CREATING SPACES FOR DEEP CONVERSATIONS AROUND EQUITY IN SYNCHRONOUS ONLINE LEARNING ENVIRONMENTS: A CASE STUDY

by

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DISSERTATION ABSTRACT

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Distance education is a new frontier for many rural California schools. In the spring of 2020, a global pandemic caused an immediate transition to online, synchronous learning platforms for the entire state. In discussion-based classrooms, where students build learning from the material, and interaction with each other, the shift posed new challenges to educators and students. This mixed methods action research case study focused on teaching about deep, challenging issues in the area of educational equity using a web-based platform. Focusing on a Northern California University course that is a pre-requisite for teacher candidates, data were collected over the course of two semesters. Forty-eight students were surveyed regarding their experiences taking part in deep discussion around equity issues over a synchronous Zoom platform. Interviews with four instructors and seven student volunteers were conducted to add depth to the survey data. A key finding from this dissertation is that Students of Color were significantly less comfortable discussing issues of race, gender, and equity with their cameras on than were White students. Additional findings pointed to race and gender-based preferences in engagement with the class material. Data indicate that the use of a multi-component pedagogy including anonymous discussion boards, chat posts, and group breakouts is important to reaching all students when engaging an online class in discussions about race, gender, and sexuality.

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CHAPTER I

INTRODUCTION AND LITERATURE SYNTHESIS

The realities of the pandemic of 2020 placed distance learning at the forefront of education. The move from face-to-face instruction to remote modalities like Zoom and Google Meet was swift. Teachers were expected to maintain high levels of content delivery, while students were required to show up and engage using an online format with which they had no prior experience. Instruction in such formats is provided through screens, creating new barriers between learners and instructors. Connecting with students online in deep and meaningful ways requires more than asking students to keep their cameras on. Access to online learning modalities, the robustness of the curriculum, and how teachers can engage with and create learning experiences for students are being debated and studied. As a lecturer at a university, I have been wondering what has been lost, if anything, now that many educators and students have pivoted to embrace this new normal. Of special consideration is how teachers are engaging students in meaningful, deep discussions around issues of social justice and equity.

This study examined how university students in Zoom-based synchronous learning environments can thoughtfully engage in relevant discussion and exchanges about equity issues. The equity issues in specific focus for this study were racism, genderism, classism, ableism, and sexism. In a face-to-face class, discussions regarding equity issues can be challenging. In a synchronous, Zoom-based classroom, the online, screen-based learning environment creates barriers and unique obstacles to robust, relevant interactions.

As a white, cisgender woman teaching about anti-racism and anti-oppression, I need to make sure I am creating a classroom where students feel welcomed and building a community of openness where are all learning together. I cannot assume I know about anyone's experience, and I want to make sure students feel like they can speak up, speak out, or share about how their lives have been impacted by oppression, how they can see its impact on society and our systems, and lastly describe changes they want to make in their teaching practice in response. Students and I arrive at this class at different starting points, and we are all vulnerable in some way. I respect each of their positions and want to make sure that I am expressing both through my actions and words that each of them is valuable and bring something relevant and different to our learning community. I want to be able to communicate with students how much I learn from them and how I learn something new about the readings and resources each time I interact with the sources with a different class.

I started this study because I realized the gravity of teaching this course. An equity focused undergraduate course for pre-service teachers, the course objectives describe exploring biases through discussions about racism and white supremacy, gender, poverty, and sexism. The objectives further ask students to identify anti-racist and anti-oppressive practices they will use in their own teaching. These concepts need real, open discussion, with strong student participation to help students form new connections about the material. Learning from each other and sharing experiences, both personal and with the curriculum, are important to growing in this course. I wanted to find out how to do this in an online synchronous classroom, or at least start to improve my practice in supporting student learning in this format.

Research in Zoom-based Classrooms.

Emergent research in the area of student engagement in online platforms indicates that students who are using Zoom in synchronous learning environments are as attentive as students who are receiving instruction face to face (Smith et al., 2020). Smith et al. (2020) conducted a study of 30 graduate students using a Zoom platform, reporting similar rates of attentiveness to non-Zoom based learning. The study used the metrics provided through Zoom to gather information about student activity during instruction. The metrics provide information about how long students stay on the Zoom screen without navigating to another window, which might indicate inattentiveness. In follow-up focus-group interviews with nine of the students, researchers found that graduate students estimated they could focus for 30 minutes of lecture without interacting with other students. The same students reported they believed that their attentiveness increased when in small groups and during in-class discussion activities. Further, students reported that their attentiveness waned during face-to-face lecture classes as well, when the lectures were too long or without a break. These preliminary findings have interesting implications for the importance of active participation and critical discourse about serious, personal equity issues during Zoom synchronous teaching.

Theoretical Framework

The theoretical framework underpinning my research is the Activity Theory of expansive learning, as developed by Engström (2001, 2016). Activity Theory may provide a way to define the variety of ways that students, instruction/instructors, and technology interact to create a classroom culture online (Scalon & Issroff, 2005). Engström's theory of expansive learning seeks to describe interacting "activity systems."

He theorizes that individuals are never acting alone. They are acting in response to something and within the realm of their cultural experience. These activity systems develop over a long period of time and change over time and through interactions. "An activity system is always a community of multiple points of view, traditions and interests" (Engström, 2001, p. 136). Activity systems are constantly changing, growing and expanding, similar to the knowledge built by a classroom of students. Elemental to the activity system, is how it changes and grows as those within it move through Zones of Proximal Development (ZPD) (Vygotsky, as cited in Russell, 1995). Students respond within the system according to their ZPD on that issue. A student may have deep knowledge and experience in one area, and benefit from learning from another student about a different topic.

Engström's theory applies to my research question in several ways. Students bring different backgrounds and experiences to their learning—among them social, economic, gender, language, and race. Learners bring this knowledge to the activity system as context (Booth & Hülten, 2003). Working together, learners within the system expand on this context, their knowledge, building and expanding their ZPD (Russell, 1995).

Burge (1994) identified four types of peer behavior required for learning: participation, response, effective feedback, and focused messaging. Learners described their experiences with online synchronous classes, reflecting on how experiences, varied perspectives, constructive feedback and deep engagement with content magnified their leaning (Burge, 1994). How these peer behaviors occur within the Activity System impacts the quality of learning and the depth of knowledge gained from the class session. Each learner within each session is a different variable. Research indicates that

maximizing student participation and response output—and thus connectivity—promotes deeper engagement and discussion, thus strengthening the Activity System (Booth & Hülten, 2003; Burge, 1994).

Instructors' positions also impact learning within the Activity System. Lecturers' varied experiences and viewpoints influence their interactions with students in a variety of ways. Lecturers who have fluid, reflective processes create robust Activity Systems that are constantly changing and growing within the classroom space and community itself. Engeström (2001) terms this *expansive learning*. Learners involved in this process are developing and working on something that is not yet there. The learner and the instructor are working toward building understandings together, through interactive processes. Booth and Hülten (2003) identify learning within an Activity System as "a qualitative change in the relationship for the learner between the knower and the known" (p. 69). In other words, learning happens when the student can describe and reflect on what they have learned to themselves and with others. The expansive learning process of an Activity System is formative and cyclical, and it can take on its own life in the context of the learners within a discussion or group (Booth & Hülten, 2003; Engeström, 2016). The interaction-reflection cycle leads to higher-order frameworks being built for the learner. This interaction provides the framework for how to investigate my research questions.

Activity Theory also describes a process by which an Activity System is created and continues to evolve. In my work, I see this as the interactions between belonging, methods of instruction, class connections-teacher, and class connections within the class community. These interactions take place within the realm of one class, with group

thinking and actions being class specific, influenced by the class itself, and the group of students who create it. The collective processing of the group is part of the activity system specific to that class (Booth & Hülten, 2003) as are the knowledge and understandings formed (Burge, 1994).

I am using Engeström's model of Activity Systems to show first, how each class is a separate cultural entity, and second, how the use of reflection, discussion, and analysis can create and sustain new systems that support deep conversations around equity. This cycle of reflection, discussion, and analysis is important because the use of deep conversations is necessary for growth, both of the instructor and the students (Abdal-Haqq, 1998). Within the Activity System, the relationships overlap and intersect. Learning around equity issues is built through interacting and reflecting. This process is relevant to responding accurately to the research questions I have posed. Social Constructivist theory, a teaching style and strategy, provides information about how classrooms can be structured to increase these interactions (Abdal-Haqq, 1998). Constructivists would posit that true intellectual growth is promoted through discussion and by interaction with other learners. Uncovering what students are struggling with, in relation to the material, and providing opportunities for them to discuss this deeply with others is the essence of a deep conversation. Deep conversations around equity are necessary to promote change in the learner (Holmes & Weaver, 2020).

Online Synchronous Learning

For the purposes of this study, *online synchronous learning* refers to a class where students meet regularly, in an online modality. These can take several forms, including Google Meet, Webex, and Zoom. In this study, the focus platform is Zoom. Zoom is the

2nd most popular synchronous conferencing tool, behind number one, Google Meets (Molnar, 2020). Zoom has breakout room capabilities, in addition to polling and screen share for all participants, allowing for flexibility when teaching.

The term synchronous teaching and learning refers to instruction that takes place during a set class period. The virtual format allows for real-time exchanges and feedback between both students and instructors and more closely mirrors true face-to-face teaching than asynchronous teaching and learning (Superville, 2020). In contrast, asynchronous online teaching and learning takes place on a more individual basis, and there is little to no direct student-student or student-teacher interaction in real time. The instruction and discussions take place virtually, through videos and discussion boards that are accessed by each individual student (Superville, 2020). Both approaches to online instruction are used in higher education; however, the focus of this research is the synchronous format.

Key Elements of Effective Distance Learning

Key areas of online or distance learning that are best practices for all learners can be described by the categories "strategies, activities, and techniques" (DiPietro et al., 2008, p.12). Content that is meaningful and relevant to the students, strategies that engage and motivate students, and methods that require and encourage collaboration and critical thinking are essential to effective online or distance learning programs (DiPietro et al., 2008). Closing the relationship gap created by the distance of technology by making personal connections with students also supports engagement (Gillis & Krull, 2020). Also important is teacher facility with the technology required to access and present information (Gillis & Krull, 2020). Students who experience frustration with the

technology or with the teachers' use of the technology report feeling more disconnected from the course (Gillis & Krull, 2020).

Engagement and Online Learning

Instruction in a synchronous online learning environment, while uncommon prior to 2019, has taken on greater importance with the advent of COVID-19 era restrictions. Previously a choice, online education became a necessity in the spring of 2020. The lack of information about best practices in online instruction for educators in higher education drove this project into being.

Although the target population differs, research related to secondary school learning may provide important insights. Student engagement has been shown to be the strongest predictor of student learning and educational development (Pascarella & Terenzini, 2005). In a study of 578 middle and high school students, Dogan (2015) found that cognitive engagement had a weak positive effect ($r = .36$) on academic performance. The pursuit of educationally relevant activities predicts student learning (Kuh, 2001). Constructivist learning, or building meaning through interaction, is a theoretical teaching model behind many best practices and techniques (Abdal-Haqq, 1998). Although engagement is key to learning, the literature related to engagement and online learning is nascent.

Smith et al. (2020) studied 18 graduate students in synchronous Zoom-based online classes. The students, who had self-selected this online learning modality, perceived that they had reduced attentiveness, in comparison to learning in a more traditional, face-to-face modality. Similarly, Serhan (2020), in a study of undergraduate students who moved to Zoom mid-semester in 2020, found that students reported being

much less engaged using Zoom than in a face-to-face class. The study surveyed 31 college students regarding their perceptions of engagement in their Zoom-based class versus the face-to-face class. Survey results indicated that 62% of the students felt that Zoom learning negatively impacted their engagement, while just 12% felt that their engagement was improved using the platform (Serhan, 2020). These data point to challenges for teachers attempting to maintain student engagement during synchronous sessions.

Evidence-based teaching strategies specific to a Zoom-based platform are an emergent area of research. Strategies found to promote engagement on Zoom include small group breakout sessions and teaming. Students report that they stay more engaged for small group breakout sessions and when involved in partner work (Smith et al., 2020). Additionally, Smith et al. (2020) found that students participating in graduate-level education courses reported needing more frequent breaks and becoming disengaged sooner than when in face-to-face traditional classes. When the instruction was lecture based, data indicated that students moved away from the Zoom screen after approximately 30 minutes (Smith et al., 2020). Student respondents felt it was more difficult to communicate and interact via Zoom, compared to face-to-face classrooms (Serhan, 2020). Students who were made aware of when breaks were scheduled and could anticipate them, reported being better able to focus and engage in class during lectures (Smith et al., 2020). These findings have important implications for instructors.

Engagement with Other Students

Engagement in online learning is more than just connecting with content and listening to lectures. Real engagement that drives learning involves reciprocal learning

relationships with other people in the class (Thurmond & Wambach, 2004). “Human behavior is situated within a social context that influences behavior” (Scanlon & Issroff, 2005, p. 432). Discussion with peers, collaborating, and communicating with others who do not have similar experiences or backgrounds have been found to enhance student engagement (Cabrera et al., 2002). Each classroom, even online, is unique and comprised of people who bring their own ideas to the discussions. Awareness of this symbiotic relationship and its impact on student learning is critical to the formation of classrooms where critical conversations about oppression and racism can take place. Students need to feel like their classroom is a safe place, where learning is shared in an open discursive environment.

Discussions between students are essential to student perceptions of course efficacy (Gillis & Krull, 2020). In a study of two university undergraduate classrooms, students perceived that their learning was more reflective and critical during live discussion than in discussion that took place on an online forum or discussion post in response to a prompt (Gillis & Krull, 2020). Construction of learning, by interaction and reflection, occurs in a mutually supportive space. Facilitating learner-to-learner communication and engagement can be challenging in any learning delivery model. The instructor can be a pivotal factor in ameliorating the issue of student-student and student-course connection (Dyer et al., 2018).

Engagement with the Instructor

Interacting and communicating with the instructor in an online modality is different than doing so face to face, in person. No body language, and sometimes fewer facial cues are given to reassure the learner or to provide non-verbal feedback. Learners

can feel uneasy or unsure about how they are being received. Decreasing this feeling of disconnection can help reproduce the feeling of a face-to-face classroom and support student participation in productive discussion (Dyer et al., 2018). Increased interactions with the instructor that mimic proximity can promote student participation in deep discussion and improved perceptions about learning. To mimic proximity, instructors should be open, accessible, and responsive (Dyer et al., 2018). Research in this area indicates that it might be important for online learners to have an instructor who is aware that a strong focus on high-quality interactions with students promotes higher-order thinking and learning (Thurmond & Wambach, 2004).

High leverage teacher-learner interactions have critical implications for student engagement and success in an online environment (Billings et al., 2001; Thurmond & Wambach, 2004). Elements of these high-quality interactions include rapid feedback and communication; high expectations; cooperative, caring environment; and respect for all students in the class (Billings et al., 2001; Thurmond & Wambach, 2004). In a study of 219 nursing students enrolled in online coursework, researchers found a moderate positive correlation (*r= .69)* between engagement (termed *active learning* in this study) and increased student faculty interaction (Billings et al., 2001). Positive and more frequent connections influenced students to be more involved in the class.

Connecting with students does not need to occur in person. Impactful interactions enhancing student-faculty connectedness can take place during instructional time or through email or feedback on written work (Billings et al., 2001). Prompt feedback on assignments was found by most students to support positive engagement in an online course (Billings et al., 2001; Dyer et al., 2018; Vrasidas & McIsaac, 1999). How students

feel about the interactions matters as well. Vrasidas and McIsaac (1999) found that students' perceptions of interactions with the instructors and experiences with rapid feedback promoted student engagement in the class itself. Their findings indicated that the social aspect of praise by the instructor provided the impetus for student engagement (Vrasidas & McIsaac, 1999). Instructors who create positive environments with time for praise and feedback promote the greatest engagement from their students.

Student Engagement in Classrooms that are Equity Focused

Data from the National Survey of Student Engagement (NSSE) indicate that students in online courses are "less likely to engage in collaborative learning, student-faculty interactions, and discussions with diverse others, compared to their more traditional classroom counterparts" (Dumford & Miller, 2018, p. 452). Discussion around deep equity issues requires processing and interaction to help form ideas and create new connections. Construction of new learning does not occur in a vacuum. Students must interact with others to challenge their assumptions about different ideas (Bryant & Bates, 2015). Equity issues require reflection and discussion for learners to fully process their gravity (Abdal-Haqq, 1998). Constructing new idea frameworks through discussion and reflection supports learning growth around the concepts being studied, in this case, educational equity issues.

Abdal-Haqq (1998) found that teacher education students could be especially influenced by the process of Constructivist Learning when they engage in deconstructing their prior beliefs and discover how their actions impact others. With evidence indicating how essential these connections are to learning and engagement, a unique challenge is

created for online instructors working to provide rich, discussion-based spaces for students.

Cabrera et al. (2002) found that how students felt about their in-class experience made a difference to their engagement in that class. Gillis and Krull (2020) also found that when students view class as "enjoyable", they are more engaged and academically productive. Students reported that the quality of the interactions with faculty, the measure of their in-class interactions with other students, and the racial climate of the class impacted their perceptions of their classroom experience (Cabrera et al., 2002). These "learning communities", as termed by Cabrera et al., form a supportive, connected classroom environment where students can safely learn and communicate.

Discussion in Equity-focused Classrooms

Communication and synthesis of information is key to student growth when learning about equity issues (Abdal-Haqq, 1998; Cabrera et al., 2002; Gillis & Krull, 2020). Thus, it is important to delve into how to best structure discussions in an online environment. Students view online discussion boards as less interactive and productive of learning than Zoom-based discussions (Gillis & Krull, 2020). When Zoom class discussions are framed similarly to face-to-face discussions, students found these to be more intellectually stimulating and enjoyable (Gillis & Krull, 2020).

Social constructivist teaching and learning online

Social constructivism asserts that the interaction between learners helps them to make connections and meaning from material (State University, n.d.). Discussion, interaction, and connection are key to making new connections and learning. The methodology of social constructivism is particularly pertinent to the development of new

frameworks in reference to equity issues. Students' prior experiences can impact their learning and experiences about others and difference, as can their views of the material presented in class (Abdal-Haqq, 1998). Social constructivist teaching helps students break down these assumptions and rebuild new ones based on new learnings and connections (Abdal-Haqq, 1998). *Collaborative learning,* as termed by Cabrera et al. (2002), refers to how students work together within a class to build learning frameworks. In a study of 2,050 students at 23 institutions in the United States, Cabrera et al. (2002), found that collaborative learning had the strongest impact (*r= 0.235)* on students' openness to diversity. This information is important to the current study, as the course being studied focuses on increasing student awareness and openness to diversity.

Students need to dialogue to make sense of materials presented in class (Bryant & Bates, 2015). Pre-service teachers especially need to "deconstruct their own prior knowledge and attitudes, comprehend how these understandings evolved, explore the effects they have on actions and behavior, and consider alternate conceptions and premises that may be more serviceable in teaching" (Abdal-Haqq, 1998, p. 4). Learners read material with their own lens. How others in their learning environment interpret the same materials adds depth and promotes expansive learning that will support the learners in applying their knowledge.

Social Constructivist Teaching and Learning Online

Research into the application of constructivist theory and online learning is sparse. Given the prevalence of online instruction in response to the 2020 COVID-19 pandemic, this topic is ripe for additional study.

CHAPTER II

METHODS

For my dissertation, I conducted a mixed methods case study to explore the relationships between teaching methods and class climate in a synchronous Zoom education course focused on equity. The focus course includes sections taught by the researcher as well as sections taught by other faculty and is located at a state university in Northern California. This university course, an undergraduate prerequisite for pre-credential teachers, is intended to help students enhance their personal and professional understanding of equity issues. The case study examined students' readiness to engage in deep conversations around issues of race, gender, sexuality, and dis/ability within the context of synchronous online learning. Data were collected through structured surveys and targeted interviews.

Research Questions

I addressed two research questions in this study.

RQ (1): What types of synchronous online pedagogies and teaching strategies promote student engagement and meaningful discussion of equity issues in a university course for students studying to become teachers?

RQ (2): What are the strengths and weaknesses of a social constructivist approach to teaching and learning in synchronous online classes in terms of creating an environment where students can share and grow in the areas of educational equity?

Setting and Participants

This study was set in an online synchronous learning environment in a California state university. Although most of the data came from a class I taught, additional data were gathered from sections of the course taught by other instructors at the same university. The classes were held synchronously via Zoom, an online platform with 300 million daily users (Iqbal, 2020). Each class met once per week, for two hours and 50 minutes. There were 34 registered students in the section of the course from which the majority of data were collected. The class is a pre-requisite for the university's teaching credential program, and all prospective teachers enrolled in the university are required to take it. The class met 15 times over the course of the 16-week semester. Sources of data included student surveys and interviews, classroom engagement data, and field notes, as described below.

Focus Course Design

Objectives for the course are focused on having students reflect and develop a critical sense of the systemic power structure of education and its impact on marginalized populations. The six course objectives include:

1. Critically reflect on stated and implied personal biases and assumptions and develop dispositions that humanize all learners, specifically students from underserved populations. Draw from a range of key scholarship in the field of education as it relates to access and equity in order to create and sustain healthy learning environments.
2. Demonstrate an understanding of intersectionality (i.e., race, gender, sexuality, religion, class, dis/ability, and bi/multi-lingual) and how personal and group identities are impacted by systems of oppression, particularly in U.S. public schools.

3. Critically analyze how the structure, funding, and history of public schooling in the U.S. perpetuate a legacy of inequitable policies and practices (e.g., inequitable funding for schools, Eurocentric curricula, etc.)

4. Understand, examine, and interrogate how racist and oppressive institutional, systemic, and structural policies and practices are reproduced and sustained in the U.S. educational system, thereby maintaining the unjust status quo.

5. Identify and problematize oppressive policies and practices in the educational system, with a particular focus on public schools and communities, at the classroom, school, community, and state/national levels.

6. Leverage the knowledge gained throughout the course to identify anti-oppressive policies and practices in the U.S. educational system that support access and equity, particularly for marginalized students and communities. Using this lens, develop anti-oppressive classroom and/or school-based teaching resources and practices that cultivate equitable learning communities and contribute to the physical, social, emotional, and intellectual safety of all students.

Defining Equity Issues as Discussed in Focus Course

Equity issues such as gender, race, sexual identity, and ableism are the foci of the deep inquiry and discussions in the course. The objectives are increased understandings and awareness of the depth of these issues for educators and the students they serve. The equity issues have wide-ranging impacts, from funding to structural and systemic oppression. Scholars have defined and researched these equity areas. The theories that are used in the context of this research and this class setting are defined below.

Systemic racism. Structural and systemic racism is embedded in the educational system (Tatum, 1997). Tatum defines systemic racism as a "system involving cultural messages and institutional policies and practices as well as the beliefs and interactions of individuals" (p. 206). Embedded advantages and systemic power structures entrenched in being white in the education system are termed by Tatum as *white privilege*. Through white privilege, prejudice and power intersect to produce social and economic impacts that negatively affect People of Color and positively impact White Americans.

Genderism and sexual identity. Genderism, as defined by Browne (2004), refers to the rejection of bodies and individuals whose genitalia do not match their gender identity. This concept can also refer to the repudiation of people who do not match the gender with which they were born or who seek to change the gender with which they were born. Browne refers to "discontinuities between the sex with which an individual identifies and how others, in a variety of spaces, read their sex" (2004, p. 331). Sexual identity, as defined by the Gay, Lesbian & Straight Education Network (GLSEN) refers to "The inner feelings of whom a person is attracted to emotionally and/or physically, in relation to their own gender identity. Some people may identify as 'asexual,' 'bisexual,' 'gay,' 'lesbian,' 'pansexual,' 'queer,' 'straight,' and many more" (GLSEN, 2020, para. 2).

Ableism. Ableism, as defined by Hehir (2002) refers to "the pervasiveness of . . . ableist assumptions in the education of children with disabilities [that] not only reinforces prevailing prejudices against disability but may very well contribute to low levels of educational attainment and employment" (p. 1). The primacy of ability and the *othering*

of those who present as something other than able-bodied is the dominant theory of ableism.

Research Approach

I conducted my study within the context of Participatory Action Research. This type of research stems from a desire to improve practice by the researcher (Dinkelman, 2003). Dinkelman (2003) sees PAR as "a means and ends tool for promoting reflective teaching" (p. 7). Using PAR as a research context allowed me to use my practice and experiences in my own classroom as starting points for this study.

I broadened the scope of this research to include data from other instructors teaching the same course in the same modality, in this case, a Zoom based synchronous classroom. I also incorporated a lens of Critical Participatory Action Research (CPAR), which supports the investigation into how knowledge is built in the synchronous Zoom environment through constructivist teaching and learning, with participants engaging in reflection and practice-changing discursive exchanges (Kemmis, McTaggart & Nixon, 2013). Truly, CPAR engages the researcher to look "to a critical view of education as cultural, social and economic transformation for individuals and societies" (Kemmis, McTaggart & Nixon, 2013, p. 71). Although the students were not actively participating in the research, they were undergoing possibly life-changing revelations as they reflected on important equity issues. Indeed, that is the purpose of the class in which the students are participating, so the use of this lens is important to see how connections are made as they are formed and how they developed.

In addition to being an action research study, my dissertation incorporates a mixed methods case study approach. Yazan (2015) found that viewing case study sites as

unique, self-contained entities lends intent and purpose to the study. In this case, the institution of higher education where this study took place was the case study site. By analyzing different sections of the course, I hoped that common strategies and pedagogies would emerge. Finding commonalities between units should provide insight as to whether there are characteristics or pedagogies, regardless of instructor teaching the course, that encourage deep discourse or student involvement and engagement in the equity issues discussed.

Process and Instrument Development

Data were collected from a variety of sources, as detailed above. Data collection instruments used were surveys and interviews. As an active participant in the research, I took fieldnotes during my teaching, and reflective notes following each session. The method of *event sampling* was also employed (Kemmis, McTaggart & Nixon, 2013). This method allows the researcher to gather information about a variety of themes over time. Themes surveyed using this method were: *length of discussion*; *camera use during discussion*; *number of students involved in discussion*; and *use of a variety of modalities to participate in the discussion* (e.g., chat feature, google docs note taking by group, other technology used to promote discussion, group leadership presentations and engagement, student feedback and verbalizations, student analyses in class of equity issues).

Observations are crucial during qualitative studies, providing the researcher an opportunity to "discover complex interactions in natural social settings" (Marshall & Rossman, 2011, p. 140). My fieldnotes helped form the basis for the interview questions and shaped my inquiry process. In particular, my notes were central to the development of my list of response choices for two of the multiple-choice response items on the

survey. In my teaching, some students would respond differently to different activities or response modes. I wanted to find out more about why, and which ones best promoted discussion and engagement. Additionally, I wanted to know what barriers students might face in participating. In developing these response options, I again considered my fieldnotes, and my own experiences as a Zoom learner.

A total of eight sections of this class are held each semester at the university, with four of the eight offered synchronously via Zoom. A link to an anonymous online survey (see Appendix A), and a request to participate, was emailed to each student in each of the sections of the class taught synchronously via Zoom. These emails were sent to students during the 7-10th week of a 16-week semester, with three separate emails / survey links sent to encourage students to complete the survey.

Students who completed the surveys were asked if they would be willing to participate in a focus group interview. Five students participated in the interview. Each interview was recorded, and took place via Zoom or a recorded phone call. The format for each interview was semi-structured. Each interview lasted approximately 40 minutes.

Each student interviewee was asked the following questions:

1. What strategies do your instructors use to create safe spaces in synchronous zoom classes- what constitutes a safe instructional space?
2. What makes you feel safe to speak/participate in a synchronous zoom discussion—can you provide an example of when this occurred?
3. What specific methods are used by instructor to promote meaningful discussion about equity in an online environment—can you give examples?

4. What prompts or strategies allow you to feel you can voice or participate, even if you feel what you are going to say may be different from what others will say or are thinking?
5. What are the barriers to you participating fully in a meaningful discussion? How are these different from those you might encounter in a face to face or asynchronous environment?

The interviews were transcribed and coded by theme and statement, using the Dedoose software program. Themes used for initial coding included: *student comfort in an online environment*, *methods used by instructor to promote deep discussion about equity in an online environment*, and *methods used by student to communicate in online environment*. Further themes emerged as the data were coded. These themes were: *perceived barriers to student participation*; *classroom environment*, including student-student and teacher-student interactions; and *use of a variety of communication modalities*, including the chat, Google Jamboard, and discussion boards. The goal of the survey and interview process was to identify pedagogies and strategies that students felt were conducive to online discussions about deep issues around equity. Identifying potentially informative differences between the online synchronous environment and the face-to-face environment was a further goal.

All instructors (inclusive of those holding professor and lecturer ranks at the university) who taught this course in a synchronous Zoom environment during the time when the study took place were invited to participate in semi-structured interviews. Each professor/lecturer was interviewed about how they changed and designed their courses when they moved from in-person instruction to Zoom-based synchronous teaching. Each

interview lasted a minimum of 30 minutes and took place via Zoom. The interviews consisted of the following five questions:

1. How do you make instructional decisions generally? Does this change with the use of Zoom/online?
2. How do you encourage students to share and participate in deep discussions around equity issues during your online sessions? (for example—example of deep discussion)
3. What changes do you make based on input and situation? Can you provide an example of this from a class?
4. How do you build community and trust in your Zoom-based synchronous classroom? Can you provide an example of a strategy or an activity?
5. What other considerations do you make when planning for distance learning?

Each interviewee weas asked the same five questions in the same order. The interviews were recorded, transcribed, and coded using the Dedoose software.

Data Analysis Methods

I followed Creswell's (2007) suggestions for qualitative data analysis. First, I organized and prepared the data for analysis, sorting and arranging the data into different types depending on the sources of information. Then, I read through all the data to get a general sense of the information and reflect on possible meanings. During this process, I took notes about emerging themes. Third, using Dedoose software, I coded the data to identify the themes and ideas conveyed, assigning themes and ideas to categories and selecting a descriptive name for each of the categories identified. Fourth, I organized the data by category and searched for interconnected themes. Fifth, I developed ways to

represent the themes that emerged, through visuals, selected quotations, and illustrative examples. Finally, I used these emergent themes and representations to interpret the data and draw conclusions.

I used the following themes to guide my investigation: *Teaching* methods perceived to be most effective in sustaining deep conversations about equity; *in-class activities* perceived to be most effective in creating an environment conducive to deep conversations about equity; *student-student relationships or interactions* that were conducive to producing/maintaining deep conversations about equity*;* and *student-instructor relationships or interactions* that were conducive to producing/maintaining deep conversations about equity. My analytic notes were triangulated with observational data, including field notes and event sampling data. Interviews provided further evidence in the triangulation of the data. The observational data were coded and sectioned into different themes, focusing particularly on student engagement, student-student interactions; and student-instructor interactions.

Interviews were used to triangulate data and for member checking. Respondent validation can support the validity of quantitative research (Birt et al., 2016). By interviewing instructors and students, data can be verified to some extent. Although member checking is challenging with anonymous surveys, using interviews and event sampling adds validity to the interpretation of data collected.

Plans to Control for Threats to Validity

Awareness and acknowledgement of the threats to validity that can arise in mixed methods studies is important. Although the surveys were administered anonymously, bias might still have occurred in the responses. Some of the responses could be due to how

respondents felt personally about a topic covered in class, rather than based on an actual experience in the classroom. Additionally, because the surveys asked about perceptions around school engagement, a recent negative or positive interaction could impact responses. The context in which this study took place must be considered. Each person experiences situations differently. The moment in time this study took place, where a pandemic and substantial racial tensions were part of the daily newsfeeds, reflects a time of change and possible stress to some individuals. This context might have impacted student responses, just as other events in students' lives could impact their outlook and thus influence their response to the questions on the survey. It is important to point out that all participating students were taking the course in a synchronous online format as a result of prohibitions against in-person attendance in response to the COVID-19 pandemic. Concerns related to the pandemic, including economic hardships, possible health threats, and the politicization of the pandemic and state, local, and federal officials' responses to it might impact people's experience, and this impact could be potentially profound. Thus, my findings might not generalize to online synchronous classes offered in non-pandemic settings.

Recruitment or selection bias could also impact the results. The classrooms included in this study represent a convenience sample from a state university in Northern California, which may not be representative of the rest of the state or the nation as a whole. The classrooms were also chosen by me, the researcher, based on access during a pandemic, as an opportunity to enable me to complete my dissertation research while having limited access to schools and other settings.

When conducting observations and interacting at all with subjects, bias could be a part of this process. To reduce this threat to validity, I developed and followed a written protocol for interviewing, interacting, and note-taking. This process was identical during all interviews.

CHAPTER III

RESULTS

Summary

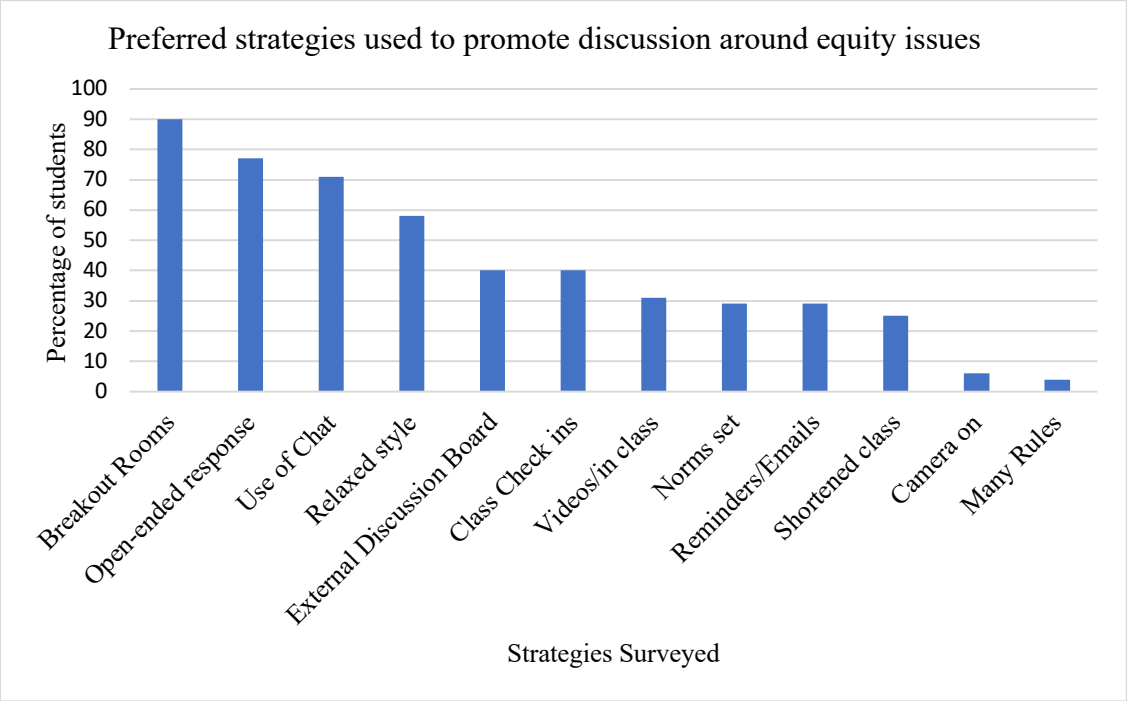
Data for this study came from responses to an online survey as well as interviews with a subset of the students surveyed (n = 5) and four faculty who taught the online equity class. Surveys were sent to 121 students via email link. The survey had a 40% (n = 48) response rate. Demographic data in the form of age, race, and gender were collected. For the purposes of this analysis, race was dichotomously coded as White Students or Students of Color. Students of Color is a phrase used to "intentionally include students who identify as Black, African-American, Asian, South Asian, Middle Eastern, Pacific Islander, Latinx, Chicanx, Native American, and multiracial" (Race and Pedagogy, 2021, para. 3).

Results, by Research Question

In response to my first research question, *What types of synchronous online pedagogies and teaching strategies promote student engagement and meaningful discussion of equity issues in a university course for students studying to become teachers*, the Likert-type survey asked students to check all of the strategies used by the instructor that they perceived to be most effective in promoting these discussions (see Figure 1). Students reported that they preferred the use of *Breakout Rooms* (90% of students, n=43), and an *Open-Ended Response* format (77% of students, n=37). Just 6% of student respondents (n=3), perceived that having the *Camera On* was effective in promoting deep discussions around equity.

Figure 1

Preferred Strategies to Support Discussion in Synchronous Zoom Classes



To answer my second research question, *What are the strengths and weaknesses of a social constructivist approach to teaching and learning in synchronous online classes in terms of creating an environment where students can share and grow in the areas of educational equity,* I wanted to find out how comfortable students were in the Zoom setting, to better understand how constructivist strategies could be employed. Building knowledge requires interaction, and the use of constructivist strategies supports this. Constructivist strategies require student comfort and interaction in a social context (Woo & Reeves, 2007). I had noticed in my own class that some students appeared to feel more comfortable than others when engaging in a discussion, and I wanted to see what factors contributed to this. Additionally, I wanted to find out what pedagogical decisions

and instructional strategies were most impactful in promoting discussion around equity. Providing an atmosphere where students can do this can facilitate discussion and heighten understandings about the material being learned. Students were surveyed to determine their comfort level in participating in this type of classroom experience, and in in-class discussion around equity (see Table 1). These data were further analyzed using a *t-test* to compare responses of Students of Color to White Students (see Table 2) and female students to male students (see Table 3).

Table 1

Student Responses to Likert-type Survey

Student Response to survey *n*=48	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Most comfortable contributing with camera on	14%	31%	33%	16%	4%
Most comfortable using asynchronous discussion boards vs. Zoom discussion	10%	29%	31%	21%%	8%
Best able to express self in face-to-face settings	14%	35%	31%	14%	2%
Most comfortable synchronously vs. online asynchronous discussion	4%	48%	22%	17%	8%
Most comfortable participating in discussion about equity with camera off	14%	23%	27%	23%	12%
Comfortable discussing equity issues during online synchronous	19%	44%	27%	8%	2%
Can express self fully about equity topics	18%	29%	33%	10%	6%
Can only express self in small groups	13%	33%	22%	25%	6%
Most comfortable using chat function to express self	17%	27%	35%	12%	8%

Table 2

***T-test* Results Comparing Students of Color to White Students in Strategy Preferences**

Survey question text	Students of Color *n*=23		White Students *n*=25		*p*
	M	*SD*	*M*	*SD*	
Most comfortable contributing with camera on	2.96	.98	3.7	1.02	.02
Most comfortable using asynchronous discussion boards vs. Zoom discussion	3.5	1.08	2.8	1.05	.02
Best able to express self in face-to-face settings	3.41	1.01	3.52	1	--
Most comfortable synchronously vs. online asynchronous discussion	3.09	1.13	3.36	.99	--
Most comfortable participating in discussion about equity with camera off	3.3	1.33	2.8	1.2	.2
Comfortable discussing equity issues during online synchronous	3.5	.99	3.9	.88	.2
Can express self fully about equity topics	3.5	.96	3.4	1.3	--
Can only express self in small groups	3.48	1.03	2.96	1.2	.2
Most comfortable using chat function to express self	3.26	1.18	3.36	1.15	--

Table 3

T-test Results comparing Female Students to Male Students in Strategy Preferences

Survey question text	Female Students *n*=33		Male Students *n*=14		*p*
	M	*SD*	*M*	*SD*	
Most comfortable contributing with camera on	3.15	1.09	3.86	.86	.05
Most comfortable using asynchronous discussion boards vs. Zoom discussion	3.09	1.23	3.14	.86	--
Best able to express self in face-to-face settings	3.44	1	3.64	.93	--
Most comfortable synchronously vs. online asynchronous discussion	3.33	.99	2.93	1.21	--
Most comfortable participating in discussion about equity with camera off	3.21	1.24	2.57	1.22	.2
Comfortable discussing equity issues during online synchronous	3.55	.97	4.14	.66	.05
Can express self fully about equity topics	3.25	1.16	3.79	.89	.2
Can only express self in small groups	3.42	1.17	2.71	.99	.1
Most comfortable using chat function to express self	3.49	1.15	2.92	1.14	.2

Two of the questions on the survey asked the students to rate how comfortable they felt expressing themselves during difficult discussions about equity with (a) Zoom synchronous instruction and (b) face to face instruction. These responses provided information regarding student overall comfort with these settings. The responses to these two questions can be found in Figure 1. Of the students who responded to the survey,

49% (*n*=23) of students *Agreed* or *Strongly Agreed* that they are best able to express their views in conversations about equity in face-face class sessions. Of the respondents, 63% (*n*=30) stated that they felt comfortable discussing issues such as racism, genderism and sexism in online synchronous classes. To find out more about why students might feel this way, I conducted interviews with student volunteers (*n*=5) and faculty who were teaching the class in an online synchronous format (*n*=4).

Table 4

Ability to discuss equity issues in face-to-face and online classes

Student Response to survey	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Best able to express self in face-to-face settings	14%	35%	31%	14%	2%
Comfortable discussing equity issues during online synchronous	19%	44%	27%	8%	2%

Themes

To determine what strategies are employed by instructors, and why or how students are made to feel as though they are able to participate in these discussions during an online synchronous Zoom class, I coded and analyzed the interview and open-ended question data. Themes that emerged from the analysis were: *self-expression*; *classroom environment*, including both *teacher-student* and *student-student interactions*; *variety of response modes* and *barriers to participation*. Each theme is discussed in detail, below, with examples from the open-ended questions on the surveys and interviews and

corresponding statistical analysis of the Likert-type survey data. Strategies are specified in each theme, and pedagogies specific to constructivism are highlighted in the results.

Self-Expression

The theme of *Self-Expression* emerged naturally from the data. It was not an original focus of this study; however, interview data emphasized the importance of this theme. The theme of self-expression is interpreted in the following way for the purpose of this dissertation. Statements from students who perceived that they were able to express themselves outside of class, in a different form, or in a form of their choosing during class or for an assignment are included in this theme. Interview excerpts from faculty who reported using strategies that allowed for students to choose how to express themselves (apart from an in-class activity).

Fully 40% of students who responded to the survey (n=19) perceived that the use of an external discussion board encouraged in class discussion about equity issues. Students were asked whether they felt more able to express themselves about equity issues by using discussion boards vs online synchronous discussions. When responses of Students of Color and White students were compared, Students of Color (n=23, M=3.5, SD= 1.08) reported being able to express themselves about equity issues by using asynchronous discussion boards over in-class discussions to share about equity issues at statistically significant higher rates than White students (n=25, M= 2.8, SD=1.05), with $p < .05$.

Narrative survey and interview data support this finding. Students reported that having an opportunity to have their thoughts validated by the instructor in a separate

forum made them feel more comfortable talking about issues of equity. The use of external discussion boards was mentioned frequently in comments and interviews.

> Participant 35 (M, SOC): *I just don't feel comfortable talking about those things in class, unless the professor is able to provide students with a platform to express themselves freely, without the fear of being judged by the rest of the class. I prefer online forums for that reason.*

> Faculty Interview 3: *I think the mentality behind that, (discussion boards), pedagogically speaking is here's another space for them to ... If somebody is hesitant on sharing in the online synchronous space, here's another way for them to get some ideas out, process, practice, work on there, just finding another way to be involved in the learning community, I think is what I'm going for.*

A student participant noted that although their instructor did *not* use them, the use of discussion boards would better support in depth discussion about equity.

> Participant 36 (F, SOC): *I know this is more work but I feel like discussion posts would be good. I really liked the reading for this class and actually read them all! I just wanted to talk about them more and see what other people had to say as well.*

My use of individual written assignments provided students with a way to express and explore themselves and the new things they were learning about equity. I gave careful feedback to each student on their individual written work that was submitted through the online learning system. I did not employ discussion boards for this class. Students reported that individual written feedback was valuable to them and encouraged them to persist in their learning.

> Student Interview 1 (F, W): *The writing assignments, when the instructor provided feedback on the things that I wrote, when I said things that were very personal or difficult to write, but that were necessary for me developing my own thoughts about being a future teacher, …(and they provided feedback) like, "I understand how you feel, these are really good perspectives." I almost felt like I had a cheerleader behind me.*
> *I think checking in with the student (outside of zoom class) is a great way to facilitate involvement*. (Participant 48, F, SOC).

Strategies the four instructors reported using that were not surveyed included the use of video to promote discussion (100% of instructors); the use of articles and current events (100% of instructors); the use of podcasts (50% of instructors); and the use of self-expression, meaning art or a creative project (50% of instructors). One instructor shared their impression about the benefit of using videos. They explained, "*I guess one thing I haven't mentioned yet is the use of videos has been really powerful for promoting discussion. I've brought in a lot of videos…and it's been really powerful for them"* (Faculty Interview 2).

Variety of in-class response modes

Breakout rooms were reported by 90% (*n*=43) of student respondents as being effective in promoting discussion about equity. These virtual "rooms" allow students to interact as they would in a small group format in class. Students were asked in the survey to respond to the statement *I can only express myself or talk comfortably in small groups.* Of respondents, 46% (*n*=22) *Strongly Agreed* or *Agreed* with this statement. Using the Dedoose software, a *t*-test was used to analyze responses. Students of Color (*n*=23, *M*=3.48, *SD*=1.03) were found to *Agree* or *Strongly Agree* with this statement to a greater degree than White students (n-25, M=2.96, SD=1.2), with *p*= .2. Although this difference is not statistically significant, it suggests a potential direction for further research with a larger sample size. Female students (*n*=33, *M*= 3.42, *SD*=1.17) agreed with this statement to a greater degree than did Male students (*n*=14, *M*=2.71, *SD*=.99), with *p*=.1. Again, although these differences were not large enough to be statistically significant, I am noting them, as a larger sample size might have sufficient statistical power to provide deeper insight into these results. The data collected provide information about how

different groups of students may interact during synchronous discussions. Interview and survey data support these findings.

> Participant 28 (F,SOC): *I follow well when we do many breakout groups. Kind of like switching it up in class to different things to keep us engaged.*
>
> Student Interview 1(F,W): *The breakout rooms were wonderful, because it made everybody human, instead of just a face on the screen, and once you got to know a few people in that class, those people became representative of the group, and then you just felt a little more comfortable in general.*
>
> Participant 9 (F, SOC): *Keep breakout rooms with the same students for the class period.*
>
> Faculty Interview 3: *I think going into breakout rooms and making the groups much smaller, provides them with an opportunity to test out language and to test out ideas without ... me looking over their shoulder.*

The chat feature was noted by 71% of respondents (n=34) as being important to promoting in-class discussion. In all, 44% of students who responded to the survey (n=21) *Strongly Agreed* or *Agreed* that they feel most comfortable expressing themselves using the chat. Of these students, more Female students (n= 33, M=3.49, SD= 1.15) than Male students (n=14, M=2.92, SD= 1.14) reported that they felt most comfortable using the chat to express themselves. Although this difference was not large enough to be statistically significant (p= .2), qualitative data from my study provide evidence in support of female students feeling most comfortable using the chat to discuss sensitive topics.

> Student Interview 2 (F, W): *Allowing us to type in the chat and making an effort to read the chat and acknowledge those replies is also great because I'm a shy person.*
>
> Faculty Interview 2: *I just try to allow them different ways of participating, including the chat window and small group participation, try to open up... try to make sure that the questions I'm asking are open-ended and it's kind of like share your experience, share your opinion, share your ideas rather than asking for a specific right or wrong answer.*

> Student Interview 1 (F, W): *It was quick, so it didn't have to be some crazy long, thought out thing. It was just throw your thoughts out there.*
>
> Student Interview 5 (F, SOC): *The tool with the private chat as well. Just messaging the instructor directly, so only they are seeing it. I think that's actually a great feature about Zoom, where it's like a person doesn't feel completely comfortable addressing it with all the peers it's directly to the professor.*

A majority of student respondents (77%, *n*=37) also agreed that an open-ended response style by an instructor contributed to producing in class discussion around equity. One student (Interview 1, F, W) reported, "I think, if a professor just said, 'No, that's wrong,' and then moved on,' you kind of feel shut down a little bit.'" Interview data also suggest that students who could feel anonymous in class felt more comfortable responding. Anonymous modes of contribution, such as Google Jamboard, an online interactive platform, were frequently noted by students as encouraging them to become involved and "voice" their opinions.

> Faculty Interview 3: *Between the group discussions, the small group discussions, the Jamboard activities that we worked through, there's a discussion board that is a part of my class where students have another opportunity to process the readings and to build upon each other's thoughts. I think (Jamboard) for me has been really nice because there's an anonymous factor to that one where they can put things and move things around and their name is not attached to it, which I think from my understanding, they seem to gravitate towards that.*

To facilitate more discussion, participation in discussion, and engagement in the discussion, instructors reported using strategies such as random groups in breakout rooms (100%, *n*=4); assigning roles in breakout rooms (50%, *n*=2); and asking students who have not commented to participate (25%, *n*=1). The instructors (100%, *n*=4) reported never "cold-calling" students or asking for a response from a student who did not volunteer.

Classroom community

Most students who responded to the survey (63%, *n*=31) indicated that they *Agreed* or *Strongly Agreed* that they are "comfortable" discussing equity issues in the online synchronous zoom classes. Students agreed that when faculty used strategies and methods "factually, directly, openly, using varied resources," students were more wont to participate (Participant 33, F, W). A majority of student respondents (58%, *n*=28) reported that a "relaxed classroom style" was more conducive to in-class discussions about equity. Students surveyed indicated that this meant an instructor who created an environment that was open-ended, non-judgmental, and supportive.

Community building

Both students and faculty emphasized the importance of community building to invoke an atmosphere of trust that might lead to open discussion. Personal connections and space to talk about topics other than those on the syllabus were important contributors to community building. One faculty member called this space to "be human."

> Faculty Interview 2: *I try to give students a chance often in the class to share what's going on in their lives outside of being a student. And so I give them prompts often at the very beginning of a session where it's sort of highs and lows, so share what's been going well for you lately and share something that has been a struggle for you lately, and so I do that often in pairs so that they get a chance to actually talk to someone else in the class for a while about their life and that really, I think helps open them up to learning the course content and to feeling safe to share their ideas with each other when they've gotten those kinds of chances to talk with each other about their lives.*

Teacher-Student

Faculty discussed how they provide space for students to have these discussions about equity, and how they are supported and maintained. Faculty described this as "*kind of building it as a conversation rather than a lecture. I mean, delivering, you know,*

information like really encourage, making them feel proud of what they're sharing and really acknowledging the value of what they're sharing" (Faculty Interview 2). Another faculty member described strategies to encourage students to talk to others, and to speak out, "*I have them choose somebody to respond and the next time somebody else will respond and then everybody can respond. And then I try to change people in the breakout rooms so they are working with different people"* (Faculty Interview 1).

Students referenced situations that made them feel more and less willing to participate and be open in their discussion. During an interview, a student mentioned that an instructor telling their story made them feel more willing to open up. The student stated that

> *…in one of my classes the instructor mentioned how they got to where they were and how they've come from nothing, really. The use of when it comes to more controversial or rather complex or deep subject material, personal stories, or through the use of personal stories, they are trying to state that it's okay to have these conversations.* (Student Interview 3, M, W)

Faculty vulnerability and openness were mentioned in open-ended survey comments as encouraging participation in class discussions around equity. One respondent added the comment "vulnerability" when surveyed about strategies their instructors used to promote discussion around equity. Another felt that "by being kind and allowing everyone to feel comfortable and not pushing their boundaries" the instructor created an atmosphere where they were more able to contribute (Participant 29, F, SOC).

Both faculty and student interviewees discussed classroom norms and how difficult situations were handled. Survey data indicates that 29% of student respondents (n=14) felt that setting norms promoted class discussion around issues of equity. At the

beginning of the semester, I review and discuss the norms for "Courageous Conversations" (Singleton & Linton, 2006). Another instructor creates norms for each class, as an organic group activity. This professor also uses certain phrases and key words to cue students or remind them about norms and to help redirect discussions.

> Faculty Interview 2: *I'll just say, Oh, I'm really glad actually that you mentioned this because this is a great chance for us all to think about this issue. There's different terminology that different people use to talk about identity, but I see it as my role to help you understand kind of the newest most up-to-date terminology*.
>
> Participant 45 (F, W) *[The professor] encouraged us to express ourselves but wouldn't let anyone talk down to someone else for their opinions or feelings. It was fair and led to good discussions*.
>
> Participant 41 (M, W): *Proctors students in a productive direction while providing their own personal insight.*
>
> Participant 5, (M, SOC) *They state facts and not opinions.*
>
> Interview Student 1 (F, W): *Even as adults, we need encouragement while we're just baring our souls here to a roomful of strangers, who literally could be recording the face we're making.*
>
> Participant 8 (F, SOC): *Very welcoming, no answer is the wrong answer, and treats every person and story with respect.*
>
> Faculty Interview 2: *I share stories of my own identity, like experiences of oppression and privilege that I've had based on different aspects of my identity and I share pretty vulnerable stories, then try to make myself vulnerable in sharing those so that they feel safe, if they want to follow that lead.*

Slightly less than a majority of student respondents (45%, *n*=22) reported that they *Strongly Agreed* or *Agreed* that they were *better able to express myself in difficult conversations about race and equity when I keep my camera on during discussion,* while the same number (45%, *n*=22) *Strongly Disagreed* or *Disagreed* with that statement. When these data were analyzed through Dedoose software using a *t-test* analysis, some significant differences were discovered. When responses of Students of Color and White

students were compared, Students of Color (n=23, M=2.96, SD= .98) were significantly less comfortable contributing during difficult conversations about race and equity with their camera on than White students (n=25, M= 3.7, SD=1.02), p <.05. A comparison of Male and Female students revealed that Male students (n=14, M=3.86, SD= .86) were more comfortable contributing with their camera on during difficult conversations about race and equity than Female students (n=33, M= 3.15, SD= 1.09), p =.05. Although the difference between Male and Female responses was not large enough to be statistically significant, it is worth noting as an area for potential future exploration with a larger sample. Just 6% (n=3) of students felt that requiring students to keep their camera on supported in-class discussion about race and equity. Interview and open-ended questions provided greater detail about these results.

> Participant 11 (F, W): *Make sure cameras off and chat is an option, I have anxiety about talking in front of groups.*

> Faculty Interview 2: *I reframe what participation looks like, it doesn't have to be cameras on whole class participation...I try to tell them that, "I'm not favoring people who are doing the whole group camera on kind of participation" because that's not really fair.*

Faculty key phrases and behaviors

Faculty interviewees reported using key phrases and behaviors to encourage and promote deep discussion around equity. One member reported using articles and videos suggested by students to augment discussion (Faculty Interview 1).

> Faculty Interview 2*: I try to point out what they are saying that's interesting. And ask them, "What do you mean by that?" "Can you say more about that?"... I'm trying to make them the experts.*

> Faculty Interview 3: *My policy with breakout rooms, is I have my camera off, I have my sound off. And when I check into a room, I am not there to engage unless I'm being asked to engage. So the way I explain it to my students is it's just like a*

real classroom, I'm just walking around the room with my hands in my pockets, just listening.

Faculty Interview 2: *If the conversation is going on and on in a certain direction where I feel like we're, de-centering the experiences of other identities, I'll try to bring it back.*

Other faculty referred to "reframing" the way they see participation. I made this overt by adding it to the syllabus, providing a menu of options from which students could choose to share and participate in the synchronous zoom class. I added to this list verbally as the semester went on. An excerpt of this approach is provided below:

> You will be graded on attendance, preparation for discussions and class work, and participation. You may participate more actively in small groups, or prefer to use the chat. Maybe you are the note-taker. An active role can look differently for each person—but the end result is engagement with the course.

Another faculty member shared,

I think reframing what I see as participation has helped me. So small group like peer share and small group participation, that is class participation. So they're doing that, I think that is acceptable way for them to participate in the class even if they're not participating in the whole large group because some students, there's a lot of reasons why they may not feel comfortable participating in the large group. (Faculty Interview 2)

Student-student

Building connections and community with other students created an atmosphere where students surveyed and interviewed felt they could engage in discussions around equity. Students reported that group work made them feel like they could discuss issues of equity in class. Slightly less than a majority of students (46%, n=22) *Strongly Agreed* or *Agreed* that they can only express themselves or talk comfortably about equity issues in small groups. When responses of Students of Color and White students were compared, Students of Color (n=23, M=3.48, SD= 1.03) responded that felt they could only discuss equity issues comfortably in small groups more than did White students

(n=25, M= 2.96, SD=1.2), with p = .2. Although not statistically significant, this result bears further investigation, possibly with a larger sample.

Group work projects outside of class also provided students an opportunity to express themselves and connect in ways that encouraged participation. All four instructors reported using groups in a variety of ways. Examples included using break out rooms, group work during class, and whole term group projects. Some groups remained the same over the semester, and other groups varied each time the class met.

> Student Interview 1 (F, W): *...the projects where you're forced to work together with ideas, not just getting a task done, that was good. When you make relationships like that, that's another line of investment in the class, or another, how do you say it? Almost like another feeler out into engaging in learning.*

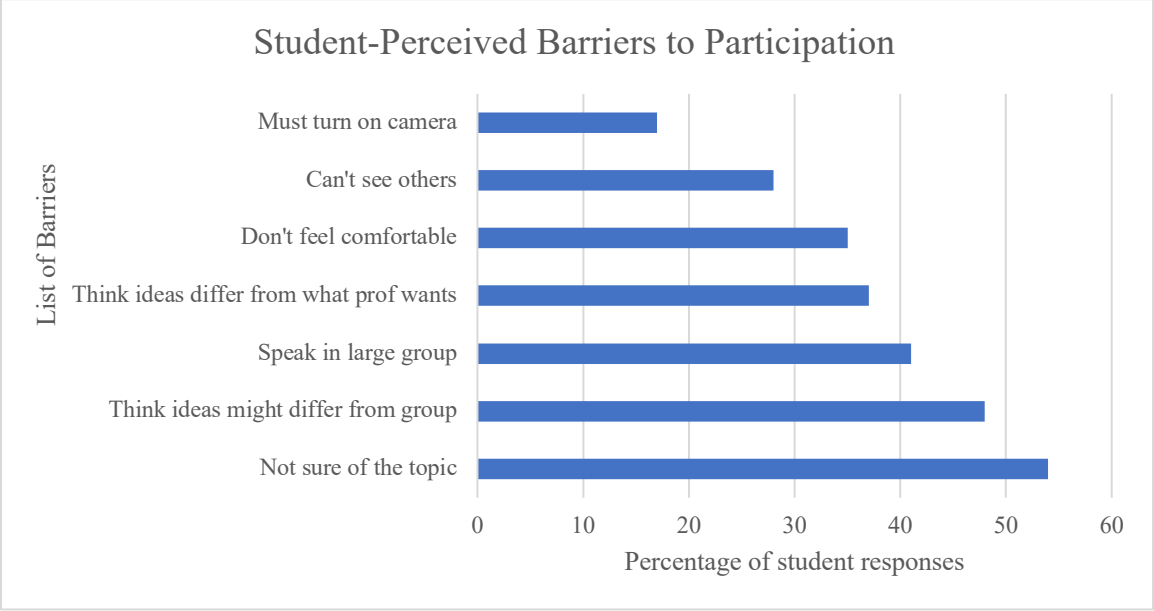
> Student Interview 2 (F, W): *Students who try to engage with me really help because I'm shy. So when we are in groups I enjoy people who start conversations and include everyone.*

Barriers to Participation

Acknowledging and studying the barriers students face to participating in deep discussions provides information about strategy use and student engagement. Some barriers are present online that are not present in person. Students were surveyed regarding barriers they perceived experiencing during synchronous Zoom classes focused on equity issues. Students were prompted to select all that apply to them in this situation. Not all students chose to respond to this part of the survey, with n=46. The results of this survey can be found in Figure 2. The barrier that students selected the most (54%, n=25) was when they were *Not sure of the topic.* Other students (48%, n=22) reported feeling less willing to participate when they felt that their ideas may differ from the group's. Interestingly, fewer students, at 17% (n=9) felt that it was a barrier when they *Must turn on camera*.

Figure 2

Perceived Barriers to Student Participation in Discussions



Willingness to participate

Survey data indicated that 35% of student respondents (*n*=16) *Don't feel comfortable* speaking in class at times. Almost half of the students who responded (48%, *n*= 22) indicated that they are concerned that their ideas may differ from the group's, and this impacts their willingness to participate in the discussion. Interview and open-ended response data support these findings. A student noted that they were unwilling to participate "*when they feel like they are already wrong*" in what they are going to say (Student Interview 2, M, W).

During the interview process, both students and faculty described some concern about sharing and participating in the Zoom synchronous environment. One instructor member remarked, "*I think we need to be more imaginative with the tasks that we're giving our students to do. And how are we creating these spaces for reflection in a way*

that is mindful of that temporalness regarding braveness and safeness" (Faculty Interview 3). The occasions when students feel willing or "*brave"* or "*safe"* to participate can vary based on input and setting Students can sometimes feel willing to participate, but that feeling can be fleeting. One student noted that "*the barrier lies on the safety of the individual in the class. This has to do with both instructor and peers*" (Participant 32, M, SOC).

On the survey, students were asked to respond to the open-ended question *"What barriers are there to your participation?"* Students shared feelings that confirmed the findings of the survey, as presented in Table 5.

> Participant 28 (F, SOC): *A lot of people have strong opinions, that if yours differ in any way, you will be shut down, made a fool of, or embarrassed by classmates.*
>
> Student Interview 3 (M, W): *People who talk the whole time and think that they know everything make me not want to contribute.*
>
> Participant 5 (M, SOC): *In my opinion I feel like people will judge [me].*
>
> Participant 30 (F, W): *I struggle with speaking up in class discussions, and I don't want to say the wrong thing.*

Technology-related barriers

Faculty discussed barriers that were more specific to the Zoom synchronous format and reiterated the barriers that students had noted.

> Faculty Interview 3: *For many of the students that I've worked with, they don't have a lot of experience, they don't have a lot of language to articulate some of the ideas that they may be having… And so that translates into trepidation or reticence where they don't want to participate because they're concerned about saying the wrong thing.*

A student agreed with this, stating,

> *Well, I have a hard time putting my thoughts together, so unless it's something not necessarily a hundred percent prepared, but unless there's something I've thought*

> *out thoroughly, then I stumble over my words, and it gets real choppy.* (Student Interview 3, M, W)

Student interview and open-ended response data reveal more about the barriers students face over Zoom, specifically related to technology or access issues. Students and faculty miss the opportunities provided in face-to-face classes to interact casually with others. Instructors (50%, *n*=2) noted that they miss the opportunities at the beginning and end of class to just interact casually with students, talking about the weather or non-class related topics.

> Student Interview 3 (M, W): *I guess all the connections I would have made started from, hey, where are we at? What are we doing? Can I borrow a pencil? Can I steal a piece of paper from you? There's really not necessarily a way to do that, utilizing Zoom, because everybody's in their home.*

> Faculty Interview 2: *And they come into class, and they'll ask you a question, are you just... Start talking about the weather or something. You can talk more easily in a face-to-face. In a Zoom, there's no before and after. During breaks, it's really hard to just chat with people.*

Barriers to participation were also embedded in the online format, as revealed in the interview data. Students mentioned the sound gap between when someone starts speaking and when others can hear them. One student can start to respond and another student starts to respond, they overlap because of a connection delay, and one ends up not speaking or participating. Another barrier involved the clarity of directions or instructions in an online class. A student described being unwilling to interrupt and break the silence to ask for clarification.

> *So that barrier is automatically created because maybe the student doesn't want to speak up and be like, "Oh, could you elaborate on this a little bit more? And actually, what exactly are you looking for from this question?*" *And it's just like that thing again where it's like, "Oh, I don't want to interrupt and ask for elaboration."* (Student Interview 5, F, SOC)

Another respondent mentioned the level of engagement of other students contributed to their own engagement and participation in discussion. Specifically,

> *I feel like in person you'd definitely get some agreement, some nodding of heads, something that just makes you feel as though the person speaking about something that they at least acknowledged you and heard you. While in Zoom, it is a little bit more difficult. Some people are not fully engaged and you're just not getting that feedback or response, just to reassure you that you're being heard basically.* (Student Interview 5, F, SOC)

> Faculty Interview 3: *I think that is been one of the bigger challenges of this whole Zoom project is how do we sustain community building in a way that's meaningful to whereas, if something like that does happen, it's much easier to say it on a computer screen. And in some cases like it's, I don't require my students to show their video. So that's another layer into that. It's much easier to say something flippant behind just the blank screen than it is if you're in a physical room with actual people.*

Summary

The findings from this study suggest the need to further investigate the difference in pedagogy and teaching strategies between Zoom instruction and face to face teaching. Although the sample is small, survey responses, combined with the interview data, suggest that using the same techniques that were effective in face-to-face teaching may not produce the same results. Additionally, there may be significant differences in the effect these strategies and pedagogies have with different populations of students.

CHAPTER IV

DISCUSSION

Main Findings

This mixed methods action research study contributes several findings to the literature. One finding is that students' self-reported level of comfort discussing equity issues such as race and gender varied for students from different ethnic groups, under different conditions. For example, White students were significantly more comfortable sharing with their cameras on than were Students of Color. In contrast, Students of Color reported being significantly more comfortable discussing deep issues of equity using asynchronous discussion boards versus synchronous in class discussions than White students. Responses from the constructed response survey items and interview data provide further evidence of this difference. These significant findings might suggest that the level of participation of Students of Color during difficult conversations about race and equity may be dependent on whether or not they are *required* to have their camera on or be interacting with other students in a synchronous setting.

I was unable to find other studies that had measured this effect. This finding is relevant, as how students engage with each other and with the class material is important to their development. Deep and honest interaction helps promote insight into the concepts they are discussing, particularly when they are discussing equity (Abdal-Haqq, 1998). In a meta-analysis, Abdal-Haqq (1998) noted that without careful analysis and discussion, structural oppression may be perpetuated in classrooms that mean to dispel it. In a study of their own classrooms, Martin and Gunten found that students need to interact with each other to uncover their own identities and "positionality" within the system of

oppression (2002). Their qualitative study of pre-service teachers delved into how students understand where they come from and why they hold views and frameworks about different social constructs, such as gender and race. Students in the study shared how they came to new understandings about the issues of race, gender and poverty, through interacting with each other and the curriculum (Martin & Gunten, 2002).

Discussion and engagement are integral to the formation of new ideas (Burge, 1994; Russell, 1995). In an early qualitative study of two synchronous 'video-conferencing' classes of 21 students each, Burge (1994) found that students need to interact and communicate with their peers in a variety of ways. The findings indicated that alternate student perspectives, individual risk-taking, as it related to an in-class discussion response and providing comments to peers were important to enhancing the learning environment in a synchronous online class (Burge, 1994). Interactions with students who have different backgrounds and experiences are also critical elements to forming new learning (Booth & Hülten, 2003; Burge, 1994).

Booth and Hülten examined activity systems within synchronous learning environments, focusing on how individuals interact during discussions online and the dynamics at play in this modality. Their sample was five groups of engineers who were on a collaborative project to solve a complex problem. This study identified that the learning process involves "understanding, sense-making, and seeing things in new ways" (Booth & Hülten, 2003, p, 69). They used the phrase "opening a dimension of variation" to describe how the learners saw things in new ways. People with different backgrounds and experiences brought insight and understandings to other members of their groups. In the face-to-face environment, this was more easily facilitated by the instructor, while the

online discussion environment posed new challenges. Booth and Hülten (2003) found that left alone, the groups took on their own foci. The instructor played an important role in direction and momentum of each group (Booth & Hülten, 2003).

Notably, if students are uncomfortable in a certain modality (camera on, mandatory participation in Zoom discussions), they may not fully contribute. While the results were just under the threshold for statistical significance ($p = .05$), it may be worth considering that male students, when compared to female students, reported being more comfortable discussing equity issues with their cameras on. Further research is recommended with a larger sample, as the small sample in the current study reduces the likelihood of finding statistically significant results.

The research around cameras and Zoom is ongoing, with evidence indicating that requiring cameras on is inequitable and can lead to discomfort for some students (Castelli & Sarvary, 2021; Reich et. al, 2020). Reich et al. (2020) provide an overview of caveats for Zoom-based learning. Geared toward K-12 education, the primary concerns are access to technology and students who do not turn on their cameras because of their home and living situations. These same concerns are also relevant in college. New strategies to encourage students to keep cameras on have been suggested (Castelli & Sarvary, 2021); however, there is a lack of research regarding differences in preference based on race, gender, or situation. In their study of 312 students in a Zoom-based undergraduate biology class, Casteli and Sarvary found a variety of reasons that students keep their cameras off. Students were mostly concerned about their appearance and whether or not others had their cameras on. The researchers suggested strategies to support cameras being on, while not overtly requiring them as part of the course. Some

suggestions included frequent breaks and active learning strategies. It should be noted, however, that the Castelli and Sarvary study was set in a biology class, with long lab times, so their results may not apply to the setting on which I focused in this dissertation.

Students need to dialogue and connect with a wide variety of classmates to form new beliefs and understandings (Bryant & Bates, 2015; Cabrera et al., 2002). Students in face-to-face classrooms can do this by participating in large group discussions. In a study of online learning, Gillis and Krull (2020) found that students perceived their learning to be more effective when they were able to discuss and interact during synchronous online sessions. In their study of their four undergraduate sociology classes, they found that how each faculty member facilitated learning had an impact on students' perceived connectedness, engagement, and fulfillment in the course. Using a variety of strategies and differentiation of pedagogical methods was also noted by students to be effective in promoting their participation.

One faculty member I interviewed mentioned "reframing" how we see participation. Instead of verbally contributing in large groups, students shared that they preferred to use breakout rooms. My dissertation study also found that a strong majority of students who responded to the survey prefer the use of breakout rooms (90%) and an open-ended response style (77%) when engaging in discussion. Rather than change groups several times during class, students suggested feeling more comfortable in the same groups for the whole period. Additionally, they indicated that groups that remained consistent over the semester provided them an opportunity for connection, and thus more confidence to participate in class discussions. This finding is consistent with the findings of Cabrera et al. (2002), who, in a study of 2,050 students at 23 separate institutions,

found that building collaborative frameworks in a classroom had a significant impact (r = 0.235) on students' openness to diverse perspectives. Cabrera et al. (2002) suggest building collaborative frameworks through co-operative learning techniques, such as group projects, class discussion, and groups that work together outside of class time. Notably, a significant finding was that Students of Color preferred collaborative learning techniques more than White students (Cabrera et al., 2002).

The use of the Zoom "chat" feature (71%) and a Relaxed Classroom style (58%) also were preferred strategies to promote discussion around equity. Respondents indicated that the personal approach of the instructor impacted the degree to which students participated in deep, difficult discussions around equity. Interview and survey data provided supporting evidence that a relaxed classroom style and an atmosphere of trust, built through connection, encouraged students to participate. Respondents indicated that instructors fostered this atmosphere by modeling vulnerability, and indicated that their perception of an instructor's holding a non-judgmental attitude was also a factor. This finding aligns with prior research. Increased student-faculty interaction, whether it is through showing that they care about students, through email or timely feedback, and creating a caring respectful environment, have been shown to increase student engagement in discussions during online classes (Billings et al., 2001; Thurmond et al., 2002).

In a study of 552 nursing students, Billings et al. (2001) found that when students were able to access discussion boards, and received frequent emails or feedback from instructors, they were more connected to the course work. Thurmond et al. (2002) studied inputs and student output in web-based nursing courses, to find out if the in-class web-

based environment impacted their learning. Using a sample of 120 nursing students, they found that timely comments from instructors and the use of a variety of teaching and assessment techniques improved student learning and interaction with the material. The feeling that the instructors knew them was also an important factor. These findings align with the results of my study.

Students surveyed indicated that discussion boards, external to the class, with positive, personal written feedback from instructors had a positive impact on their in-class participation in discussions. Forty percent of students reported that instructor check-ins with the class supported their participation in class discussions about equity. This finding aligns with the research of Dyer et al. (2018), who found instructors who try to be as open and accessible as possible, by, for example, attaching personal feedback to discussion boards, encourage student participation and connection to a greater degree. In their meta-analysis, Dyer et al. (2018) noted that approximating proximity is important to building and maintaining relationships online. The use of learning communities, such as group work, timely feedback, and discussion boards were the most relevant methods for instructors to develop a classroom community. Again, this discovery aligns with my findings in the survey and interviews.

Students and instructors interact throughout the class period and the semester. Each class and class session are a separate entity, and the interactions therein create the learning and the overall experience for the students (Booth & Hülten, 2003; Burge, 1994). Each session, each discussion time, may take a different form based on the topic and student comfort. The fleeting nature of engagement and comfort, of a discussion that evolves from difficult material and brings students to a new understanding, has been

made vivid in the Zoom environment. During a face-to-face class, instructors can seek to recapture moments of comfort or bravery—however, online, with cameras off, students can be fully engaged one minute and uncomfortable and retreating the next. The instructor may not be able to recreate the discussion and may not be aware of how or why the moment passed. Establishing and maintaining a social, interactive presence in the learning environment is a challenge for online Zoom instructors.

Contributions to Practice

My study found that Students of Color differ significantly from White students in their comfort during discussions of equity in online Zoom classes. Their voices are critically important, so instructors must find ways to incorporate them into discussions while honoring their preferences. It is important to note that each individual student has different needs and spaces where they feel like they can speak up. The significance of this study is that it provides some evidence in support of strategies that can used as starting points to promote an inclusive space for all students to participate.

Students need to be seen, heard, and recognized, even if their camera is off. The survey data suggests that students appreciate and use a variety of ways to contribute. Zoom-based pedagogy and strategies are different in form than face-to-face pedagogies. They may take place in small breakout rooms, a chat board, or on more personal discussion board spaces. Some students prefer the anonymity of apps like Google Jamboard, where they can post discussion comments without identifying themselves to the whole class. As noted above in Thurmond et al., the use of a variety of instructional and assessment strategies is significant in promoting student engagement in learning. The data around this wide variety of preferences is clear in this dissertation and reflects the

data-based principles of Universal Design for Learning (UDL) and the theory of constructionism (www.cast.org, 2021). The principles of UDL include multiple methods of presentation of learning material, a variety of modalities for student response and discussion, and the use of assessments that reflect this multi-modal approach. Building learning through a variety of strategies is important in both face-to-face and online learning.

Using discussion boards to form relationships with students and to encourage them to participate in class is a relatively new practice. Building of relationships in an online course does not take place before class or during a break—since screens go blank and microphones go mute. Facilitating conversations and interactions that are more personal and break down the barriers that the technology creates are important. Opening avenues for instructors and students to share, provide feedback, and note connections that they might otherwise not be able to do over Zoom were noted as critical to creating a positive environment. Alternate methods to simulate the interpersonal connections created in face-to-face classes were mentioned by both students and faculty surveyed. Other ideas included: keeping groups the same during class time and creating other groups that work together throughout the semester. During synchronous Zoom classes, we are asking students to contribute openly to a screen, to a group of students they have never seen and may never meet. Some students may not speak, so even their voices are foreign to others. Connecting as "humans" helps create a space for constructing new knowledge.

Contributions to Theory

A new constructivism, a new building of knowledge that takes place on Zoom, is emerging. Using a lens that investigates classes where some of the most intense, possibly life-changing discussions can take place, sharpens this focus. Students are building and creating knowledge together, and they are using new tools to do this. Anonymous posting boards, a chat so that students do not need to speak out loud, and the safety of keeping a camera off if they want to are all emerging pedagogical tools of the new Zoom constructivism.

Zoom based pedagogy and constructivist practice are emerging fields of study. More research in this area is needed to uncover what strategies are best in each modality. It may be that we cannot use the same strategies and practices as we do in a face-to-face classroom. The use of non-verbal forms of discussion and communication are preferences of the students surveyed in this study. Allowing a space for written feedback, and student expression through the use of discussion boards and response papers also promotes student engagement in learning and discussion. This is enhanced by direct instructor feedback. This nascent research holds interesting implications for instructors teaching in online synchronous classes, most pointedly those which are seminar or discussion-based. Using evidence-based strategies that promote and facilitate greater student connection and involvement in discussions is important to developing and recognizing a pedagogy specific to online synchronous learning.

Limitations

As a mixed-methods participatory action research study, there are limitations to this dissertation. The main limitations include selection bias, instrumentation, and history. The site and classrooms were part of a convenience sample. The sample was limited to

the number of classes that were available in an online synchronous format. Each class was capped at 35 students; however, none of the classes were full. They survey was sent to five classes, consisting of 121 students total. Of these, 48 students responded, providing a response rate of 39%. Of the participating faculty, 3 of 5, (including myself) provided interview and artifact data for this dissertation. Interviews were conducted with only five students. The opportunity of an interview was offered to all of the students who took the survey. The interview sample may not be representative; however, the comment section of the survey allowed for open-ended feedback from all students.

This convenience sample and relatively small sample size, as well as the relatively low response rate to the survey and even smaller number of students willing to be interviewed suggest caution is warranted in trying to generalize the results of this study. Thus, although the findings are interesting, they should be viewed as initial and exploratory in nature. There is a need for additional studies to help provide evidence of generalizability of the findings.

Instrumentation is another limitation of this study. Interview data are based on personal experience and may not be transferable to other settings. The sample size for the survey is small, allowing for a greater margin of error, and decreased statistical power. The students surveyed may have been impacted in their perceptions by a personal issue with other classmates or the instructors. Other issues not surveyed may have impacted some of the responses. The survey and interview instruments themselves are limitations. Each one was designed by me and aligned with the research questions. The survey has face and content validity; however, it would be important to validate the survey with a

principal components analysis to further solidify the validity of the instrument if it were to be used in future research.

History is another threat to validity that should not be overlooked in this study. This study took place from November 2020 to March 2021, during the COVID-19 pandemic and during a time period when racial tensions and bias in policing in the United States were receiving a great deal of media attention. During this time, there was heightened awareness about racial equity and the role of oppressive structures in the United States. Divisive politics, a highly contested Presidential election, which included rhetoric around the existence of racism in the United States, was widely in the media. The voices of Black Lives Matter and other anti-oppression and anti-racism scholars were also being heard and recognized more widely. Additionally, an insurrection at the U.S. Capitol, with racist overtones, took place just prior to the new President being sworn in, and very close to the time when my survey was sent out. These unprecedented events may have influenced response to the survey, both in terms of sample size and the data collected.

Creswell (2003), refers to triangulation as the integration of data in a mixed methods study. The data collected from the surveys, open ended-comments, and interviews were triangulated to determine relevance and to validate and substantiate all data collected. The value of triangulation in a mixed-methods study is to enhance and enrich the material collected. In this study, triangulation was accomplished through use of a survey focused on the research questions in conjunction with interviews of both students and instructors. These multiple sources of data, allowed connections to the theoretical perspective to take form. Creswell (2003) states that the theoretical

perspective can emerge from the research or be a frame to evaluate the research. My theoretical perspective, posited in the literature review, involved the interaction of students with each other, with the material, and with the instructor to form new connections and derive meaning from the readings and class periods (Booth & Hülten, 200; Burge, 1994). This is a theme that emerged from the survey and interview data. The interconnectedness of each person in the class, and how they influence the learning and experience of each other was evident in the research. The importance of these connections was confirmed by the survey and interview data collected.

Future Research Directions

Future research directions include a large-scale study of students and camera use, specifically focused on classes where the content addresses equity. The option to keep cameras on or off, especially in a whole class discussion, requires further research. A much larger sample, and a variety of classrooms and levels might provide insight into the findings reported here. Additionally, the focus of each class (biology, math, equity) may have an impact on the use of cameras and why students choose to leave them on or off.

The application of Activity Theory to the Zoom-based synchronous classroom is also an area ripe for additional research. The cycle of reflection, discussion, and analysis that is the basis of Activity Theory was evident in the results of this research. The method for accomplishing this online requires a different set of strategies and pedagogy that warrants future study.

The way that students interact online to form new learnings could prove to be vastly different from the way they learn face-to-face. The in-class discussion model, applied to Zoom is still evolving and undergoing changes. Facilitating these interactions

and studying methods of enhancing them yield important information about pedagogy in this environment. The instructor is the facilitator of learning in these environments, yet in some sense has less control over the outcomes. To improve and build on a Zoom-based pedagogy, more research is needed. This study is just a starting point, and students and instructors are just starting to become proficient at accessing Zoom-based synchronous learning.

Students noted the use of discussion boards and instructor feedback. Specific research into each of these forms of communication is recommended. The quality and quantity of feedback and the timing of feedback would all be areas of focus for this research. Additionally, the nature of the feedback, be it positive, negative, or neutral should also be studied. Again, this should be subject-specific research. It may be that students who will respond to a math-related discussion board may not respond the same way to one about equity and race.

Research into the impact of written feedback on asynchronous discussion boards and the relationship between this and student connection and participation could yield important information about how and when we respond to students. Looking as these discussion boards as important tools of connection and motivation may change how instructors see and use them. Investigating this element—how instructors see and use discussion boards, and whether they are used as a tool, a check in, to develop classroom community, or a combination would also be a study of interest. This dissertation, in asking more questions than it answers, provides a framework for researchers to investigate these ideas more deeply.

Appendix A

Research Project Survey

Please respond as accurately as you can with your perceptions.

1.

I feel better able to express myself in difficult conversations about race and equity when I keep my camera on during discussion.

Mark only one oval.

Strongly disagree
Disagree
Neutral
Agree
Strongly Agree
Decline to respond

2.

I feel better able to express myself and my views in conversations focused on equity issues during asynchronous sessions with online discussion boards, versus synchronous sessions with conversation.

Mark only one oval.

Strongly disagree
Disagree
Neutral
Agree
Strongly Agree

3.

I feel better able to express myself and my views in conversations focused on equity during face to face in class sessions.

Mark only one oval.

Strongly disagree
Disagree
Neutral
Agree
Strongly Agree

4.

I feel better able to express myself and my views in conversations focused on equity issues during synchronous sessions and conversation versus asynchronous sessions with online discussion boards.

Mark only one oval.

Strongly disagree
Disagree
Neutral

Agree
Strongly Agree
5.
I feel better able to express myself in difficult conversations about race and equity when I keep my camera off during discussion.
Mark only one oval.
Strongly disagree
Disagree
Neutral
Agree
Strongly Agree
Decline to respond
6.
I feel comfortable discussing equity issues such as racism, genderism and sexism in online synchronous class settings.
Mark only one oval.
Strongly disagree
Disagree
Neutral
Agree
Strongly agree
Decline to respond
7.
I only feel comfortable discussing topics such as racism in certain online synchronous classes.
Mark only one oval.
Strongly disagree
Disagree
Neutral
Agree
Strongly agree
Decline to respond
8.
I feel like I can express myself fully when discussing and reflecting on equity issues such as racism, sexism, ableism and genderism.
Mark only one oval.
Strongly disagree
Disagree
Neutral
Agree
Strongly agree
Decline to respond

9.

I can only express myself or talk comfortably in small groups
Mark only one oval.
Strongly disagree
Disagree
Neutral
Agree
Strongly Agree
Decline to respond
10.

The instructor creates an environment that encourages open discussion.
Mark only one oval.
Strongly disagree
Disagree
Neutral
Agree
Strongly Agree
Decline to respond
11.

I feel most comfortable when I can use the chat function to express myself
Mark only one oval.
Strongly disagree
Disagree
Neutral
Agree
Strongly Agree
Please respond as completely as you can to each question.
12.

Do you feel like you can talk about deep issues of equity and social justice in your class?
Mark only one oval.
Yes
No
Maybe
13.

If you answered no, what are the barriers to this?
14.

If you answered yes, why? What takes place in class that promotes these discussions?
15.

Did the instructor use certain strategies to promote discussions?
Mark only one oval.
Yes

No
Not sure
16.
If you answered yes to the question above, which of the following strategies did the instructor employ? Check all that apply.
Check all that apply.
break out session
class check ins
required camera on
discussion board
chat
open ended response style (chat, discussion or verbal)
shortened lectures
video lectures with in class discussion
frequent reminders and emails
many classroom rules
relaxed classroom style
set norms for discussion
Other:
17.
How does the instructor handle discussion about racism, ableism, genderism or sexism?
18.
What keeps you engaged in the class? Check all that apply.
Check all that apply.
the pacing
frequent breaks
many small discussion groups
the topics we discuss
the instructor monitors us
my own motivation
tech tools
Other:
19.
What makes it difficult to participate? Please check all that apply.
Check all that apply.
when I am not sure of the topic
when I don't feel comfortable
when I can't see the other students
when I have to turn on my camera
when I have to verbalize in the large group
when I am concerned that my ideas might be different than the groups
When I think what I am going to say is different than what the instructor wants to hear

20.

How can the instructor better facilitate your involvement in the class?

Demographic information

Please share the following information as you feel comfortable.

21.

Age Range

Mark only one oval.

18-24
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65 and above
I prefer not to state

22.

Gender

Mark only one oval.

Female
Male
Non-binary
Other
I prefer not to say

23.

Race (select all that apply)

Check all that apply.

Hispanic or Latinx
American Indian
Alaska Native
Native Hawaiian or Pacific Islander
Black or African American
White
Other
I prefer not to state

REFERENCES CITED

Abdal-Haqq, I. (1998). *Constructivism in teacher education: Considerations for those who would link practice to theory.* ERIC Digest.

Billings, D. M., Connors, H. R., & Skiba, D. J. (2001). Benchmarking best practices in web-based nursing courses. *Advances in Nursing Science, 23*(3), 41-52.

Birt, L., Scott, S., Cavers, D., Campbell, C., Walter, F. (2016). Member checking: A tool to enhance trustworthiness or merely a tool for validation?

Booth, S., & Hülten, M. (2003). Opening dimensions of variation: An empirical study of learning in a web-based discussion. *Instructional Science, 31*(1/2), 65-86. Retrieved November 8, 2020, from http://www.jstor.org/stable/41953607

Browne, K. (2004). Genderism and the bathroom problem:(Re) materialising sexed sites, (re) creating sexed bodies. *Gender, Place & Culture*, *11*(3), 331-346.

Burge, E. J. (1994). Learning in computer conferenced contexts: The learners' perspective. *Journal of Distance Education*, *9*(1), 19-43.

Cabrera, A. F., Crissman, J. L., Bernal, E. M., Nora, A., Terenzini, P. T., & Pascarella, E. T. (2002). Collaborative learning: Its impact on college students' development and diversity. *Journal of College Student Development*, *43*(1), 20-34.

Castelli, F.R., & Sarvary, M.A.(2021). Why students do not turn on their video cameras during online classes and an equitable and inclusive plan to encourage them to do so. *Ecology and Evolution*. *11*, 565– 3576. https://doi.org/10.1002/ece3.7123

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among the five approaches.* Sage.

Dinkelman, T. (2003). Self-study in teacher education: A means and ends tool for promoting reflective reaching. *Journal of Teacher Education*, *54*(1), 6–18. https://doi.org/10.1177/0022487102238654

DiPietro, M.; Ferdig, R.E.; Black, E.W.; & Presto, M. (2010). Best practices in teaching K-12 Online: Lessons learned from Michigan Virtual School Teachers. *Journal of Interactive Online Learning 9*(3), 10-35. Retrieved from http://digitalcommons.kent.edu/ldespubs/20

Dogan, U. (2015). Student engagement, academic self-efficacy, and academic motivation as predictors of academic performance. *The Anthropologist, 20*(3), 553-561.

Dumford, A. D., & Miller, A. L. (2018). Online learning in higher education: exploring advantages and disadvantages for engagement. *Journal of Computing in Higher Education*, *30*(3), 452-465.

Dyer, T., Aroz, J., & Larson, E. (2018). Proximity in the online classroom: Engagement, relationships, and personalization. *Journal of Instructional Research, 7*, 108-118.

Engeström, Y. (2001) Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work,14*(1),133-156.

Engeström, Y. (2015). Learning by expanding (2nd. ed.). New York, NY: Cambridge University.

Gillis, A., & Krull, L. M. (2020). COVID-19 Remote learning transition in Spring 2020: Class structures, student perceptions, and inequality in college courses. *Teaching Sociology, 48*(4), 283–299. https://doi.org/10.1177/0092055X20954263

GLSEN. (2020). *GLSEN: Key concepts and terms.* www.glsen.org. Retrieved from: https://www.glsen.org/sites/default/files/2020-04/GLSEN%20Terms%20and%20Concepts%20Thematic.pdf

Hehir, T. (2002). Eliminating ableism in education. *Harvard Educational Review, 72*(1), 1-33.

Holmes, J. M., & Weaver, K. E. (2020). The sum of all things: Forming course assessments to promote equity and deep learning. *New Directions for Teaching and Learning*, *2020*(164), 57-64.

Iqbal, M. (2020) Zoom revenue and user statistics, 2020. *Business of Apps,* Oct. 30, 2020. https://www.businessofapps.com/data/zoom-statistics/

Kemmis, S., McTaggart, R., & Nixon, R. (2013). *The action research planner: Doing critical participatory action research*. Springer Science & Business Media.

Kuh, G. D. (2001). The National Survey of Student Engagement: Conceptual framework and overview of psychometric properties.

Marshall, C. & Rossman, G. B. (2011). *Designing qualitative research*. Sage.

Martin, R. J., & Van Gunten, D. M. (2002). Reflected identities: Applying positionality and multicultural social reconstructionism in teacher education. *Journal of Teacher Education*, *53*(1), 44–54. https://doi.org/10.1177/0022487102053001005

Molnar, M. (2020, July 9). *Number of ed-tech tools in use has jumped 90 percent since school closures*. Market Brief. https://marketbrief.edweek.org/marketplace-k-12/access-ed-tech-toolsjumped-90-percent-since-school-closures/.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research. Volume 2*. Jossey-Bass.

Reich, J., Buttimer, C.J., Coleman, D., Colwell, R.D., Faruqi, F., & Larke, L.R. (2020, July 22). What's lost, what's left, what's next: Lessons learned from the lived experiences of teachers during the 2020 novel coronavirus pandemic. https://doi.org/10.35542/osf.io/8exp9

Russell, D. (1995). Activity theory and its implications for writing instruction. *Reconceiving writing, rethinking writing instruction,* 51-77.

Sannino, A., Engeström, Y. & Lemos, M. (2016) Formative interventions for expansive learning and transformative agency. *Journal of the Learning Sciences, 25*(4). 599-633, DOI: 10.1080/10508406.2016.1204547

Scanlon, E., & Issroff, K. (2005). Activity theory and higher education: Evaluating learning technologies. *Journal of Computer Assisted Learning*, *21*(6), 430-439.

Serhan, D. (2020). Transitioning from face-to-face to remote learning: Students' attitudes and perceptions of using Zoom during COVID-19 pandemic. *International Journal of Technology in Education and Science (IJTES), 4*(4), 335-342. DOI: https://doi.org/10.46328/ijtes.v4i4.148

Superville, D. R. (2020, June 30). *Hybrid school schedules: More flexibility; big logistical challenges.* Education Week. https://www.edweek.org/ew/articles/2020/06/25/hybrid-schoolschedules-more-flexibility-big-logistical.html.

Tatum, B. (1997). *Why are all the Black kids sitting together in the cafeteria?: and other conversations about race.* Basic Books.

Thurmond, V. A., Wambach, K., Connors, H. R., & Frey, B. B. (2002). Evaluation of student satisfaction: Determining the impact of a web-based environment by controlling for student characteristics. *The American journal of distance education*, *16*(3), 169-190.

Vrasidas, C., & McIsaac, M. S. (1999). Factors influencing interaction in an online course. *American Journal of Distance Education*, *13*(3), 22-36**.**

Yazan, B. (2015). Three approaches to case study methods in education: Yin, Merriam, and Stake. *The Qualitative Report*, *20*(2), 134-152. Retrieved from https://nsuworks.nova.edu/tqr/vol20/iss2/12