan, 2000). Amotivation may be a large issue in online courses which instructors will need to address.

While the SDT outlines five factors of motivation, motivation in the classroom is different than in other aspects of life. It is an important factor to examine when researching aspects of the online classroom as it plays a large role in students' perceptions and satisfaction in

online courses (Baker & Moyer, 2018). Christophel (1990) identified motivation in the learning context as being stimulated through modeling, communication of expectations, instruction and socialization between instructors and students. It is the force driving students' choices, determines how much they will engage in the process of learning, and how much effort they will put into a class (Dörnyei & Ushioda, 2021). Christophel (1990) identified two forms of motivation including trait and state motivation. Trait motivation is a lasting predisposition towards learning while state motivation is an attitude towards a specific class. In other words, trait motivation is how one feels about learning overall, and state motivation is directed at a specific course. It has been found state motivation levels can be changed by instructors in their classroom (Christophel & Gorham, 1995). Christophel (1990) found students' state motivation to be directly affected by teacher immediacy. This emphasizes the importance of examining both mediated immediacy and motivation. This can pose issues when instructors' teaching practices do not produce the outcomes they expect from students when they are unsure why their actions did not motivate students (Bolkan, 2015). Because motivation is a key prerequisite to student learning (Domen et al., 2019), it is important to examine what motivates students within a course and leads to their success.

A benefit of online learning is it allows instructors to adjust their pedagogy based on what motivates students (Vanslambrouck et al., 2018). However, it cannot be assumed any longer that web-based learning environments automatically lead to positive web-based learning outcomes as students may be motivated differently in the online environment than in-person (Hoskins & van Hooff, 2005). For example, Florenthal (2018) found students to be motivated by the convenience of e-learning tools. Xie and Ke (2010) found motivation plays an important role in how student interact online. It may be assumed instructors hold the responsibility of

motivating students, but students play a large role in this as well. In their study, Gorham and Christophel (1992) found students perceived motivation as a student-owned problem while they perceived a lack of motivation as a teacher-owned problem. Teachers must support the autonomous needs of students while also providing structure for students which can be a difficult balance when examining what motivates students (Domen et al., 2019). Chong and Ahmed (2013) found autonomous motivation has a greater impact on quality of student learning compared to controlled motivation which emphasized the importance of self-determined motivation as outlined in the SDT.

Students must be motivated to successfully learn, and if students are not motivated, the instructor may struggle to achieve student learning in their class. Baker and Moyer (2018) found students who were intrinsically motivated in their online courses found greater value in course content and were more engaged in coursework. Conversely, students who were required to take the course felt less engaged and less motivated. Students' potential to learn in a class is dependent on their motivation in the course and is most likely to lead to actual learning (Bolkan et al., 2015). This is crucial to examine because student motivation to learn is a key contributor to student's academic success (Ahn et al., 2018). Because motivation is a key component to student success and discussion boards are the largest form of student to student and student to instructor communication, it is crucial to examine the role motivation plays in the discussion. Motivation is important to examine as it affects student success and factors such as affective learning; it also is affected by many factors including instructor mediated immediacy as discussed above. Motivation has been largely researched in many ways including its role in online courses, but little research has examined what motivates students to participate in

discussion boards and whether discussion boards affect students' overall motivation in the online course.

RQ2: What factors motivate students to participate in discussion boards?

RQ3: Does the presence of discussion boards and whether they are graded affect student motivation in an online course?

**Affective Learning**

Whether students are motivated to partake in classroom activities such as discussion boards can, in turn, influence what they learn in the course. What students think they are learning compared to what they are learning can sometimes be two very different things. There are three categories of learning objectives including cognitive, behavioral, and affective. Mottet (2015) argued all learning begins with cognition or the mental process of gaining knowledge and understanding, and it is impossible to look at affective learning without also considering cognitive learning. However for the purpose of this study, affective learning will be the focus. Research on this area brings up varying views on the definition of affective learning and what should be included. Bloom et al. (1984) first looked at affect in learning emphasizing students' feelings, tones, emotions, and acceptance within a course. McCroskey (1994) extended the definition of affect in the instructional environment to include students' attitudes, beliefs, and values relating to the skills and knowledge they have acquired in a course. There have been arguments to leave students' affect toward their instructor and liking of material out of the study of affective learning and to instead focus on whether students believe in and value the material they are learning (Myers & Goodboy, 2015). However, it is important to include how students feel about their instructor and the course itself in assessing students' affect towards a class, course content, or the instructor as those factors can influence how much effort a student puts

into a course. A student's positive attitude towards a subject or course can change how they participate in a course and their decision-making process in the course (Thweatt & Wrench, 2015). Grawemeyer et al. (2017) argue every student's learning experience is constantly transitioning between a positive and negative affective state. Because of the influence this has on learning, it can be argued a student's affect toward learning is a key factor to research when looking at learning and discussion boards. This study will look at student affective learning in terms of students' attitudes towards the course, course content, and the instructor along with students' attitudes toward the behaviors occurring in the class (Pogue & Ahyun, 2006).

Pogue and Ahyun (2006) found students' affect toward the course and learning in general can be affected by teacher immediacy, credibility, and student motivation. Thus, it is important to first examine instructor immediacy and student motivation in addition to affective learning. Pogue and Ahyun also found students who felt their expectations for the course were met by the instructor reported higher levels of affective learning compared to those who felt their expectations were not met. A student's affect toward a course can also affect their motivation to communicate. There are five products of affective learning as identified by Rovai et al. (2009). These include paying attention to some sort of stimulus, responding to the stimulus or reacting to it, valuing ideas, organizing and comparing values, resolving conflicts to develop a personal value system, and commitment to an internal value system. Learning is based on the context it occurs in, so researchers must measure changes in how students feel about the learning, class, and instructor (Lane, 2015). A deeper look into what contributes to affective learning can assist instructors in understanding how they can make a lasting impression on students through their course. One reason for this is students' affective experiences influence their future perceptions, behaviors, and outcomes in a course (Bolkan, 2015). Thus, putting more thought and effort into

affective learning outcomes could "instead of teaching students what to know–teach students how to recognize, be aware of, respond to, value and enact with the world around them" (Gaffney & Dannels, 2015, p. 502). There is more to affective learning than the literal transfer to information from instructor to student including how much students enjoy the course, their willingness to participate in a similarly formatted class, and their liking of course content and their instructor (Witt, 2015). Because of the impact it can have on students' success in a course, it is important to examine specifically how discussion boards in the online environment contribute to students' affective learning in a course.

While much research has examined affective learning in the face-to-face classroom, more needs to be examined on how affective learning changes in the online context. McCroskey (1994) identified four types of affective learning assessment including assessment of affect toward communication, assessment of affect toward communication competence, assessment of affect toward courses and teachers, and assessment of affect toward instructional programs. These have widely been used to examine affective learning in the in-person classroom. Gaffney and Kercsmar (2016) researched affective learning through the lens of the situated learning theory which states the context may affect learning more than other instructional strategies. They argued the technological context matters in affective learning outcomes and certain outcomes may be more reliable in a physically present classroom. Picard et al. (2004) stated a person must have an attachment to the subject area to become affective towards it, but this study will examine the effect the medium of learning, discussion boards, has on students attachment and liking of material, their instructor, and the course. Affective learning in the online classroom will vary from the in-person classroom, but it is pertinent to examine in the online context because it can be more of a challenge to engage learners online (Shen et al., 2009). While some researchers

have examined affective learning in the online environment, little have looked at how discussion

boards influence a students' affect toward the course which leads to the fourth proposed research

question.

RQ4: Does the presence of discussion boards in the online classroom and whether they

are graded affect students' affect toward the course?

**Student Connectedness**

Another factor commonly examined in classroom research is student connectedness.

Student connectedness is defined as a sense of belonging and acceptance a student feels among

other students in a course, the instructor, and the academic program (Des Armier & Bolliger,

2019). Student connectedness is important to look at as it has been found to influence students'

motivation and satisfaction in a course (Bolliger & Inan, 2012). Aloia (2020) found students who

felt more connected to their classmates and their instructor were more adjusted, had less anxiety,

doubt, and pessimism, and were more receptive to learning. Student perceptions of classroom

connectedness have been linked to positive affect towards their instructor, the course, and their

intent to participate (Myers & Claus, 2012). Students must feel connected to their peers in order

to feel connected to their instructor. Positive feelings of student-to-student connectedness have

been found to be associated with an increase in student involvement as students felt more open to

participating and supported by their peers (Sidelinger & Booth-Butterfield, 2010). Students have

been found to be more willing to participate and to perform classroom tasks because of these

higher levels of comfort in the course and feelings of support from the instructor and peers

(Sollitto et al., 2013).

Connectedness, however, is not easy to achieve in the classroom. The environment,

fellow students, and the instructor all affect one another and influence how connected a student

feels. Forming connections in the classroom is "not a linear process, but a function of relational development that occurs through a series of interrelated dynamic stages" (Farrell et al., 2018, p. 82). In other words, many factors affect student connectedness, and student connectedness affects many other factors. This already difficult-to-achieve factor affecting student learning is even harder to achieve online. Because most interactions students engage in during online classes are via computer-mediated communication, it can be hard for instructors to create a space which promotes connection between students and with themself (Bolliger & Inan, 2012). However, instructors must find ways to create this space as online classes continue to grow in popularity because of the ways classroom connectedness can affect a student's education. Some students choose online courses because they provide more flexibility to fit their lifestyle and needs (Berry, 2018), and because of this, they may be unable to make it to campus to visit instructors during office hours or for in-person meetings where rapport and connection is best built (Rockinson-Szapkiw, 2012). This limited contact with instructors in-person can create a sense of disconnection from the course and university among distance students (Bolliger & Inan, 2012). However, the student-instructor relationship has been proven to have a positive impact on student learning and connection.

Xerri et al. (2017) found when the teacher-student relationship was strong, students' engagement in the course and learning was higher than when the student-instructor relationship was weak. LaBarbera (2013) found students who communicated with their instructor about course content and personal matters reported more of a sense of community and satisfaction with the course and instructor compared to those who did not do this. Because instructors miss out on the face-to-face interactions in-person classes allow, they must make up for it in other ways to create a connection with and among students. Instructors may try to connect with students online

via personal interactions such as emails and can increase connection with students through timely responses and support and guidance via feedback (Gao, 2014). Students were more motivated to communicate with instructors who were perceived as accessible which is why instructors must be mindful and intentional about their emails, feedback on assignments, and discussion boards facilitations (Myers & Claus, 2012). The instructor is thus tasked with deciding on the best tools to utilize in the online classroom to create successful connection between students as peers and with the instructor. Des Armier and Bolliger (2019) found in their study the online tool most frequently used to enhance student connectedness was the course management system which has the discussion board aspect embedded into it. If personal emails contribute to connection as shown above, it begs the question if and how discussion boards contribute to a student's feelings of connectedness in the online classroom.

Much research has revealed discussion boards to be a leading tool used in online classrooms to help students connect with each other and the instructor (Amos, 2014; Evans et al., 2019; Gao et al., 2012; Li & Yu, 2020). Discussion boards may provide a collaborative learning environment which helps students become familiar with one another and creates a community of learners (Cox & Cox, 2008). However, while this opportunity may be there, it does not automatically lead to increased connections if the discussion boards are not facilitated by the instructor and properly utilized by the students. The instructor in an online course must act as the designer and facilitator by monitoring activities and being readily available to provide support to students who need it (Martin et al., 2018). Even when properly facilitated, they are only successful at creating student connections if students want connection. Students who are merely participating because they are required to may talk *at* one another rather than *with* one another which creates little connection (Journell, 2008). Drouin and Vartanian (2010) found less than

30% of participants had a desire for a sense of community in their online classes. Researchers have made arguments that the online classroom does not require the same amount of connection as the in-person classroom as the students taking these classes are not expecting the same experience as an in-person class (Brewer & Klein, 2006).

Overbaugh and Nickel (2011) tested this argument that even though student connectedness has been found to be a crucial aspect to student learning and success, online students may not be expecting or needing this connection to reach success. They found students felt their online course was a step towards completing their degree and completing a requirement and not something they were taking to connect to others. They reported generally high levels of perceived learning but only neutral levels of connection and low value of connections showing connection was not crucial for student success and learning in this study. However, it is important to note these studies were pre-pandemic when online courses were more voluntary. With the push online in 2020 and the continued rise in availability and experience with online courses, it is important to consider student connectedness in this study. Because discussion boards are a largely used tool to foster conversations in the online classroom and classroom discussions are one of the main ways students form connections in a class, it is important to examine whether discussion boards help increase classroom connectedness between students and instructors along with their fellow peers followed by how discussion boards affect the online classroom climate. This leads to the next research question of how discussion boards can affect students' feelings of connectedness with their instructor and classmates.

> RQ5: Does the presence of discussion boards in the online classroom and whether they are graded affect feelings of student connectedness to one another and/or the instructor in an online class?

**Online Learning Climate**

As this study examines the relationship between mediated immediacy, student motivation, affective learning, and connectedness in online, asynchronous discussion boards, it logically follows to also examine the relationship between discussion boards and the online learning climate. The four factors discussed thus far of mediated immediacy, student motivation, affective learning, and connectedness are connected to one another as pointed out by Christophel (1990) who found instructor mediated immediacy directly influenced student motivation and mediated immediacy and motivation both influenced student affective learning. Each construct affects one another, and it follows the constructs examined in this study may have influence on the learning climate in a classroom. Classroom climate also plays an important role in increasing student motivation, success, and engagement in learning and school in general (Patrick et al., 2011). The definition of classroom climate has been debated in the communication discipline, but for the purpose of this study, Dwyer et al.'s (2004) definition of the perceived connection, rapport, and affinity between the instructor and the students is used. These perceptions arise from the relationship between the instructor and students and are influenced by the structure and organization of the course (Moos & Trickett, 1974). Student perceptions of classroom climate may also be affected by how effective the instructor is at creating an environment where mutual interaction between the instructor and students is encouraged, fostered, and valued (Myers, 1995). The communication students experience from instructors through feedback positively impacts the classroom relationships and climate when it is positive, supportive, and clear and creates a more supportive learning environment as perceived by students (Perry et al., 2002). These positive classroom climates have been shown to contribute to higher learning outcome achievements for students (Kerssen-Griep, 2008). While classroom climate has a large influence

on students' learning in the in-person environment, it has an equal impact in the online classroom. Though the online classroom lacks the physical gathering of students in a shared space, it does not mean a classroom climate cannot exist and thus must be examined as classes shift online more and more (Kaufmann et al., 2015). This is what lead to the development of the Online Learning Climate Scale (OLCS) created by Kaufmann et al., in considering course design and structure as components affecting student perceptions of the online classroom.

The traditional and online classrooms differ in countless ways, but a positive classroom climate is necessary in both. The instructor being understanding, supportive, and sympathetic can be done in both the in-person and online classrooms, but it may be even harder to achieve online for instructors (Kaufmann et al., 2015). Sharpe et al. (2005) found students view online learning as an experience which is driven by emotion including apprehension for posting online, wanting to feel included and seen, and a need for connection with others. It is harder to create a learning community online, so instructors must work harder to actively build and maintain the classroom climate online (Vallade & Kaufmann, 2020). The in-person classroom offers opportunities for students to connect and collaborate with one another and the instructor. This can be examined through the Community of Inquiry model created by Garrison et al. (1999) which states learning happens within a community of learners via interaction of three core elements: cognitive presence, social presence, and teaching presence. Cognitive presence is defined as how well learners create shared meaning through consistent communication via critical, higher-order questions and application (Garrison et al., 2001). While this is seen as the element related to the most success in higher education, social presence contributes to the classroom climate more.

Social presence is defined as the how people perceive one another as real people and recognize their true characteristics via mediated communication (Gunawardena, 1995). Social

presence contributes to students' affect for the course and largely to the overall classroom climate. With online classes, particularly asynchronous courses where there is no face-to-face or live communication, this can be hard to achieve, but advances in technology have made it easier to virtually interact and engage in communication even without synchronous methods such as video calls which makes building social presence online still possible (Manstead et al., 2011). The ability to maintain social presence for both the students and instructor can affect classroom climate by maintaining credibility and control for the instructor and stability and self-worth for the students (Myers, 1995). In the online context, being a member of a community of learners and having a positive classroom climate helps bring together all the elements of cognitive, social, and teaching present in the Community of Inquiry model (Domakin, 2013). One key factor students seek both online and in-person is support through social interaction, consistent communication, and in receiving educational content and feedback (Lee et al., 2019), so it is essential to examine how social presence is created and how it influences the classroom climate. Social presence can be created and maintained through discussion boards in the online classroom and can help improve the classroom climate, but this creates the question of whether discussion boards are truly creating this or not. This leads to the last research question.

RQ6: Does the presence of discussion boards in the online classroom and whether they are graded attribute to positive online learning climate?

CHAPTER II: METHODS

This study employed an online questionnaire which asked students about their perceptions and feelings about online, asynchronous discussion boards and was distributed to participants at a large Midwestern university. Research questions one, two, three, five, and six were examined using a quantitative analysis, while research question four was examined with qualitative data. Open-ended, qualitative questions were asked specifically for RQ4 but gave insight to all dependent variables.

**Participants**

The sample consisted of 90 individuals who were current college students. Convenience sampling was used to recruit participants via a research board at the university, through word of mouth, and was shared via social media. Participants were required to be at least 18 years of age and enrolled in or previously enrolled in at least one online asynchronous or synchronous course utilizing asynchronous discussion boards. The study did not limit participants to a specific major or area of study and was open to all students over the age of 18. Of participants, 20% were male and 62.2% were female, and 17.8% of participants chose not to answer this question. The age of participants ranged from 18 to 38 years old. Participants primarily (80%) were between the ages of 18 to 22. Participants were primarily juniors (28.4%), freshmen (25.7%), and seniors (24.3%) followed by graduate level (16.2%) and sophomores (5.4%). The study was open to graduated individuals, but no participants selected this option. All participants were current students. Grade point average (GPA) was ranged from a 2.3 to 4.0. Most participants (51.1%) held a GPA between 3.0 to 3.96 followed by a GPA between 2.3 to 2.9 (30%) and lastly a 4.0 GPA (18.9%).

**Procedure**

       Students interested in taking the questionnaire were sent a link to complete the online

questionnaire on Qualtrics consisting of 67 questions. The study was available on a university's

research board for any student who met the criteria. Participants were assigned a random course

description indicating whether the course had discussion boards and if they were graded or not.

They were instructed to answer all questions with this assigned course description in mind. After

completing the surveys for the five variables, participants were asked to reflect on a course they

had taken which was online either synchronous, asynchronous, or hybrid and used asynchronous

discussion boards. They were asked open-ended questions about why they chose to participate in

discussion boards, what motivates them to participate in discussion boards, and if they feel

discussion boards bring them closer to their peers. To end the survey, demographic questions

were asked to determine participant age, biological sex, grade level, and GPA.

**Measures**

       The following scales were used to measure the variables of mediated immediacy, student

motivation, student affective learning, student connectedness, and online learning climate. The

researcher received copyright permission and adjusted the scales to fit this study.

      **Mediated Immediacy**

       O'Sullivan et al. (2004), identified various dimensions of mediated immediacy. These

dimensions include factors of mediated immediacy such as self-disclosure, expressiveness,

accessibility, informality, similarity, familiarity, humor, attractiveness, expertise, personalness,

engagement, helpfulness, and politeness. Using these dimensions, they created a scale to measure

mediated immediacy, and the present study used an amended version of this scale specified

towards discussion boards. All scores were combined to one composite score for mediated

immediacy. Mediated immediacy and RQ1 were measured with 10 questions (see Appendix) using a seven-point interval scale asking participants to select the number toward two opposing words (e.g., inviting and uninviting) they felt best described their feelings towards their instructor based on interactions through discussion boards. For the prompt with no discussion boards, the words discussion boards were removed from the instructions and replaced with "in your online course." All other content remained the same.

**Student Motivation**

Student motivation was examined through RQ2 and RQ3. For RQ2, open-ended questions were asked to identify what factors motivate students to participate in discussion boards. The open-ended questionnaire inquired about intrinsic motivation, identified regulation, and external motivation. Participants were asked to think of a real experience they have had in an online course which was completely online and utilized an asynchronous discussion board. To measure intrinsic motivation, a question such as, "Why do you participate or not participate in discussion boards in this course?" was used. Questions such as, "What are your feelings about discussion boards in this course?" were used to measure identified regulation. To measure external motivation, statements such as "Would you participate in discussion boards regardless of if they were required? Why or why not?" were employed.

For RQ3, Christophel's (1990) student motivation scale was modified to ask specifically about discussion boards. This scale consisted of five questions using a seven-point semantic differential scale measuring student motivation regarding discussion boards. Statements included, "My attitude about discussion board use in this course is," and "My likelihood of actually attempting to participate in discussion boards in this course is." For the prompt with no discussion boards, all wording of discussion boards was replaced with "in this course" as needed.

For example, "My attitude about the content discussed in this course is," and "My likelihood of actually attempting to participate in this course is."

### Affective Learning

This measure of affective learning focused on assessment of affect toward the course. McCroskey (1994) identified four affective orientations which are affect toward the content of the course, affect toward classes in this content, affect toward instructor, and affect toward taking classes with this instructor. The present study utilized two subscales from McCroskey's scale including affect toward content and affect toward classes in this content. Scales were modified specifically to discussion boards rather than the course as a whole. This was measured with three questions using a seven-point semantic differential scale measuring affective learning regarding discussion boards. Each of the three questions had four semantic differentials measuring good and bad, valuable and worthless, positive and negative, and unfair and fair. The prompts included, "I feel the use of discussion boards in this class is," "The likelihood of taking future courses in this content area using discussion boards is," and "I believe the ability for discussion boards in this course to help me better understand course content is." For the survey respondents who received the no discussion board condition, the first question was removed altogether as it was discussion board specific. The other questions were altered to remove verbiage about discussion boards including, "The likelihood of taking future courses in this content area is."

### Student Connectedness

Student connectedness was measured using a 25 question, 5-point Likert scale from 1 (*strongly disagree)* to 5 (*strongly agree)*. Bolliger and Inan (2012) created an Online Student Connectedness Scale (OSCS) consisting of four subscales including community, comfort, facilitation, and interaction and collaboration. The scale was formed to measure the effectiveness

of teaching strategies aimed at fostering students' feelings of connection in the online classroom. The present study utilized the OSCS modified specific to discussion boards in the online classroom. To measure comfort, statements such as, "I feel comfortable asking other students in online courses for help via discussion boards" and "I feel comfortable in the discussion boards provided by my instructor" were used. Community was measured through statements such as, "My peers have gotten to know me quite well in my online courses through discussion boards" and "I can easily make acquaintances in my online courses through discussion boards." To measure facilitation, statements such as "In my online courses, instructors promote interaction between learners via discussion boards" and "My online instructors are responsive to my questions in discussion boards" were used. Lastly to measure collaboration, statements such as, "I relate my work to others' work through discussion boards in my online courses" and "I share information with other students in my online courses through discussion boards" were used. For the no discussion board condition, the statements were altered from any mention of discussion boards to "in this course." For example, "I feel comfortable expressing my opinions and feelings in this online course" and "In my online course, the instructor promotes interaction between learners." Two statements were removed which did not adjust to the non-discussion board questions well.

### Online Learning Climate

Online Learning Climate was measured using the OLCS created by Kaufmann et al. (2015) and adjusted for this study. This scale employed 11 questions, with response options from 1 (*strongly disagree)* to 5 (*strongly agree*). The OLCS was created on the assumptions that online classroom climate can be examined through instructor behaviors, student characteristics, and the course design and structure. This scale focused on classroom climate being composed of

a feeling of comfort and connection between students and the instructor (Kaufmann et al., 2015).

This portion was broken into sections of instructor behaviors, student characteristics and

behaviors, and course-specific structural issues. The original scale had 42 items, but only ones

relevant to this study and which could be altered to be discussion board specific were used. To

measure instructor behaviors, the base statement, "Based on my online class interactions with the

instructor via asynchronous discussion boards, I perceive my instructor" was provided with six

responses participants rated on the five-point Likert scale. Examples of these included "as

understanding," "as engaged in the course," and "as supportive." To measure student

characteristics, the base statement used was, "Based on my experiences with and perceptions of

this online course," and participants responded to three prompts including "The design of this

course encouraged student interaction with students," "The technology used in this course

fostered collaboration among students," and "This online course provided ample opportunities

for communication among students." Lastly, to measure course-specific feelings, the base

statement used was, "Based on my experiences with and perceptions of this online course," and

the two prompts were, "The organization of this course was clear," and "The instructions for

assignments were clear." These were used for the two discussion boards conditions, and for the

no discussion board condition the words asynchronous discussion boards were removed. All

other wording remained the same.

**Data Analysis**

A MANOVA was calculated to address RQs one, three, four, five, and six because the

dependent variables were significantly correlated. The study's independent variable was the use

of discussion boards with three categories including discussion boards were not used, discussion

boards were required and graded, and discussion boards were optional and not graded. The

dependent variables were instructor mediated immediacy, student motivation, student affective learning, student connectedness, and online learning climate. A thematic analysis of a qualitative, open-ended questionnaire was used to identify themes of what motivates students to actively participate in online discussion boards for RQ2. This was based on their real-life experience with an online course which utilized an asynchronous discussion board.

CHAPTER III: RESULTS

**Quantitative Results**

All dependent variables were statistically significantly correlated, so a MANOVA was conducted to keep statistical error below .05. Box's test of equality of covariance matrices (Box's M = 44.10) did not violate the assumption: $F(30, 16285.65) = 1.32$, $p = .112$, so Wilks' Lambda was used. The Wilks' Lambda showed significant differences between the three independent variable groups: $\lambda = .762$, $F(2, 72) = 1.98$, $p = .04$, multivariate partial $\eta^2 = .127$. To answer RQ1, RQ3, RQ4, RQ5, and RQ6, univariate ANOVA results were analyzed using $p = .05$.

For RQ3 regarding if the presence of discussion boards and whether they are graded affects student motivation in an online course, statistically significant differences were found between groups relating to the dependent variable of student motivation: $F(2, 1962.53) = 4.94$, $p = .01$, $\eta^2 = .121$. Differences occurred between the discussion boards optional condition ($M = 70.75$, $SD = 20.72$) and both the no discussion boards condition ($M = 87.38$, $SD = 20.12$) and the required, graded discussion boards condition ($M = 84.72$, $SD = 18.96$) for motivation. There was no significant difference between the group with no discussion boards and the group with graded, required discussion boards. There were no significant differences between the independent variable groups relating to the four other dependent variables of instructor mediated immediacy, student affective learning, student connectedness, or online learning climate (see Table 1).

Table 1

*Descriptive Statistics for Statistically Insignificant Dependent Variables*

| Measure | No Discussion Boards | | Graded, Required Discussion Boards | | Optional, Not Graded Discussion Boards | | $F$ | $\eta^2$ |
|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *M* | *SD* | | |
| Mediated Immediacy | 50.19 | 10.15 | 51.04 | 15.51 | 49.08 | 9.70 | .161 | .004 |
| Affective Learning | 40.81 | 10.68 | 39.00 | 12.57 | 35.75 | 10.59 | 1.271 | .034 |
| Student Connectedness | 72.19 | 19.92 | 71.20 | 18.60 | 73.83 | 21.16 | .109 | .003 |
| Online Learning Climate | 42.92 | 8.24 | 41.84 | 8.77 | 41.67 | 7.88 | .170 | .005 |

**Qualitative Results**

RQ1, RQ4, RQ5, and RQ6 had no statistically significant findings and were analyzed

using only the open-ended responses to students' experiences in an actual online course with

asynchronous discussion boards. A thematic analysis was conducted on all open-ended questions

to check for themes surrounding each of the dependent variables.

**Mediated Immediacy**

Research question one regarding whether the presence of discussion boards and whether

they were graded affected perceptions of instruction mediated immediacy in online courses had

no statistically significant findings in the quantitative results. One question in the qualitative,

open-ended questions pertained to instructor mediated immediacy which was, "Do you feel

participating in discussion boards brings you closer to your instructor? Why or why not?" One

emerging theme was students felt the discussion boards only brought them closer to their

instructor if their instructor was actively participating in them beyond leaving small comments occasionally. Overwhelmingly, participants noted in their experience in discussion boards the instructor rarely, if ever, participated in the discussion which reveals mediated immediacy was rarely, if ever, conveyed through discussion boards. One participant stated, "I've never taken a class where the instructor actually participates in the discussion boards or gives feedback about our posts in the discussion boards." Another stated, "I don't think that discussion boards make me feel closer to my instructor. I think they allow me another avenue to showcase what I have learned, but they don't necessarily facilitate the ability to develop a relationship."

Some students did state they felt the discussion boards brought them closer to the instructor, but these responses were typically detailing how the students felt it allowed their instructor to get to know the student more. For example, one participant noted, "Yes because through your response they can get to know you at least a little bit," and another stated, "I think participation in discussion boards also make you closer to your instructor because they will know how you feel about certain topics." Participants commonly stated they felt discussion boards helped the instructor assess their understanding of the content or see how actively they were participating in the course. Responses were like the following, "I think it can display what I am learning to my professor and where my brain is, and it can allow them to respond accordingly. However, the discussion feels very one way, so no, it does not bring me closer." For RQ1, the presence of discussion boards and whether they were graded had no positive impact on students' perceptions of instructor mediated immediacy.

**Student Motivation**

Regarding RQ2 which sought to understand what factors motivate students to participate in discussion boards, participants were asked a variety of questions including if they would

participate in discussion boards regardless if they were required, what factors motivate them to participate, and why they do or do not participate in discussion boards. When asked if participants would participate in discussion boards regardless of if they were required, most participants stated no (56.8%) followed by yes (29.7%) and the remaining chose other (13.5%). Discussion boards being graded or for extra credit points were noted as a motivating factor for participating in discussion boards for 78.4% of participants. Some students specified the grade motivated them to participate in the discussion board itself but not the course. One person noted, "I only participated in discussion boards when they were required as part of my grade. Otherwise, I found the discussion boards to be mostly tedious and unhelpful, so I did not complete them if they were not part of my grade."

Less than 10 participants stated interesting topics or wanting to understand more about the content as a motivating factor for participating including comments such as, "Of course being graded is compelling motivation, but having in-depth conversations on a discussion board is the point of the platform and can be enjoyable." One theme was the format of the discussion board not motivating students. One participant stated, "I would be motivated to participate in discussion boards if it was graded because I would not want my grade to drop in the class. However, I would still not enjoy participating in them because people just regurgitate the same thing that someone else has said multiple times and it's a waste of time." Participants were also asked why they do or do not participate in discussion boards. Again, they stated they would participate only if it were required or for a grade. Some noted, "It feels like busy work," and "I'm not trying to do extra work that doesn't count [for points]." This also revealed some participants used discussion boards as means to showing their instructor they were actively participating or understood the material. One participant stated, "I participate because I want to

prove to my professor that I'm engaged in the material." Another said, "I wanted my instructor to perceive me as a student who tried in school." However, a large theme which emerged regarding motivation was grades, extra credit, or because it was required for the course. Regarding RQ2, the presence of discussion boards only motivated students if they were graded or were not present at all.

**Student Affective Learning**

While no significant findings were found in the quantitative results regarding RQ4 of whether the presence of discussion boards in the online class and if they were graded affected students affect toward the course, the open-ended questions regarding why students participate in discussion boards revealed themes. RQ4 focused on students' affect toward the course itself. Participants felt neutral, disagreed, or strongly disagreed (59.5%) discussion boards in their course did not help their learning or understanding of content. Only 40.5% of participants agreed or strongly agreed discussion boards helped their understanding of content in the course. One theme was discussion boards making participants feel dissatisfaction toward the course with one participant stating, "It feels like a waste of time and not helpful to my actual learning." One person noted, "I just do the bare minimum [on discussion boards] to get a decent grade and make a mental note to not take a class with the same professor again. Graded discussion boards are something I associate the more with pointless busy work." Participants did not indicate any positive impact of discussion boards on their affect for the course. Some participants noted they would not take a course like this again because of the discussion boards. It appears discussion boards did not increase their affect for the course nor helped students understand content better. A less common theme was participants indicating discussion boards helped them feel more engaged in the course as a whole, and they enjoyed sharing their ideas and hearing their

classmates' opinions. However, few other themes regarding affect toward the course emerged. To answer RQ4, the presence of discussion boards and whether they were graded did not increase students' affect for the course.

### Student Connectedness

There were no statistically significant results for differences between groups regarding student connectedness. However, themes emerged to answer RQ5 of whether the presence of discussion boards and if they were graded affected feelings of student connectedness to one another and/ or the instructor in the online course when participants were asked if they felt discussion boards brought them closer to their peers and their instructors. The most common theme found in student-to-student connectedness was they did not bring students closer to one another because students were primarily using them to get a grade and not aimed at connection as exemplified through responses such as, "I don't think it brings me closer to my peers because the responses are always 'I completely agree with what you said' and nothing else. There is no substance and I don't get to know the people in my class when participating in discussion boards." One participant stated, "I'm not getting to know them. I'm just seeing a hyper-polite 'professor viewing friendly' version of them with a text submission that's been edited a few times." Another example is, "I do not think so. None of us want to be writing in these discussion boards. We do it for the grade, and all of the interactions seem disingenuous."

Another theme was discussion boards helped students understand what each other were thinking and learning or their opinions on topics but did not bring them closer in a personal way. One participant noted, "It can help me see what my peers are thinking and learning, but it does not bring me closer to them personally." Others stated, "It gets to help you learn other people's opinions on topics," and "Most of the responses from my peers were from a reading, which

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meant there wasn't a lot of opinions included in the responses. I did not get a huge understanding of my peers' thoughts and feelings in life." Participants also commonly said the potential for connection was dependent on how many people were participating and the effort of the participation. For example, one person stated, "It depends on how much effort and thought my peers in question put into the discussion, but I get a general idea of who actually has something to say and wants a meaningful discussion." Another said, "If the right amount of people participate then it brings me closer."

When asked if they felt discussion boards brought them closer to their instructor, most participants did not feel discussion boards accomplished this. Only 27% of participants stated discussion boards brought them closer to their instructor. Of this 27%, none stated feeling closer to the instructor in any terms of getting to know their instructor more personally or on a deeper level. Their feelings of closeness were only through the instructor learning more about the students as displayed in comments such as, "I don't think that discussion boards make me feel closer to my instructor, I think they allow me another avenue to showcase what I have learned, but they don't necessarily facilitate the ability to develop a relationship." Others stated, "I do because maybe there have been some things my instructor may not know about me," and "It is a way for an instructor to understand how well the class is understanding the topic." As demonstrated in these responses, the feelings of closeness were more related to the instructor understanding the students view or grasp on the concepts and topics of the discussion board rather than them as individuals. It did not show the instructors conveying any personal messages or information to the students only receiving them from the students.

The largest theme here was discussion boards did not bring the student and instructor closer because instructors were not very involved in discussion boards. One participant stated, "I

think generally instructors don't participate in discussion boards as it's more of a student platform." Others stated, "No, because often times the instructor does not even participate in discussion boards or they barely even read the responses of students," and "Even though the instructor may respond to discussion board posts, it's not a strong relationship builder like in-person interaction is." Multiple participants noted the instructor did not actually interact with them in comments such as, "Not really because the instructor never responded in boards just made sure we completed them and then graded it," and "My instructor never directly responded to anyone." Thus, regarding RQ5, the presence of discussion boards did have a small impact on student-to-student connectedness, but it had little effect on student-instructor connectedness. Whether or not the discussion board was graded did not influence connection except where the instructor's feedback or response to the student was only through grading.

### Online Learning Climate

Lastly, RQ6 sought to understand if the presence of discussion boards in the online classroom and whether they were graded attributed to online learning climate. Though discussion boards were found to not impact instructor immediacy, affective learning, or student connectedness in positive ways, through open-ended answers some themes emerged pertaining to online learning climate. First, though participants did not commonly feel they were a good source for becoming closer to one another, some did note it was an outlet for communicating with one another and the instructor. For example, one participant stated, "I participate because I love to share my ideas on whatever topic my instructor posts under discussion boards. I also like it when my colleagues pose challenging questions." Another said, "I feel they may give you a connection while the class is online and that is the closest you will get." However, this was not a common theme. Some felt the discussion boards did not help classroom climate because people

were not their true selves or were nervous to post. For example, "It's scary typing something up that everyone's going to read. You don't get the 1v1 with the professor and everyone can see your work." Another said, "It's almost like social media where you only see what people want you to see about themselves." Some participants noted feelings of support or positive feedback from other students and their instructors, but these responses were not common. To answer RQ6, the presence of discussion boards attributed to online learning climate in small ways for few participants, but whether they were graded had no impact.

CHAPTER IV: DISCUSSION

In this present study, discussion boards were examined to determine their relationship with instructor mediated immediacy, student motivation, student affective learning, student connectedness, and online learning climate using both quantitative and qualitative questionnaires and responses were analyzed using a multivariate ANOVA and thematic analysis. Interesting themes regarding the influence of discussion boards in the online classroom emerged which may compete with some current research surrounding discussion boards. The univariate ANOVA analysis revealed statistically significant findings for only RQ3 regarding student motivation. However, the thematic analysis of open-ended responses found themes which revealed significant themes for RQ1, RQ2, RQ4, RQ5, and RQ6. Though statistically insignificant results are not what researchers aim for, the insignificance of these variables in this study have significant implications for educators.

**Summary of Findings**

**Instructor Mediated Immediacy**

Reducing physical and psychological distance between students and instructors is the goal of immediacy cues (Mehrabian, 1966). Moving from the in-person classroom online makes conveying immediacy harder simply by the physical distance and lack of face-to-face communication. RQ1 aimed to understand if the presence of discussion boards and whether they were graded affected perceptions of instructor mediated immediacy in the online classroom. The quantitative results were statistically insignificant which signifies discussion boards did not increase student perceptions of instructor mediated immediacy. The use of discussion boards did not increase feelings of closeness with the instructor, and this was supported through the open-ended responses. Researchers again and again have found the instructor plays a crucial role in the

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online classroom as a facilitator for discussions (Kucuk, 2009), course designer (Martin et al., 2018), motivator for students (Ahn et al., 2018), and encourager for students to be responsible for their learning (Comer & Lenaghan, 2012). Research about discussion boards in the online classroom echoes the need for the instructor to play a large role in the discussions through monitoring conversations and facilitating productive discussions (Journell, 2008). However, this study revealed instructors were not participating in discussion boards. Participants had little interaction with their instructor on discussion boards and felt the discussion boards would only bring them closer to their instructor if the instructor actively participated. They often felt their instructor only checked for participation and left few comments, and the comments did not lead to personal conversations or connections. When participants did feel the discussion boards brought them closer to their instructor, it was not in terms of the psychological or physical closeness which composes immediacy.

Participants who felt discussion boards brought them closer to their instructor felt it was because their instructor understood their understanding of content or feelings about the topics through the discussion but rarely stated their instructor got to know them more on a personal level. No participants felt discussion boards brought them closer to instructors through any immediacy cues this study examined such as indicating availability to students, sharing personal anecdotes, or frequent communication (O'Sullivan et al., 2004). While research is clearly indicating the importance of the instructor's role in the online classroom and the positive impacts mediated immediacy can have on students, instructors are not actually participating in discussion boards. It makes sense the findings were statistically insignificant as participants did not feel instructors played a big role in discussion boards beyond grading them and providing minor feedback. In this way, the insignificant statistical findings were impactful. Regarding RQ1 and

instructor mediated immediacy, discussion boards did not affect students' perceptions of instructor mediated immediacy. Student motivation, however, was statistically significant.

**Student Motivation**

Student motivation in relation to discussion boards was examined through RQ2 and RQ3. RQ2 sought to identify what factors motivated students to participate in discussion boards and was examined through open-ended questions and responses. Grades or required participation were the clear, leading reasons students participated in discussion boards. Most participants (56.8%) would not participate in discussion boards if they were not required, and over 75% of participants stated they participate in them solely for a grade or extra credit. It was clear participation in discussion boards was driven by a requirement and not a want to connect with other students or to further understanding of content. Using SDT (Deci & Ryan, 2000), this motivation can be identified as external motivation where the requirement or grade was the driving factor. In fact, often the format of the discussion board was a deterring factor for participants. In line with mediated immediacy results, participants felt the discussion boards provided them little opportunity to personally connect with their instructor, and the conversations were often the same ideas and thoughts reworded and not productive.

Delaney et al. (2018) found educational settings with low instructor moderation require a thoughtful set up of discussion boards with highly relevant prompts and prepared assessment methods to create a stimulating interaction and increase student motivation. The present study revealed in participants' experiences with discussion boards their instructor rarely participated, and they were generally unhappy with the setup of them. This supports Delaney et al.'s (2018) finding that low instructor participation without a carefully designed discussion board will lead to low student motivation to participate. Additionally, state motivation, an attitude towards a

specific class (Christophel, 1990) can be influenced by the instructor, so because the participants indicated low instructor participation (Christophel & Gorham, 1995), it can be concluded there was little effect on state motivation. Phrases such as "busy work" and "extra work" were used to describe discussion boards which were not for a grade. Student engagement has been shown to increase student motivation to learn and to participate (Martin et al., 2018), so if students only engage to gain points and view the discussion board as busy work, it can be assumed they are not engaged which also agrees with the low motivation results found here. Findings from this study support claims that the motivating factor for participating in discussion boards was grades or extra credit, and this was reiterated in the quantitative results for student motivation.

RQ3 asked if the presence of discussion boards and if they were graded affected student motivation in the online course. Student motivation in RQ3 was the only statistically significant result from the quantitative questions. The results revealed differences between the independent variable group with no discussion boards and those with optional, non-graded discussion boards and between the group with required, graded discussion boards and those with optional, non-graded discussion boards. Echoing the themes found in the open-ended responses for motivation, participants also were motivated by discussion boards here only if they were graded or not offered. Having an optional, not-graded discussion board made no impact on student's motivation in the course. This may mean for discussion boards to motivate students the most they must be graded and required or not offered at all. The open-ended results also aligned with these results as participants did not feel discussion boards helped motivate them in the course unless it was to receive points towards their overall grade. Outside of grades, they were only motivated to show their instructor their understanding of content or proof of participation, but

otherwise, they had little effect on student's motivation in the course. Discussion boards also had low impact on student's affect for the course.

### Student Affective Learning

Students' affect toward the course was examined through RQ4. Among all variables, affective learning had the least notable results. Affective learning is an individual's positive feelings toward a course, instructor, or course material (Thweatt & Wrench, 2015), and there was little evidence of discussion boards contributing positive feelings toward the course found in this study. One emerging theme was a disliking of the course because of the use of discussion boards. Discussion boards have been praised as a way to connect students, create a climate online, and increase students' liking of the course (Cox & Cox, 2008; Evans et al., 2019; Vitale, 2010), but this study revealed the opposite. Participants felt discussion boards were a "waste of time" and were something they merely participated in because it was required. McCroskey (1994) found in their research on affective learning students should have a heightened affect toward their course when they value the content, the behaviors done in the course, and appreciate the faculty who teach the course. The results of this study however showed participants had less affect toward the course because of the use of discussion boards. These qualitative findings are consistent with the statistically insignificant results for affective learning. It connects if there is no statistical significance between discussion boards and any of the three independent variable groups, then participant open-ended responses would reflect negative feelings toward discussion boards and courses which use them. While RQ4 had statistically insignificant findings, the open-ended responses mirrored these and had significant themes of discussion boards creating a dislike for the course. The presence of discussion boards had negative impact on student affective learning but them being graded or not was not a factor.

**Student Connectedness**

Student connectedness was examined in RQ5 to see if discussion boards and whether they were graded affected student feelings of connectedness to fellow students and the instructor. As with immediacy and affective learning, though there were no statically significant results, there were significant themes which aligned with the lack of statistical significance for student connectedness in relation to discussion boards. The first portion of RQ5 looked at student to student connection through discussion boards. In line with findings for all other variables, participants did not feel discussion boards brought them closer to other students because they were using them to complete a requirement or get a grade, not to create a personal connection. While research on student-student connection can create emotional support and reduce anxiety for students (Aloia, 2020), this connection was not created via discussion boards based on participant perceptions. They viewed the interactions as surface-level and pertaining to coursework but not anything personal. Participants did find the discussion boards helped them better understand what others were thinking and their opinions on content and questions, but again, it did not bring them closer on a personal level. The connection was not a deep or personal one. However, this also was dependent on how others were participating, and it was commonly noted students in discussion boards were not diving deep into conversations and completing the bare minimum to get the grade. Farrell et al. (2018) found connectedness was achieved in the classroom when students were able to complete task roles and meet their interpersonal needs. Ideally, discussion boards should fulfill the role of the in-person discussions and create interpersonal connections, but these results supported the opposite. While student to student connection has large impacts, the instructor has been proven to have a big role in student

learning in both the online and in-person classroom, so student-instructor connectedness was also examined.

Russo and Benson (2005) found students' connection with one another was more strongly related to student satisfaction and attitudes about a course than students' connection with the instructor indicating student to student connect has a larger impact in the online classroom. While student to student connection was not impacted by discussion boards, an emerging theme regarding instructor to student connection regarding discussion boards was discussion boards were perceived as a space for students which the instructor did not participate in. Researchers have found students feel more connected to their instructors when they have positive and supportive interactions in their online classes (LaBarbera, 2013), but interestingly few participants in this study had experience with discussion boards where their instructors were involved. Discussion boards had little impact on the student-instructor connection because instructors were not using the discussion boards. In the instances they were using them, the connection was surface-level and minimum.

Participants who did feel discussion boards brought them closer to their instructor referred to closeness in terms of how much their instructor learned about them. They felt the discussion boards helped their instructor understand more about them and showcased their knowledge of the course, but no mention of feeling close on a personal level were made. This finding supports previous research revealing connection is made through more intimate communication such as personal stories, self-disclosures, and deeper conversations (Sollitto et al., 2013). Closeness in this study was perceived by participants simply as the other party (their instructor) knowing more information about them typically related to academics. To answer RQ5, the presence of discussion boards provided a place for participants to have communication

with their peers and instructor, but the instructor rarely participated. The communication with their peers was not on a personal level and did not increase feelings of connection. The discussion boards being graded had no impact on connectedness outside of participants stating there were no connections formed because people were only participating for the grade. This lack of connection led to low perceptions of an online learning climate.

### Online Learning Climate

Finally, RQ6 looked at if the presence of discussion boards in the online classroom and if they were graded attributed to the online learning climate. This study used Dwyer et al.'s (2004) definition of classroom climate which is constituted of the perceived connection, rapport, and affinity between the instructor and students. Support through social interaction, consistent communication, and feedback adds to a positive classroom climate (Lee et al., 2019). All of these can be derived from instructor mediated immediacy, student affective learning, and student connectedness, so it logically follows online learning climate also had no statistically significant findings in relation to discussion boards but had significant themes from the open-ended responses. Participants did not feel discussion boards attributed to the overall online learning climate though they did note it was a space for them to communicate with other students and the instructor even if this was not building personal relationships. In addition to the lack of perceived instructor mediated immediacy, student affective learning, and connectedness which all contribute to lowered feelings of online learning climate, participants felt people were generally not their true selves and either portrayed themselves in the best light through their responses or were scared to participate because of everyone being able to view and scrutinize it. The discussion boards being graded actually created less community by forcing people to participate and creating insincere responses and conversations.

In terms of the Community of Inquiry framework which states learning occurs within a community through cognitive, social, and teaching presence (Garrison et al., 1999), these results showed a clear lack of the social and teaching presences. There was some evidence of discussion boards helping with cognitive learning, but little proof of them helping instructors' mediated immediacy cues, students liking of the course, or to build connection between students and with the instructor. Supportiveness is one of the most common components of a connected classroom climate (Lee at al., 2019), and this was also lacking in all areas. Again, the insignificant statistical findings echoed by the themes in the open-ended questions revealed a significant finding to answer RQ6. The presence discussion boards in this study did not attribute to the online learning climate, and them being graded affected it in a negative way as participants saw it as checking off a requirement rather than using it to build connections and community.

**Implications**

Many best practice tips for teaching online list discussion boards as an effective way for creating connection between students and with the instructor, increasing affect toward the course, and helping to create a classroom climate online. However, as this research is examined further, it is crucial to make a distinction between the utility of discussion boards to convey immediacy, motivate students, create connections, increase affect, and online learning climate and their ability to help with cognitive skills such knowledge. Aloni and Harrington (2018) found the use of discussion boards in the online classroom or as supplement to the in-person classroom increased students' abilities to think critically and improved writing skills. Lo et al. (2011) found student satisfaction to be linked to discussion boards, but this was when discussion boards were used with online assignments, not as the sole means of communication. This study is not contending the idea discussion boards have utility in the online classroom. However, too often

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the proof of increase in cognitive skills is mistaken for influencing student motivation, connection to each other and the instructor, liking of the course, and creating classroom climate, and cognitive learning alone does not increase these factors (Garrison et al., 1999). Over relying on cognitive learning as the assessment for student learning prevents researchers and educators from getting a full view of student learning (Gaffney & Dannels, 2015). Fully engaging in the learning process requires more than knowledge acquisition and requires student to student and student to instructor connection (Mandernach et al., 2018). This study revealed discussion boards do not positively influence these factors which are crucial to a student's success and learning in a course. One issue may be the threaded discussion board, which is the most commonly used type, is not creating productive discussions (Gao et al., 2012).

To be productive, online, asynchronous discussions should foster discussions that push students to partake in higher order thinking with collaborative discussions (Gao et al., 2009). Participant responses revealed the conversations happening in discussion boards were not requiring higher order thinking and were surface level. Instructors may face difficulty creating these types of discussions in the online context because characteristics of productive discussions have not always been made clear. Gao et al. stated productive discussions should require learners to do one of four things including discussing to comprehend, discussing to critique, discussing to construct knowledge, and discussing to share improved understanding. Unfortunately, it can be hard to create and maintain productive, interactive discussions using a traditional threaded discussion forum. These types of forums typically only focus on students answering questions easily found in readings and giving surface level responses to other students (Gao et al., 2012), and this was clearly proven with the results of this study. This study supported past research findings that the threaded discussion board is not effective at conveying instructor mediated

immediacy, increasing student motivation, affect for the course, connection to one another and the instructor, or creating an online learning environment. It also provided insight to student perceptions of discussion boards.

Christophel (1990) linked instructor immediacy to student motivation, affective learning, and connectedness in the in-person classroom. Many researchers went on to support this connection and carried it into the online classroom. Kaufmann et al. (2015) linked these four constructs together in creating the online learning climate. This study supported the relationship between these constructs. The statistical insignificance of the relationship between discussion boards and instructor mediated immediacy, student affective learning, student connectedness, and online learning climate revealed significant themes when paired with the open-ended responses. If these variables have great influence on one another, it logically connects they will all have similar findings even if those findings are statistically insignificant. Instructor mediated immediacy has been proven to lead to greater student learning and increased motivation (Kucuk, 2009), so when mediated immediacy is lacking, student motivation and all other variables are also lacking. Though student motivation was found to be statistically significantly related to discussion board use, it was not for any motivating factors typically linked to the other variables (Christophel & Gorham, 1995) and was only because of requirements or grades. The social component and sense of community within a course increase intrinsic motivations for learning and participation in a course (Delaney et al., 2018), but the findings of this study revealed discussion boards did not contribute to an online learning community or connection to instructors and students, so it makes sense motivation was also only associated with grade and not connection, mediated immediacy, affect, or classroom climate.

If any of the variables would have been statistically significant or showed contradicting themes to one another, it would lower the credibility of these findings. The similar themes and results supported these variables are truly linked to one another. A wrong assumption in the past was offering online learning environments leads to online learning (Hoskins & van Hooff, 2005), and it was shown here offering discussion boards as means for conveying immediacy, increasing student motivation, affective learning, connection, and online learning climate does not mean they are influencing these variables. Students liking or disliking of a course affects their perception of the online learning climate and ability to connect with other students and the instructor (Myers & Claus, 2012), and this study revealed discussion boards did not increase students' affect for the course, connection, and did not increase perceptions of an online learning environment. This raises the question of what are the practical take aways from this study.

**Practical Implications**

Discussion boards have potential to positively influence student learning and provide a space for students and instructors to connect. However, these benefits can only be achieved if they are facilitated properly, and this study provides practical implications for instructors. Instructors need to first evaluate the reason they are using the discussion boards. If they are using them to increase students' understanding of course material and interaction among students, they can utilize constrained environments which Gao (2014) defines as pre-structured forms of discussion environments assisting students in guiding their participation in specific ways to foster the most productive, interactive discussions. Gao et al. (2009) proposed a productive discussion model which outlines four strategies for guiding students' participation in discussion boards. These strategies include utilizing prompts and instructions for how students are to participate by instructing them to either elaborate and clarify on course content or questions,

make connections between the topic at hand and other material, challenge other's views by suggesting other perspectives, and build on each other's views by further developing their perspective. Gao (2014) added a fifth strategy of proposing new questions to further the discussion. One-way instructors can guide students to participate in the above strategies is through scaffolding.

When used properly, scaffolding can help guide students through a productive discussion they may have not had without it. Scaffolding is the "temporary support provided for the completion of a task that learners otherwise might not be able to complete," and can be done through various means including modeling skills and posing new questions (van de Pol et al., 2010, p. 272). This form of assistance is learner-centered and interactive in nature. Scaffolding entails teachers' support or contingency, which varies depending on the student, fading or the withdrawal of help slowly, and transfer of responsibility which puts the student in charge of their learning (van de Pol et al., 2012). Scaffolding is not specifically created for discussion boards, but it can be a helpful technique. Giacumo et al. (2012) argue it is a useful skill to be employed by instructors in the facilitation of discussion boards. This can be done in discussion boards in the form of soft scaffolding or instructor facilitation response prompts detailing exactly how students are to participate and responses from instructors (Giacumo et al., 2012). Students can be directed to post original examples which are based on personal experience the student has had relating to this course concept and providing value added comments to other respondents and enhancing the discussion and post in some way (Comer & Lenaghan, 2012). Giacumo et al. (2012) found in their study the use of soft scaffolding in discussion boards resulted in an increased breadth of contributions, higher quality writing among students, and an increase in complex thinking and quality of student entries. These strategies paired with Gao et al.'s (2009)

online productive discussion model are proposed as better alternatives to the traditional threaded discussion forum. In sum, there are better alternatives to the traditional threaded discussion forum to produce beneficial discussions. These strategies may help with student motivation, affective learning, and connectedness. One key thing here is the instructor being more involved in discussion boards which was found in this study to be something lacking.

If instructors can take one thing away from this study, it is instructors must increase their presence in discussion boards if they are looking to increase student perceptions of instructor mediated immediacy, connection with students, and online learning climate. Participants overwhelmingly noted their instructors were not active in their discussion boards, but it is clear the positive impact instructor immediacy and connection with students has on a student's experience in a course and attributes to the learning climate. In order to identify the best ways for instructors to participate in discussion boards, they must first begin participating beyond checking for students completing the requirements and small comments. Instructors should create and facilitate discussions and include themselves in it to better convey mediated immediacy cues and connect with students. This will then allow for future research to identify best practices for instructor's participation in discussion boards. It will also allow researchers to identify if and how instructor participation affects instructor mediated immediacy, student motivation, student connectedness, student affective learning, and online learning climate.

**Limitations**

This study was intended to be a starting place for future research on discussion boards in the online classroom, and while the findings had significant implications for instructors, it was not without limitations. Low and concentrated response rates, hypothetical scenarios, and scale creation were three limitations. First, with the amount of independent variable groups and

dependent variables, the study aimed to get around 120 responses. Only 90 responses were gathered, and though the results did reach saturation and easily identifiable themes, the findings could be stronger with more responses. While participants were not asked to identify which school they attended, the study produced 78 responses from within the midwestern university which had the research board it was posted on. Even though the participants likely all participated in discussion boards in different courses, they were primarily from the same school and could have had influence from the overall university. Additionally, the survey was long with over 60 questions, and many participants stopped taking it after completing only part of the survey. The study could be stronger if participants were pooled from more universities to be more reflective of student experiences with online courses and asynchronous discussion boards.

Participants were given hypothetical course descriptions used to answer the quantitative, closed-ended questions. They were then asked to reflect on a course they had taken for the qualitative, open-ended questions. Participant responses for the closed-ended responses had the potential to be skewed by thinking about their personal experiences rather than their hypothetical scenarios. The hypothetical scenarios also posed issues with the five surveys. The five surveys were modified versions of psychometrically sound scales and were modified slightly to meet criteria for discussion boards. The questions then had to be modified for the independent variable condition with no discussion boards to remove verbiage of discussion boards. With this, some questions had to be eliminated in the final analysis that did not have a matching item. This ultimately led to the removal of one research question regarding students affect toward their instructor. This could have been avoided by reworking the scenarios and questionnaires to allow all participants to answer the same exact questions. The study could be stronger by asking participants to describe the type of course or discussion board use in their class and asking them

to then answer the closed- and open-ended questions. Future research can take these limitations into consideration when creating future studies.

**Future Directions**

This study provides many opportunities to guide future research. First, this calls into question the amount of times discussion boards are being recommended as a best practice for online teaching, them being praised as ways for students to connect to one another and their instructor, and a way to create community in the online classroom. The idea for this study came from the researcher experiencing discussion boards, hearing other students and instructors complain about them, and being an instructor seeing advice to use discussion boards in the online classroom as means of fulfilling the in-person discussions which are lacking online. Saying discussion boards have the potential to create community and connection and are a place for the instructor to convey immediacy with students is much different than achieving these things. Additionally, because discussion boards are seemingly the only option for discussion in asynchronous online courses, it does not mean they are the best option or being utilized in the most effective ways. Future research should further examine different types of discussion boards as one key implication of this study was the threaded discussion forum method is not effective at influencing the five studied variables. This study could be replicated using a different format of pre-structured discussion boards assessed with the productive discussion standards created by Gao (2014). Results from this would reveal if another form of discussion board could positively impact instructor mediated immediacy, student motivation, affective learning, connectedness, and the online learning climate. Additionally, future research should examine if such items are feasible to reach in the online classroom and student perceptions coming into an online course.

Months were spent on this study researching discussion boards and how they affect different classroom variables which have been supported to impact student learning in the classroom both in-person and online. This is outside of the countless other researchers who examined different aspects of the online classroom, discussion boards, and ways of creating in-person like outcomes online. However, a large question which remains unanswered is: Are students expecting the in-person experience online? Are students who willingly register for an online, asynchronous course expecting to connect with their instructor and fellow students and a climate like that of an in-person class? Are the efforts of discussion boards at fault from the start because students do not expect nor want these factors online? These are all questions which can guide future research as a step back is taken to examine online courses as a whole. Before further time and effort is put in examining how to best operate an online course to reach similar in-person outcomes, researchers first need to examine what students are expecting from online courses from a stance of voluntarily taking asynchronous courses where they understand the "at your own pace" style with no meetings compared to if they are involuntarily taking courses with provide no opportunity for discussion and connection. Research in this area could greatly impact and guide future course creation and online teaching and learning research.

These findings are not calling for a wholesale abolishment of discussion boards in the online classroom. However, they did reveal discussion boards are not helping convey instructor mediated immediacy, increasing student affective learning, connectedness, or the online learning environment. They only influenced student motivation if they were required or graded. These results rather call for researchers and instructors to re-examine the motives behind utilizing discussion boards. If instructors only want students to receive information and cognitively understand content better, threaded discussion boards may still be a useful tool. However, if the

reasoning for using discussion boards in the online classroom continues to be to give students a place to connect, a way for the instructor to become close to students, and to create an online learning climate, instructors need to rethink how they are using the discussion boards and stray from the traditional, threaded discussion boards which were not shown to be effective at achieving those variables.

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**Instructions:**
Please read the course description. Then, please answer the following questions as if you are taking the course in the description. Use this course to answer the following questions about discussion boards and your feelings about the course. While answering the questions, answer in reference to this specific course not all courses with discussion boards in general.

**Course Description One: Course with No Discussion Boards**
This course will be completely asynchronous, online with no in-person or synchronous, online meetings or online video lectures. Asynchronous means this will not be taking place at the same time or face to face online or in person. Participation in this course is based on you completing course work on time as assigned by your instructor. There will be no online discussion boards in this class and no live discussions either synchronous online or face to face in person. You will complete all work at your own pace. There will be no video lectures, only readings and following along with the assigned work.

**Course Description Two: Course with Graded Discussion Boards**
This course will be completely asynchronous, online with no in-person or synchronous, online meetings or online video lectures. Asynchronous means this will not be taking place at the same time or face to face online or in person. Participation and discussion in this course will occur through an online, asynchronous threaded discussion board between yourself, your peers, and the instructor. A question will be posted by the instructor, and students may post their response to the question and reply to other students' responses. Each question posted by the instructor will be in a different thread. There will also be a thread for students to post their own questions or comments. Your participation in the discussion boards is required and graded. You will be required to post your response to questions and reply to your classmates at your own time by the due date. An example of an asynchronous discussion boards can be seen below.

**Course Description Three: Course with Non-Graded Discussion Boards**
This course will be completely asynchronous, online with no in-person or synchronous, online meetings or online video lectures. Asynchronous means this will not be taking place at the same time or face to face online or in person. Participation and discussion in this course will occur through an online, asynchronous threaded discussion board between yourself, your peers, and the instructor. A question will be posted by the instructor, and students may post their response to the question and reply to other students' responses. Each question posted by the instructor will be in a different thread. There will also be a thread for students to post their own questions or comments. Your participation in the discussion boards is not required or graded but is encouraged. You may post questions or your response to questions and reply to your classmates at your own time. An example of an asynchronous discussion boards can be seen below.

# Asynchronous Discussion Board Example

*View of all discussion threads*



*View of one discussion thread with each student's response listed*



*View of one discussion thread with student's answer and other students' responses*

**Mediated Immediacy Scale:**

These items are concerned with how you feel about your instructor based on your interactions with them in your online discussion boards. Please select the number toward either word which best describes your feelings towards your instructor. In some cases, the most positive score is "1" while in other cases it is a "7".

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1. | Inviting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Uninviting |
| 2. | Disclosing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Non disclosing |
| 3. | Open | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Closed |
| 4. | Kind | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unkind |
| 5. | Distant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Close |
| 6. | Engaging | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Detached |
| 7. | Inaccessible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Accessible |
| 8. | Expressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Non expressive |
| 9. | Friendly | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unfriendly |
| 10. | Warm | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Cold |

**Mediated Immediacy Scale: (for NO Discussion Board prompt only)**

These items are concerned with how you feel about your instructor based on your interactions with them in your online course. Please select the number toward either word which best describes your feelings towards your instructor. In some cases, the most positive score is "1" while in other cases it is a "7".

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1. | Inviting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Uninviting |
| 2. | Disclosing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Non disclosing |
| 3. | Open | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Closed |
| 4. | Kind | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unkind |
| 5. | Distant | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Close |
| 6. | Engaging | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Detached |
| 7. | Inaccessible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Accessible |
| 8. | Expressive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Non expressive |
| 9. | Friendly | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unfriendly |
| 10. | Warm | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Cold |

**Student Motivation Scale**

Please circle the number for each item which best represents your feelings about this course in regard to discussion boards.

1. **My attitude about the content discussed in discussion boards is:**

   | | | | | | | | | |
   |---|---|---|---|---|---|---|---|---|
   | Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad |
   | Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable |
   | Unfair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fair |
   | Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative |

2. **My attitude about discussion board use in this course is:**

   | | | | | | | | | |
   |---|---|---|---|---|---|---|---|---|
   | Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad |
   | Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable |
   | Unfair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fair |
   | Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative |

3. **My likelihood of actually attempting to participate in discussion boards in this course is:**

   | | | | | | | | | |
   |---|---|---|---|---|---|---|---|---|
   | Likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unlikely |
   | Impossible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Possible |
   | Probably | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Improbably |
   | Would | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Would Not |

4. **My likelihood of actually enrolling in another course of related content using discussion boards, if I had the choice and my schedule permits: (If you are graduating, assume you would still be here.)**

   | | | | | | | | | |
   |---|---|---|---|---|---|---|---|---|
   | Likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unlikely |
   | Impossible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Possible |
   | Probably | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Improbably |
   | Would | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Would Not |

5. **My likelihood of taking another course with this instructor, if I had the choice, is: (If you are graduating, assume you would still be here.)**

   | | | | | | | | | |
   |---|---|---|---|---|---|---|---|---|
   | Likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unlikely |
   | Impossible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Possible |
   | Probably | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Improbably |
   | Would | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Would Not |

**Student Motivation Scale (for NO Discussion Board prompt only)**

Please circle the number for each item which best represents your feelings about this online course.

1. **My attitude about the content discussed in this course is:**

   | Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad |
   |------|---|---|---|---|---|---|---|-----|
   | Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable |
   | Unfair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fair |
   | Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative |

2. **My attitude about discussing material in this course is:**

   | Good | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Bad |
   |------|---|---|---|---|---|---|---|-----|
   | Worthless | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Valuable |
   | Unfair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fair |
   | Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative |

3. **My likelihood of actually attempting to participate in this course is:**

   | Likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unlikely |
   |--------|---|---|---|---|---|---|---|----------|
   | Impossible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Possible |
   | Probably | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Improbably |
   | Would | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Would Not |

4. **My likelihood of actually enrolling in another course of related content, if I had the choice and my schedule permits: (If you are graduating, assume you would still be here.)**

   | Likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unlikely |
   |--------|---|---|---|---|---|---|---|----------|
   | Impossible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Possible |
   | Probably | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Improbably |
   | Would | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Would Not |

5. **My likelihood of taking another course with this instructor, if I had the choice, is: (If you are graduating, assume you would still be here.)**

   | Likely | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Unlikely |
   |--------|---|---|---|---|---|---|---|----------|
   | Impossible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Possible |
   | Probably | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Improbably |
   | Would | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Would Not |

**Affective Learning Scale:**

Please evaluate this class by indicating the number on the scale that best represents your feelings about the discussion boards.

1. **I feel the use of discussion boards in the class is:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bad | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Good |
| Valuable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Worthless |
| Unfair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fair |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative |

2. **The likelihood of taking future courses in this content area using discussion boards is:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bad | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Good |
| Valuable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Worthless |
| Unfair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fair |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative |

3. 1. **I believe the ability for discussion boards in this course to help me better understand course content is:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bad | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Good |
| Valuable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Worthless |
| Unfair | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fair |
| Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative |

**Affective Learning Scale: (for NO Discussion Board prompt only)**

Please evaluate this class by indicating the number on the scale that best represents your feelings about this online course.

1.  **The likelihood of taking future courses in this content area is:**

    | Bad      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Good      |
    |----------|---|---|---|---|---|---|---|-----------|
    | Valuable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Worthless |
    | Unfair   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fair      |
    | Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative  |

2.  **I believe the ability for interactions with classmates and my instructor to help me better understand course content is:**

    | Bad      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Good      |
    |----------|---|---|---|---|---|---|---|-----------|
    | Valuable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Worthless |
    | Unfair   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fair      |
    | Positive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Negative  |

**Online Student Connectedness Scale:**

For the following, please indicate how you feel about the statements based on the following measures:

**Strongly Disagree     Disagree     Neutral     Agree     Strongly Agree**

1. If I need to, I will ask for help from my classmates in discussion boards.
2. I feel comfortable expressing my opinions and feelings on discussion boards in this online course.
3. I feel comfortable introducing myself in this online course through discussion boards.
4. I can effectively communicate in this online course through discussion boards.
5. I feel comfortable asking other students in this online course for help via discussion boards.
6. I have no difficulties with expressing my thoughts on discussion boards in my online course.
7. I feel my instructor has created a safe online environment within discussion boards in which I can freely express myself.
8. I feel comfortable in the discussion boards provided by my instructor.
9. I feel emotionally attached to other students in my online course because of discussion boards.
10. I spend a lot of time with my online course peers in discussion boards.
11. My peers have gotten to know me quite well in my online course through discussion boards.
12. I feel that students in my online course depend on me.
13.  I can easily make acquaintances in my online course through discussion boards.
14. I have gotten to know some of the faculty members and classmates well through discussion boards.
15. Instructors integrate collaboration tools (e.g., chat rooms, wikis, and group areas) into this online course's activities through discussion boards.
16. In my online course, the instructor promotes interaction between learners via discussion boards.
17. My instructor promotes collaboration between students in my online course through discussion boards.
18. My online instructor is responsive to my questions in discussion boards.
19. I receive frequent feedback from my online instructor in discussion boards.
20. My instructor participates in online discussions in discussion boards.
21. I relate my work to others' work through discussion boards in my online course.
22. I discuss my ideas with other students in my online course though discussion boards.
23. I collaborate with other students in my online course through discussion boards.
24. I work with others in my online course using discussion boards.
25. I share information with other students in my online course through discussion boards.

**Online Student Connectedness Scale: (for NO Discussion Board prompt only)**

For the following, please indicate how you feel about the statements based on the following measures:

**Strongly Disagree      Disagree          Neutral          Agree          Strongly Agree**

1. If I need to, I will ask for help from my classmates in this course.
2. I feel comfortable expressing my opinions and feelings in this online course.
3. I can effectively communicate in this online course.
4. I feel comfortable asking other students in this online course for help.
5. I have no difficulties with expressing my thoughts in my online course.
6. I feel my instructor has created a safe online environment in which I can freely express myself.
7. I feel emotionally attached to other students in my online course.
8. I spend a lot of time with my online course peers.
9. My peers have gotten to know me quite well in my online course.
10. I feel that students in my online course depend on me.
11. I can easily make acquaintances in my online course.
12. I have gotten to know some of the faculty members and classmates well.
13. Instructors integrate collaboration tools (e.g., chat rooms, wikis, and group areas) into this online course's activities.
14. In my online course, the instructor promotes interaction between learners.
15. My instructor promotes collaboration between students in my online course.
16. My online instructor is responsive to my questions.
17. I receive frequent feedback from my online instructor.
18. My instructor participates in online discussions.
19. I relate my work to others' work in my online course.
20. I discuss my ideas with other students in my online course.
21. I collaborate with other students in my online course.
22. I work with others in my online course.
23. I share information with other students in my online course.

**Online Learning Climate Scale**

For the following, please indicate how you feel about the statements based on the following measures:

**Strongly Disagree**     **Disagree**     **Neutral**     **Agree**     **Strongly Agree**

*Based on my online class interactions with my instructor via asynchronous discussion boards, I perceived my instructor:*

1. As understanding.
2. As respectful toward me.
3. As supportive.
4. As responsive (e.g. provides feedback).
5. As engaged in the course.
6. As approachable (e.g. as someone I would email or visit virtually).

*Based on my experiences with and perceptions of this online course:*

7. The design of this course encouraged student interaction with students.
8. The technology used in this course fostered collaboration among students.
9. This online course provided ample opportunities for communication among students.

*Based on my experiences with and perceptions of this online course:*

10. The organization of the course was clear/
11. The instructions for assignments were clear.

**Online Learning Climate Scale (for NO Discussion Board prompt only)**

For the following, please indicate how you feel about the statements based on the following measures:

**Strongly Disagree        Disagree        Neutral        Agree        Strongly Agree**

*Based on my online class interactions with my instructor, I perceived my instructor:*

1.  As understanding.
2.  As respectful toward me.
3.  As supportive.
4.  As responsive (e.g. provides feedback).
5.  As engaged in the course.
6.  As approachable (e.g. as someone I would email or visit virtually).

*Based on my experiences with and perceptions of this online course:*

7.  The design of this course encouraged student interaction with students.
8.  The technology used in this course fostered collaboration among students.
9.  This online course provided ample opportunities for communication among students.

*Based on my experiences with and perceptions of this online course:*

10. The organization of the course was clear.
11. The instructions for assignments were clear.

**Instructions:**

Now, I want to ask you about your actual experiences in online classes.

Please think of a course you have previously taken or are currently taken that meets the following requirements:

1. It is completely online (either synchronous, asynchronous, or hybrid).
2. It utilizes asynchronous discussion boards in some way (whether required, optional, graded, not graded, etc.).

Use this course to answer the following questions about discussion boards and your feelings about the course. While answering the questions, answer in reference to this specific course not all courses with discussion boards in general.

1. Why do you participate or not participate in discussion boards in this course?


2. What factors would motivate you to participate in discussion boards (ex: graded discussion boards, more in-depth conversations, etc.)?


3. How likely are you to enroll in a course which uses asynchronous, online discussion boards in online classrooms as the only form of discussion?

   Likely          1        2        3        4        5        6        7        Unlikely

4. Discussion boards in this course help your learning or understanding of the content? Why or why not?

   Strongly Disagree        Disagree        Neutral        Agree        Strongly Agree

5. Do you feel participation in discussion boards brings you closer to your peers? Why or why not?


6. Do you feel participation in discussion boards brings you closer to your instructor? Why or why not?


7. Would you participate in discussion boards regardless of if they were required?

   Yes                No                Other (please explain): _____

**Demographics:**

Direction: Please circle or fill in the answer to each question that best fits.

1. Please list your age. _____

2. What is your biological sex?

   Male            Female            Other (please specify):            Prefer not to Answer

3. What grade level are you?

   Freshman        Sophomore     Junior            Senior            Graduate Level

4. What is your current Grade Point Average (GPA)? _____