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Care to Engage: Increasing Engagement Through Authentic Care

An Action Research Project

Presented to

The Faculty of the Kalmanovitz School of Education

Saint Mary's College of California

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Teaching Leadership

By

Jil Assefa

Spring 2021

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This action research project, written under the direction of the candidate's master's project advisory committee and approved by members of the committee, has been presented to and accepted by the faculty of the Kalmanovitz School of Education, in partial fulfillment of the requirements for the Master of Arts in Teaching Leadership degree.

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Abstract

Care to Engage: Increasing Engagement Through Authentic Care

By
Jil Assefa
Master of Arts in Teaching Leadership
Saint Mary's College of California, 2021
Christine Reimer, Research Advisor

Research shows that engagement declines as students progress through school and this has been exasperated during distance learning due to the COVID-19 pandemic. Research has also shown that strong and trusting student-teacher relationships improves students' engagement in their education. Distance learning made developing strong relationships with my students very difficult at a time when many of them had expressed feelings of isolation. This made it even more important to be intentional about implementing strategies to show care. The goal of this research project was to determine whether strategies to show authentic care (Valenzuela, 1999) for students would increase their levels of engagement. Students participated in this 10-week study in a suburban school where explicit strategies were implemented to show authentic care.

Dedication

This project is dedicated to my mom, who has always believed in me and encouraged me through every step of my education. Mom, I know you are looking down on me from heaven and are proud of this accomplishment. Thank you for making me strong.

And to my dad, who taught me the value of hard work. Thank you both for all your support. I love you.

And finally, to my husband and sons, who had to deal with a missing wife and mom during parts of this project. Thank you for being so flexible and understanding. I love you all.

Acknowledgements

There were many who made this project possible that I would like to acknowledge for their contributions.

First, my MATL cohort, we did it! We picked the worst time to join this program, the year of the pandemic, the year of isolation, the year of virtual learning. This year was difficult to say the least, but each week when we met, it was like a breath of fresh air. We all received renewed strength to get through the next two weeks until we met again. Thank you for sharing your stories, perspectives, and hearts with me throughout our program together.

One particular member of our cohort was especially supportive throughout this project. Parisa Lindgren, thank you for always being there when I needed you, both as a colleague and a friend. You make collaboration easy and you are always so positive and encouraging. I will miss creating amazing slide deck presentations in minutes with you.

My appreciation to Kellie Judson, who without your prompting, I may have not applied to the St. Mary's MATL program, at least not this soon. You have been there from the beginning of my teaching career and your friendship means so much to me. Your continued support, both professionally and personally, is invaluable.

Thank you to my research advisor, Christine Reimer, who provided such helpful feedback, as well as support and patience during one of the most difficult events in my life. It was so valuable to know that I could depend on you.

Dr. Lane, I appreciate your perspective on all things. You are so inspiring and your philosophy of teaching and care for learners, especially the historically underserved, is what I strive to practice.

Finally, Dr. Rambo, thank you for your support and understanding attitude during this unprecedented year of teaching and learning. It was evident that you always wanted to do what was best for us, your students.

Table of Contents

Page

List of Figures

Figure

List of Tables

Table

Chapter 1

Introduction

As a high school teacher of mathematics, there are always a handful of students in every class who are not successful. One of the reasons for this lack of success is they often enter a class lacking the prerequisite skills needed to be successful. Another reason is that they do not see themselves in math heavy college majors or career paths and are therefore uninterested. Additionally, there is a sentiment that many of these students have that they just cannot do math. Regardless of the reason for their lack of success, one thing most of them have in common is their lack of engagement. This lack of engagement in high school is not unique to mathematics classes, however, it seems to be a common trend. This should concern students, parents, teachers, and school administrators because according to James Brown, the executive director of the STEM Education Coalition in Washington, D.C., "the future of the economy is in STEM.… That's where the jobs of tomorrow will be" (Vilorio, 2014, p. 3). Something heard countless times from the mouths of students is "why do I need to know this?" or "when am I ever going to use this?" These types of questions show that students struggle to see the relevance of what they are learning to their lives. While I could respond with how the process of tackling math problems develops perseverance or grit or that the logic that is used when solving problems can also be used to make important life decisions, these broad responses don't suddenly change student perceptions of the value of what they are learning.

Instead, there are other ways to improve students' engagement in their education. Data in Chhuon & Wallace's (2014) study repeatedly showed that many students felt that their teachers have an apathetic view regarding their jobs and lack effort in creating meaningful relationships with their students. Other research showed these student perceptions of negative relationships

with their teachers resulted in lower levels of engagement, but also when students had more positive relationships with their teachers than negative, they had higher levels of engagement *across* subject areas (Martin & Collie, 2019). Students whose teachers intentionally implemented strategies to build trust with them were successful in getting disengaged and disinterested students to actively participate in their learning (Ennis & McCauley, 2002). Another study revealed students engaged in their education if they first felt valued for who they are and all the cultural capital they bring to the classroom, especially when it is not typically valued (Liou, Martinez, & Rotherham-Fuller, 2016). Therefore, I intended to determine whether intentionally implementing strategies to build authentic, caring relationships with my students will result in higher levels of engagement.

Statement of the Problem

It is the desire of the best educators that their classrooms be a place where students feel safe and cared for as people first and students second. While it is not difficult to be effective at creating this for some students, it is not an easy task to create it for all students. It has been my experience that students who excel in math feel valued in mathematics classes. Additionally, those students with whom educators have things in common or make easy connections with also feel valued. Unfortunately for students of color, most teachers are white and therefore do not share their culture or ethnicity (National Center for Education Statistics, 2020). This makes it less likely that these natural connections happen for students of color; therefore, creating another huge barrier to equity in education. Additionally, students who disengage in school from the beginning make it difficult for educators to establish positive relationships with them; the relationship is likely to be neutral at best. According to research by Wilkins (2004), teachers reported that they could have relationships with any student who showed effort, however they

lacked motivation to build relationships with students whose behavior was not ideal in their opinion.

It is not surprising then, that the students with whom the connections do not come naturally are often the same students who do not engage or show minimal engagement with their education. As shown by Chhuon & Wallace's (2014) research, when students perceived that their teachers do not care, they were less likely to engage in the learning process. This lack of engagement leads to unfavorable educational outcomes. For marginalized student populations, it makes an even stronger case for the need to value them for who they are and all the cultural capital they bring with them to the classroom (Yosso, 2005). For instance, Yosso contends that there are several types of capital that contribute to the community cultural wealth Students of Color bring to school, including *aspirational capital*, *familial capital*, *social capital*, *linguistic capital*, *resistant capital*, and *navigational capital*. Unfortunately for students of color, the school system, like the larger system it is a part of, is based on the values and traditions of White middle-class culture. In order to celebrate the cultural capital that all students bring, we must first identify it by getting to know them.

Even when student perceptions are such that their teachers do not care for them, it is likely that a majority of teachers do care about their students. There are many things pulling at a teacher's time. Parents' expectations and content standards are some of what teachers need to consider when planning their classroom agendas. Also, the pandemic this year placed an additional burden on teachers to convert all of their resources and teaching methods to online platforms. The most basic level of strategies implemented to inform students of an educator's care for them consist of regular reminders that they are available for academic support. However, in research by McHugh et al. (2013), students reported this dialogue is likely supporting the

narrative that educators only care about students' academic success, but will not necessarily be interpreted as genuine care for them. Lane (In Press) further asserts that educators often display inauthentic forms of caring. The urban students of color in her study felt that their teachers did not deem them worthy of investment. Valenzuela (1999) concluded this as well in her research. She recognized that schools are structured in such a way as to subtract students' cultural identities from them so they can attain success. But instead, Valenzuela (2016, p. 263) suggests that educators "embrace a more authentically caring ideology and practice."

Purpose of the Research

The purpose of this action research project was to implement relationship building strategies with students to create stronger and more positive relationships and motivate youth to engage in their education. This study was originally planned to occur in the classroom, however due to the COVID pandemic, students were learning remotely for the entirety of the research. Therefore, putting these strategies into practice became even more important because many students struggled during the long period of isolation and many teachers found it difficult to feel connected to their students while teaching remotely. When I think back on my own high school educational experience, I do not remember many specific memories of the time spent in classrooms, but I do have one memory that has stuck with me all these years. I recall from my tenth-grade year I had a teacher who gave us her home phone number (cell phones had not been invented yet). She told us that if we ever needed her for any reason, if we got into trouble or in a situation where we needed a ride home and had no one to call, that we could call her at any time. Even if it was in the middle of the night, she would be there for us. When I think back to high school, I do not recall many memories of what went on inside the classroom, but I remember this specific incident and the teacher that cared about me. Her conversation with our class had

nothing to do with learning the content she would be teaching. It was only about making sure that we knew she cared about us, regardless of our performance in her class. This is a good example of cultivating a positive teacher student relationship that clearly had an impact, much like I want to create with my students.

The science of learning shows that there is a strong connection between students' potential learning and their relationships, both positively and negatively (Cantor, 2019). Students' brains change in response to relationships and experiences and since their brains are still developing, we have the great responsibility to play an active part in forming strong, positive connections with them. Cantor (2019) states, "When we're able to combine social, emotional, affective, and cognitive development together we are creating many, many more interconnections in the developing brain that enable children to accelerate learning and development" (1:57). They go on to say, "When a strong relationship exists with a teacher, with a mentor, with an advisor, with a school administrator, it actually can reverse the effects of adverse experiences" (2:52). Furthermore, according to research by Capone et al. (2018), the more positive interactions students have with their teachers, the more likely they are to strengthen their relationships with other students in the classroom as well as engage with the content that is being taught.

This assertion is further supported by a study conducted with high school students in Australia by Martin & Collie (2019), which showed that when students had more positive teacher student relationships than negative, they had higher levels of engagement in school. The results of this study also showed that the positive teacher student relationships seemed to impact their engagement overall and the negative teacher student relationships did not have a negative impact to the same degree (Martin & Collie, 2019). Moreover, Du Plessis' (2019) research

showed that when teachers create a classroom culture where all students feel valued, strong teacher-student relationships similar to mentor-mentee relationships were built and this led to higher levels of student engagement and improved academic performance. This is further supported by a study that showed strong mentor-mentee relationships between teachers and students in which the teacher highlights the different assets a student brings to the classroom leads to higher levels of student engagement and positive academic results (Liou et al., 2016). It is only when students feel "valued and respected" that they will be bold enough to share their story and fully engage in their education (Green, 2012, p. 14).

Additionally, research by McHugh et al. (2013) in several urban high schools around the U.S. concluded that teachers have the power to build both "bridges and barriers" in their relationships with their students. Data were primarily collected through focus groups that consisted of about 6 participants who were selected from community programs in Minneapolis, Minnesota, Los Angeles, California, and Pittsburgh, Pennsylvania. This study reiterated the importance of the teacher's effort in approaching and engaging with the student in order for the student to perceive that teachers knew or cared about them. One student stated, "asking students about their day, paying attention to student concerns, and respecting student needs," was how he knew his teacher cared (McHugh et al., 2013, p. 21).

The evidence is clear that strong positive relationships are an important factor in student learning. These findings show the important role that teachers play in developing positive relationships with their students. Research shows that students whose teachers intentionally implemented strategies to build trust with their students were successful in getting disengaged and disinterested students to actively participate in their learning (Ennis et al., 2002). It is an educator's job to provide the best learning opportunities possible. Therefore, it is imperative that

we make every attempt to create strong positive relationships with our students, especially youth from historically underserved backgrounds. This study is intended to examine the effectiveness of creating stronger teacher-student relationships on engagement for the most disengaged students in the remote learning environment.

Action Research Question

The action research question in this study was: *How does the implementation of strategies to garner stronger relationships with my students affect their engagement in my Algebra 2 classes?* The expectation is that by researching, planning, and implementing strategies and activities designed to build strong, positive, and supportive relationships with my students, they will know and feel that I care about them as people, and not just care about their performance in my class. This in turn will motivate them to engage in the learning process in my class.

Limitations

There were several limitations to this study that may have impacted its conclusions. These included online learning, time constraints, small sample of participants, and my dual role as teacher-researcher. The most notable of these limitations is the unfortunate circumstance of teaching remotely due to the COVID 19 virus and, therefore, the inability to engage in an in-person classroom setting. Creating strong relationships with students is especially challenging given the online format. Conducting classes via videoconferencing platforms created a large disconnect between the teacher and their students. It is much easier for students to become distracted by what is around them and they are unable to be held accountable by a teacher like they would be if classes were being held in the classroom. This not only made it more difficult

for me to create bonds with my students, but it also made it more difficult for students to engage in their education.

Additionally, this research was conducted over a short 10-week period. The short time period may not give accurate result due to the fact that it takes time to build relationships with students, especially in the remote teaching model. Additionally, the data were collected over a short period of time which therefore may not reflect the full picture of any impact the relationship building strategies may have had. Also, with such a small sample size of participants, it may be difficult to generalize the results to other populations, students, and schools. Finally, my role as both teacher and researcher may have impacted some student responses to the Google form questions, even though I specifically stated that their responses would not count for or against them in any way. Regardless of this disclaimer, students may feel revealing a low level of engagement to their teacher would be held against them in the future. Conversely, students may exaggerate their true level of engagement in order to impress me in hopes that it will impact their grade or my perception of them positively.

Positionality of the Researcher

As a teacher it is easy to engage with students who actively participate in your class. It is also easy to miss opportunities to engage with students who are not active participants. With the fast pace of the school day, it is common to fall into the routine of assuming that a student chooses not to engage and therefore *there is nothing that can be done* or *I cannot force a student to participate*. It is my natural perspective to assume I can only help those who want to be helped. But these are kids we are talking about, not adults. They have not always chosen the situations they are in that may be affecting their disengagement. Therefore, it is vital that throughout this research I consistently remind myself that my students' stories are not all the

same. To build authentic and strong relationships with them, I need to get to know their individual stories.

Additionally, given the number of students that I have, it is normal for a few students not to have success. I should not assume they are not trying. Furthermore, it may be understandable to allow this way of thinking to foster a lack of effort in my investment into their education. However, it is my job to ensure that I provide educational opportunities for all students in my classes. Ultimately, I want to meet each student where they are at and support them until they are successful in my class.

Finally, my own social identity as a white woman naturally reduces my experiences similar to students of color, and therefore possibly my chances of naturally forming relationships with them. Therefore, it is necessary to regularly reflect upon my thoughts and actions to be sure that I am engaging with and promoting my students of color and not continuing to reinforce the current system that frequently devalues them.

Definition of Terms

Cultural Capital

The knowledge, skills, and abilities that one possesses as a result of their culture. It is especially important to note that White middle-class culture has been the norm to which all other forms of culture has been judged and/or compared (Yosso, 2005).

Politicized Ethic of Care

A term coined by Dr. Monique Lane (In Press) used to describe the capacity that African American educators have "to draw from students' cultural frameworks, lived experiences, socio-emotional needs, and diverse learning styles. … demonstrated through an authentic form of

caring which includes love for one's community, othermothering, and teaching the whole child" (p. 10).

STEM

Science, technology, engineering, and math. It is often used to describe career paths and jobs, as well as high school and college majors (Vilorio, 2014).

Subtractive Schooling

A term used to describe the pedagogy many school systems use to educate U.S.-Mexican youth by "subtracting students' culture and language, which is consequential to their achievement and orientations towards school" (Valenzuela, 1999, p. 336).

Student Engagement

The action of a student participating in the tasks and activities designed to educate them (Lei et al., 2018). More specifically, "engaged students make a psychological investment in learning. They try hard to learn what school offers. They take pride not simply in earning the formal indicators of success (grades), but in understanding the material and incorporating or internalizing it in their lives" (Newman, F.M., 1992, p. 3).

Implications

The purpose of this study was to explore the impact of implementing strategies and activities that would help build stronger relationships with my students, in particular those least engaged, in order to increase their engagement in my Algebra 2 class. There are several studies that take place in urban settings that show that strong, positive teacher student relationships lead to higher levels of engagement. However, there is not a study in a suburban setting. Nor is there a study completed that occurred in a remote teaching setting. I want to explore the impact

creating these stronger relationships with my suburban students has on their engagement, especially during distance learning.

Chapter II

Literature Review

The purpose of this action research study is to improve student engagement by implementing strategies to build authentic relationships with high school Algebra 2 students. I used various methods for creating trusting and caring connections with students and specifically targeted learners who were less engaged.

"Student engagement refers to students being actively involved in their learning tasks and activities" (Lei et al., 2018, p. 517). Corso et al. defined engagement more specifically in terms of a student's thoughts, feelings, and actions of engagement in their education. Student engagement in mathematics is important for many reasons, including the prevalence of math in everyday life, critical thinking and reasoning skills, and the need for STEM employees, to name a few. Additionally, research indicates that engagement improves learning outcomes (Chase et al., 2014; Lei et al., 2018). Unfortunately, the decline of student engagement in high school, especially in mathematics, is a well-documented problem (Brenneman, 2019; Collier, 2015; Hodges, 2018; Newman, 1992; Ryan & Deci, 2020).

Some of the factors that research has shown to positively affect student engagement include a positive classroom community, valuing students' interests and opinions, and clear expectations. There are also factors that affect student engagement negatively, such as, performance-focused goals and speaking to students in a controlling manner (Ryan & Deci, 2020). However, research has shown that strong student-teacher relationships improved engagement in even the most non-engaged students (Martin & Collie, 2019). In previous research studies, implementing strategies to build trusting relationships where students felt valued for who they were, not only led to higher levels of engagement, but also improved

academic outcomes (Liou et al., 2016). This is especially important for our learners who have historically been marginalized by the system set up to value White culture and suppress the achievement of students of color. This guided me to my action research question: *How does the implementation of strategies to garner stronger relationships with my students affect their engagement in my Algebra 2 class?*

Overview of the Literature Review

This chapter provides an overview of the theories that are foundational to this research project. Next, I explore the research that has more recently been conducted showing the occurrence of student disengagement in their education as well as the factors that can affect student engagement. Finally, I examine the aspect that this research project focusses on, teacher student relationships, and how it can affect engagement.

This research project was based on two foundational theories: self-determination theory (Deci & Ryan, 2000) and Maslow's (1943) hierarchy of needs. Self-determination theory asserts that a person's decision-making is determined by their motivation which can be affected by a set of needs being met. Maslow's hierarchy of needs places needs in an order such that they must be met successively. The most basic needs like food and water are first and a person can progress through the physical needs to the psychological needs, and finally work on fulfilling their self-actualization needs (Maslow, 1943). Both of these theories support the notion that basic needs must be met before a person is motivated to meet other needs. Therefore, some of these needs must be met before a student will be able or willing to engage in their education.

Research showed that student engagement is declining in high schools across the United States (Brenneman, 2019; Collier, 2015; Hodges, 2018; Newman, 1992). Additional research has determined that a strong student-teacher relationship has a positive impact on student

engagement (Kelly & Zhang, 2016; Klem & Connell, 2004). Both studies done by Martin and Collie (2019) and by Ennis and McCauley (2002) demonstrate that when students had positive connections with their teachers, there were improvements in engagement. In the study by Ennis and McCauley (2002), teachers made the first move to establish trust and specifically targeted students who were failing and invested time in them both during class and before and after school. Additionally, research was done to determine how teachers can create strong trusting relationships with their students. Research by McHugh et al. (2013) showed that teachers who demonstrated authentic care for their students saw an increase in engagement even among their most disengaged students. Lastly, research by Liou et al. (2016) determined that teachers who valued students' cultural capital in the classroom saw higher levels of student engagement as a result. Yosso (2005) defines culture capital with an asset view as "the array of cultural knowledge, skills, abilities and contacts possessed by socially marginalized groups that often go unrecognized and unacknowledged" (p. 69).

Both ProSource and Education Source were used to find research for this project. Key words that were used to find this research included *student relationship* and *learning* and *high school* as well as *high school* and *classroom* and *community*. Also searched was *high school* and *teacher student relationships*. And finally, *student engagement* and *high school*.

Theoretical Rationale

The two foundational theories that provide a basis for my study include self-determination theory (Deci & Ryan, 2000) and Maslow's (1943) hierarchy of needs. In both theories, needs are placed in order from foundational needs to higher level needs. The lower level, most basic needs, must be met before a person has the desire to focus on the higher-level needs. Maslow's research introduces a hierarchy of needs, first physical, then psychological, and

finally self-fulfillment, that must be met in order for a person to be motivated to work on their next set of needs. Deci and Ryan's research focuses only on psychological needs and its role on a person's motivation in their choices (Deci & Ryan, 2008). My hope was to improve student-teacher relationships, and thereby contribute to meeting students' psychological needs. I hypothesized that meeting my learners' psychological needs would lead to an increase in student engagement.

Self-Determination Theory

The research question in this project was largely based on Edward Deci and Richard Ryan's Self-Determination Theory (1980). Self-determination theory discusses a person's motivation for the choices they make. When applied to education, the focus is a student's motivation for engagement in their learning. Deci and Ryan's initial research centered largely around internal and external motivation (1975). Intrinsic motivation is when a person is motivated by enjoyment or interest. The reason comes from within them. For example, students complete their Algebra assignment because they like math or they see it as relevant to their lives. Extrinsic motivation is to be motivated by a reward or to avoid punishment. In this case the motivation is coming from outside. The student completes their Algebra assignment because they want to earn the points or avoid punishment from their parents. Deci and Ryan (2008) began to see that these two types of motivation were not mutually exclusive, but could be cooperative. They found that people can internalize extrinsic motivation in such a way that they see the value in it so much so that they accept it as their own. If this is applied to education, by creating strong relationships with their students, teachers can provide an avenue for extrinsic motivation to occur in such a way that students internalize a motivation to engage in their learning. This was explored further in Deci and Ryan's later research.

After identifying intrinsic and extrinsic motivation, self-determination theory evolved to focus on three factors that affect motivation: autonomy, competence, and relatedness (Deci & Ryan, 1985, Deci & Ryan, 2000; Ryan & Deci, 2020; Sprakel, 2017). Autonomy is when a person chooses to do something because they have an interest in it. Teachers can implement student autonomy by giving students choices or good reasons for the tasks that are required (Ryan & Deci, 2020). Competence is when a person does something because they know they can be successful doing it. Teachers can promote this in the classroom by giving students positive feedback for their hard work and/or achievements. And relatedness is when a person feels like they matter and feel cared about. When teachers are warm and caring towards their students, there exists greater intrinsic motivation (Deci & Ryan, 2000). These three factors are especially important to consider with our minority student populations in order to show that they are valued in our classrooms. Additionally, research shows that when a person's autonomy, competence, and relatedness needs are met, people are more likely to be intrinsically motivated (Deci & Ryan, 2000; Deci & Ryan, 2008; Ryan & Deci, 2020). This is important because intrinsic motivation leads to higher levels of academic engagement and achievement (Ryan & Deci, 2020).

Maslow's Hierarchy of Needs

Maslow's (1943) scholarship recognized that humans have an ordered set of needs that affect their motivation. Maslow presented a hierarchy of needs in which he suggested that the most basic needs must be met before a person would be motivated to meet the needs higher in the set of needs. The first set of needs has to do with a person's physiological needs like food, water, warmth and rest. Once these needs are met, then a person could be concerned about meeting their need for safety and security, the second set of needs. The third set of needs includes belongingness and love, including needs for intimate relationships and friends.

According to Maslow, once met, a person can then meet their esteem needs, which include prestige and a feeling of accomplishment. And finally, after all the needs at the bottom of the pyramid are met, a person can work on self-actualization or achieving one's full potential.

This theory plays its role in the classroom regarding student motivation as well. Although this action research project took place in an upper middle-class neighborhood and most, if not all, of the students' basic needs are being met, many are dealing with psychological needs not being met. There are some populations of students who are overwhelmed with academic pressure from their peers and/or parents. Other populations, such as students of color, have to contend with underrepresentation and inequities that make them feel unvalued (Lane, In Press; Valenzuela, 1999; Yosso, 2005). A student's need to feel cared for and belong as well as their need to feel accomplished often affected their motivation to engage in their education. As with self-determination theory, creating a space where students feel like they belong and are competent, increases the chances that their motivation to engage in their mathematics education will improve. This notion is the ideological focus for this action research project, which seeks to determine the effect of implementing relationship building strategies in the mathematics classroom on student engagement.

Review of Related Research

The first section of the literature review explores student engagement. It shows that student disengagement is a problem, especially in high school. This determination leads into research about the various factors that impact student engagement. Students' motivation for engaging can be affected by classroom culture and focus, as well as teachers' behaviors. This body of research also highlights how strong student-teacher relationships have a positive impact on student engagement. Once it was determined that the student-teacher relationship could

improve student engagement, the last section of the Review of Related Research illuminates ways that teachers have had success in fostering authentic positive relationships with their students.

Student Engagement

Much of my research surrounded student engagement. Through the research it became apparent that a lack of student engagement is a persisting problem in the United States and across the world. The research describes student engagement and disengagement in many ways. Additionally, research provided several reasons for the importance of student engagement, particularly in mathematics.

Student engagement is defined as "students being actively involved in their learning tasks and activities" (Lei et al., 2018). However, "the most immediate and persisting issue for students and teachers is […] student disengagement" (Newman, 1992, p. 2). Students' lack of engagement in high school is a well-documented problem that exists across the country (Brenneman, 2019; Collier, 2015; Hodges, 2018; Newman, 1992; Ryan & Deci, 2020). Newman (1992) conducted extensive research that involved five main projects focused on middle and high school engagement. The project consisted of analysis of literature reviews and existing data, as well as new studies of staff and students from 32 middle schools and 62 high schools across the United States. Newman's (1992) study showed that the most disengaged students are those that disrupted class, skipped class, or did not submit assignments. However, a majority of the disengaged students represented in the study displayed good behavior, attendance, and assignment completion. But, they showed a lack of "excitement, commitment, or pride in mastery of the curriculum" (Newman, 1992, p. 2). Research showed that student engagement is the key factor in improving student achievement (Chase et al., 2014; Klem & Connell, 2004;

Newman, 1992). Newman (1992, p. 3) stated that "learning develops largely through the labor of the student, who must be enticed to participate in a continuous cycle of studying, producing, correcting mistakes, and starting over again."

Despite the fact that intrinsic motivation leads to higher levels of engagement and achievement, the typical student is not intrinsically motivated when it comes to their education (Ryan & Deci, 2020). Students who do seem motivated are often extrinsically motivated by their desire to earn good grades and not intrinsically motivated by their love for school (Newman, 1992). According to Deci and Ryan (2008, 2020), moreover, teachers need to create the circumstances in which students' psychological needs are met so that they are able to perform optimally. This mirrors Maslow's (1943) hierarchy of needs, which suggested that meeting needs such as belongingness and accomplishment has to occur before a person can achieve their full potential. Creating supportive learning environments where students feel competent and as well as cared for will promote intrinsic motivation (Ryan & Deci, 2020).

It is essential for students to engage in mathematics for many reasons. Mathematics is used on a daily basis when balancing a checkbook, baking, calculating what to tip your food server, or determining a percent discount. It is necessary for developing critical thinking skills, which are important for making decisions throughout your life. It is used in creating music, art, and structural design. According to the U.S. Bureau of Labor Statistics (2020), some of the fastest growing occupations include healthcare, information technologies, cybersecurity analysts, software developers, statisticians and data scientists. These all require a strong understanding of mathematics. Since engagement is the key factor to improving understanding (Newman, 1992), it should be the goal of every mathematics teacher to determine what affects student engagement.

The research surrounding student engagement confirmed its importance, especially when it comes to mathematics. It also showed that there is an increase in disengagement as students progress through school. It is clear that students need to be active participants in their education for optimal learning to take place and their participation is dependent on their motivation. Therefore, what affects students' motivation and engagement?

Impacts on Engagement

There are many factors that can affect students' engagement in their education. These factors related to quality of teaching, classroom community, cultural capital, relevance, student autonomy, and teacher conduct. Subsequent paragraphs explore the research about the most important elements that contributed to student engagement and disengagement in recent research.

Research indicated that student engagement improved with better quality teaching (Quin et al., 2017; Ryan & Patrick, 2001). When teachers planned activities that encouraged community, students were more willing to take academic risks and engaged in their learning (Ciani, et al., 2010; Green & Mitcham, 2012). Additionally, highlighting students' personal stories (Green & Mitcham, 2012) and the individual strengths they bring to the classroom, what Yosso (2005) defined as *cultural capital*, have both shown to improve students' engagement. Similarly, incorporating students' interests and making content relevant promoted their curiosity (Corso et al., 2013; Ryan & Deci, 2020). Research showed that a focus on performance had a negative effect on engagement (Ciani, et al., 2010; Ryan & Deci, 2020; Ryan & Patrick, 2001).

However, in classrooms where community existed, even when performance-focused, students maintained high levels of motivation to learn (Ciani, et al., 2010). Creating a community where students are encouraged to collaborate with their classmates also led to increases in engagement (Ryan & Patrick, 2001). Furthermore, giving students choice or acknowledging their

viewpoints led to higher levels of engagement (Ciani, et al.; 2010; Ennis & McCauley, 2002; Ryan & Deci, 2020; Ryan & Patrick, 2001). However, it is important to give students meaningful choices because meaningless choices led to lower levels of engagement. Additionally, even when students had no choice, but saw value in what they were being taught, it led to higher engagement. In contrast, there were also factors that negatively affected student engagement, such as giving students answers and speaking directions in a controlling manner, as well as a focus on performance and scores (Ryan & Deci, 2020). It is important to distinguish between these types of controlling behaviors and the important task of providing structure for students by way of clear expectations (Klem & Connell, 2004).

Overall, the research showed there are many factors contributing to student engagement, however, a predominant theme emerged, and that was the way a teacher interacted with their students. It was these actions that contributed to the relationship between a teacher and their student, good or bad. Therefore, the focus of this study is on how to create positive student-teacher interactions and relationships that will improve student engagement.

Student-teacher Relationships

As discussed, the interactions that teachers had with their students had an impact on a student's engagement in their education. For that reason, deeper research was done specifically on student-teacher relationships and what kinds of actions led to the desired outcomes regarding engagement.

The research showed there was a positive correlation between the student-teacher relationship and students' academic engagement (Kelly & Zhang, 2016; Klem & Connell, 2004), meaning when student-teacher relationships improved, so did student engagement. Teachers have a great responsibility since their actions have both the capability to build or damage

relationships with their students and therefore the power to increase or decrease student engagement (McHugh et al., 2013). However, research by Martin & Collie (2019) showed when students had more positive student-teacher relationships than negative, they had higher levels of engagement in school. Moreover, the positive student-teacher relationships seemed to impact their engagement overall, but the negative student-teacher relationships did not have as much of a negative impact. Also, a positive relationship with one teacher improved a student's engagement in multiple classes (Martin and Collie, 2019). This is fortunate, since students often felt like their teachers only cared about their academic success and not about them as people and could recognize when a teacher asked about how they were doing personally instead of only academically (McHugh et al., 2013).

While students wanted to know that they were cared for by their teachers (Du Plessis, 2019; Green & Mitcham, 2012; Klem & Connell, 2004; McHugh et al., 2013), students in the study by McHugh et al. (2013) acknowledged that it was a sensitive balance between getting too personal and showing that you care and that the student-teacher relationship needed to remain professional. Ennis and McCauley (2002) conducted a study specifically targeting urban high school students identified as "hard to teach, disruptive, or disengaged" (p. 153) and the teachers who were successful in getting these students to engage. Students in this study described themselves as disruptive, said school was boring and that they were not interested in learning, or reported not caring about grades and only attending school because their parents made them or for social reasons. Yet, results of the study showed that students whose teachers intentionally implemented strategies to build trust with their students were successful in getting disengaged and disinterested students to actively participate in their learning (Ennis and McCauley, 2002).

Additional research showed that when teachers highlighted the cultural capital a student brought to the classroom, it promoted a positive student-teacher relationship that led to higher levels of student engagement and positive academic results (Liou et al., 2016; Yosso, 2005). This is not unlike Lane's (In Press) research surrounding the educational experiences of African American girls in which she emphasizes the importance of *politicized ethic of care*, which many Black female teachers already embody, and all educators should aspire to. *Politicized ethic of care* aims to uplift African American students, who have systematically been underserved in our educational system through a "form of caring which includes love for one's community, othermothering, and teaching the whole child" (Lane, In Press). Additionally, Velanzuela's (1999) research surrounding *subtractive schooling* highlights the negative impacts that devaluing a student's culture can have on their engagement in school. Valenzuela's (1999) suggests instead that school need to become "authentically caring institutions" (p. 344). Clearly, when teachers created a caring and supportive learning environment, students were more likely to engage (Corso et al., 2013; Kelly & Zhang, 2016; Klem & Connell, 2004; Ryan & Patrick, 2001). Additionally, by giving students second chances paired with positive interactions and student choice, teachers created trusting relationships with their students. Once a strong student-teacher relationship was created, positive learning outcomes resulted through higher levels of engagement (Ennis & McCauley, 2002).

This research showed that teachers have incredible power to motivate students to engage in their learning by how they interact with them. However, the interactions must be authentic because students are smart enough to know when a teacher truly cares (Lane, In Press; Valenzuela, 1999). Therefore, it all begins with how the teacher interacts with their students that

can truly make a difference in their relationships with them, as well as a student's engagement in their education.

Summary

The initial research surrounding student engagement concluded that student disengagement in the classroom is a problem. Further research showed there were several factors that affected student engagement, such as the classroom community and focus, but primarily a teachers' conduct. One thing that stood out in the research was the positive impact that a strong student-teacher relationship had on student engagement. Studies indicated that teachers who showed authentic care for their students as people, not just as students, built stronger and more trusting relationships with their students. Additionally, other research illustrated that when teachers valued students' cultural capital, it strengthened student-teacher relationships.

While most of the research surrounding student engagement and student-teacher relationships have been done in urban schools (Ennis & McCauley, 2002; Kelly & Zhang, 2016; Klem & Connell, 2004; McHugh et al., 2013), this research project planned to determine whether implementing strategies to demonstrate authentic care for students in an upper-middle class suburb will have similar affects. Additionally, previous research was conducted in traditional school settings. Due to the nature of this year being taught remotely, this project aimed to determine if similar outcomes would occur with strategies implemented in a distance learning environment. This study collected data regarding student perception of their participation levels, as well as participation rates in various classroom activities and assignments to determine levels of student engagement.

Chapter III

Methods

Research shows that engagement declines as students move through their school-aged years (Brenneman, 2019; Collier, 2015; Hodges, 2018; Newman, 1992; Ryan & Deci, 2020). This is a serious problem since studies show that engagement improves academic success (Chase et al., 2014; Lei et al., 2018). There are several factors that improve student engagement, including positive classroom community, valuing students' interests and opinions, clear expectations, and strong teacher-student relationships (Ciani et al., 2010; Du Plessis, 2019; Green & Mitcham, 2012; Quin et al., 2017; Ryan & Patrick, 2001). For this research project I focused on building trusting relationships with my students in order to have a positive effect on their levels of engagement. I chose to focus on this factor not only for its proposed benefits on student engagement, but also because I want to have a positive impact on the lives of my students as a whole. I implemented several strategies to foster trusting relationships, both at the beginning of the academic year and additional strategies when this project began. My goal through this research project was to determine: *How does the implementation of strategies to garner stronger relationships with my students affect their engagement in my Algebra 2 classes?*

Setting

This study took place in a high school located in a small, suburban city in Northern California. The school is located on 54 acres of land which contains both a performing arts center and an Olympic size aquatic center used jointly by the city. The families that make up the school are primarily upper-middle to upper class households who are fortunate enough to be able to contribute over $400,000 to the school's Education Fund which goes to reduce class sizes and to provide classroom, laboratory, and library supplies. In addition to the Education Fund, the

school's Parent Teacher Student Association (PTSA) supports many programs such as scholarships and awards, teacher appreciation and grants, family engagement and parent education, special needs and exceptional education, and inclusion and diversity, to name a few.

The population of the city where the high school is located is primarily made up of Asians and Whites. According to the United States Census Bureau, about 47% of the city's population designate themselves as Asian and about 43% designate themselves as White. However, the high school is located in one of the areas in the city that consists primarily of people of Asian descent. According to the California Department of Education (2020), the racial demographics of the school at the time of the study were as follows: just over 2% African American, less than one percent American Indian or Alaska Native, about 70% Asian, about 6% Filipino, about 5% Hispanic or Latino, less than one percent Pacific Islander, about 12% White, and almost 5% reported two or more races. School enrollment at the time of the study included 3378 9th-12th grade students, 1,752 of which identified as males and 1,626 identified as female (California Department of Education, 2020). Additionally, according to the California Department of Education (2020), between one and two percent of students were English Language Learners (ELL), about 5% of students had disabilities, and about 7% of students were socioeconomically disadvantaged with less than one percent classified as homeless. According to the English Language Proficiency Assessment for California (ELPAC), almost 35% of ELLs were classified as well developed, about 33% moderately developed, about 17% somewhat developed, and about 15% minimally developed.

According to the results of the 2018-2019 California Assessment of Student Performance and Progress (CAASPP), the school was considered high-performing. Over 96% of 11th grade students met or exceeded the state standard for English Language Arts (ELA), and 88% of 11th

grade students met or exceeded the state standard for mathematics. These results are higher than the district results, which were about 82% and 78%, respectively. The results were also remarkably higher than the state-wide results, which were 57.27% for ELA and 32.24% for mathematics. While these results show the school as a whole is performing well, there are communities within the school whose performance on standardized tests was significantly lower than that of their peers. It is among these students that the study is designed to improve engagement.

The school employs 142 teachers, 137 of whom are fully credentialed. Forty-nine teachers identified as male and 92 as female. The ethnicity of the teachers was as follows: 8% Hispanic, 17% Asian, 2% Filipino, 1% African American, 71% White, and less than 1% classified as two or more races. The demographic data shows that the ethnic make-up of the teaching staff varies significantly from the ethnic make-up of the student body. The most significant differences exist in the Asian and White demographics. The student body is 70% Asian, while the teaching staff is only 17% Asian. Additionally, only 12% of the student body is White, but 71% of the teachers are White. It is also reported that 54% of the teaching staff possess advanced degrees.

Demographics of the Classroom

The participants in this research project include the 32 students from one of my Algebra 2 classes from the 2020-21 academic year. The ethnicity of the participants was 44% Asian/Indian, 6% Filipino, 13% White, 19% Chinese, 3% Black, 3% Korean, 3% Japanese, 3% Other Asian, and 6% identified with 2 or more races. There were 15 students who identified as male and 17 who identified as female. Additionally, the study included 17 ninth grade students, six 10th grade students, eight 11th grade students, and one 12th grade student. There was one student with an

Individual Education Plan (IEP) and three students had 504 plans, which provide accommodations for students with disabilities in order to give them equal access to their education.

Data Collection Strategies

Due to the COVID-19 pandemic, there were many adjustments made to my data collection strategies, as well as teaching as a whole. Because of the pandemic, schools in my district were closed to in-person instruction for most of the year. All classes were taught via videoconferencing and learning materials had to be converted or newly created in order to be accessible online. This included my efforts to collect data.

To develop a fuller understanding of the impact of relationships on engagement in my class, both qualitative and quantitative data collection methods were used. Adjustments to the way data collection strategies were implemented had to be made due to not seeing students in person. For instance, Padlet is an online platform that allows teachers and students to post words and pictures to a page that everyone can see. One way I connected with my students was with daily check in questions that they responded to on a class Padlet as they logged into our class Zoom meeting. This activity enabled me to connect more personally with my students, but also provided a way for me to collect quantitative data about who was engaging in the Padlet. Another way I measured student engagement was through assignment completion. This provided quantitative data in the form of individual student engagement as well as whole class engagement levels. Additionally, I connected with and collected both quantitative and qualitative data from my students' responses on the weekly Google Form Check-in. Not only did students rate their level of engagement, they also shared information about what factors contributed to their level of engagement. Finally, the researcher journal provided qualitative data about

situations contributing to student engagement as well as moments when breakthroughs with specific students occurred.

Padlet Engagement

In an attempt to connect authentically with my students, at the start of each class I had them check in on a daily basis by posting their answer to a question on our class Padlet page on padlet.com. Examples of the types of questions asked included (Appendix A): "What was your favorite toy growing up?" or "What is your favorite chip flavor?" I found asking these fun questions a great way to determine who was tuning in during class, as this proved difficult to determine while conducting class via Zoom. I have recorded the number of students participating in the Padlet check in on a daily basis as one way of measuring student engagement. Additionally, I have recorded the number of times each student participated in the Padlet check in out of a total of 22 opportunities.

Assignment Completion

Because students have varying levels of internet connectivity speeds, I was hesitant to conduct the teaching of content during our Zoom class meetings. Therefore, I created teaching videos for students to watch for homework and then students practiced the concepts during class by completing assignments. Students completed their practice assignments via an online platform called Formative that allowed me to see in real time that students were working on the assignment and also enabled me to give individual and multiple student feedback on each problem on the assignment. Students earned points for completion of these assignments which were recorded in a spreadsheet in my school Google Drive. Using these scores, I calculated students' rates of participation overall, as well as per half-chapter of study, as a means for

determining levels of student engagement. I also compared students' assignment completion rates with their participation in the daily Padlet check-in to determine if any relationship existed.

Weekly Google Form Check-in

Students completed a Google form at the end of every week. This Google form had two purposes. It provided an opportunity for students to reflect on their level of engagement and what impacted it, and it created a space for students to share with me how they were feeling, express any concerns that they had, and gave them information for how they could get support if they needed it. If I had taught in person, I would have collected this data via an exit ticket, however, due to distance learning I converted the exit ticket to a Google form. On the form, I asked the students to rate their level of engagement in my class each week on a scale of one to five. One being "not engaged at all" to five being "completely on task and engaged." In addition, a follow-up question was added asking them to share what influenced their engagement/disengagement that week. Not only did this provide quantitative data in the form of student perception of their engagement levels, it also provided qualitative data in their responses to what affected their engagement. Additionally, the form was another way of showing authentic care for my students. I included the questions, "How are you doing/feeling? Options: Physically? Emotionally? Mentally?" and "As your teacher, is there anything I can help you with right now? do for you? Is there anything I should know?", as well as provided resources for students who needed emotional support (Appendix B).

Researcher Journal

During this research project, I kept a journal of detailed notes on a document in my personal Google Drive. Notes were written immediately after I met with this class each day. Specific notes were written when interventions took place to connect with particular students

struggling to engage. Additional notes were recorded when student engagement behavior showed a noticeable difference.

Procedures

This research project took place over ten weeks beginning in late January and concluded at the end of March. Due to the COVID-19 pandemic, the entire project took place while teaching remotely. Therefore, it seemed as important as ever to begin strategies to build authentic relationships with my students from the beginning of the academic year.

Pre-Intervention

Examples of strategies implemented before the research project began include the daily Padlet check in, as well as individual check-ins utilizing the breakout room feature on Zoom, or emails to students who struggled to engage in online learning. While these communications were often initiated because of a student's lack of engagement, the focus of the communication centered around how the student was doing and how I could better support them, and not about their missing assignment. Additionally, since assignment scores are kept for grading purposes, data regarding assignment completion also began at the beginning of the academic year. These data were baseline assessments, which I later analyzed to determine potential changes in student engagement since strategies were implemented to improve teacher student relationships.

Intervention

Additional strategies, such as the weekly Google Form Check-in were implemented once the study began. The student perceived engagement data from these Google Form Check-in responses were used to show the differences in individual student engagement over the course of the study as well as whether the whole class data showed changes in levels of engagement. The data from the forms also gave students details of the factors that may have contributed to their

changes in engagement levels during different times of the study. Finally, notes from the research journal gave specific insight into factors that affected teacher student relationships and student engagement.

Plan for Data Analysis

The data in this project were collected to determine *how the implementation of strategies to garner stronger relationships with my students affect their engagement and therefore their performance in my Algebra 2 classes?* Participants posted answers to questions on the class Padlet daily. Individual student participation in the Daily Padlet check-in was recorded. Whole class as well as individual Padlet participation data were analyzed. Additionally, assignment completion data from a subset of participants whose Padlet engagement changed over the course of the study were analyzed for changes. Measure of center was also used to analyze students' level of engagement through assignment completion. Baseline data from students who initially struggled to engage at the beginning of the year were compared with assignment completion data that were collected during the study to determine if any changes in engagement levels occurred after implementation of interventions. The assignment completion data were also compared to students' weekly perceptions of their engagement as reported on the Google form check-ins. Also, the measure of central tendency was used to compare whole class engagement levels on a weekly basis using students' responses to the Weekly Google Form Check-in regarding their perception of their own engagement. Additionally, students' responses to what affected their engagement on a weekly basis were analyzed for emerging themes. Finally, notes were written three times a week after each class in a researcher journal in my Google Drive to record data regarding specific incidences in which a student's level of engagement was particularly notable and details as to what may have contributed to the change in engagement.

Summary

The goal of this action research project was to determine the effect that implementing strategies to develop authentic relationships with my students would have on their engagement in my Algebra 2 class. Strategies to build trusting relationships were implemented both at the beginning of the year with additional strategies to form connections added at the start of this research project.

Data were collected in several ways. Quantitative data measuring students' engagement were collected via participation in Padlet check in and Assignment completion. Additionally, quantitative and qualitative data were collected from the students about their own levels of engagement via the weekly Google Form Check-in. Lastly, qualitative data were collected using a Researcher journal.

This chapter presented the setting of this action research project, as well as its participants, and the strategies used to initiate authentic teacher-student relationships as well as the methods for collecting data which revealed students' levels of engagement. The following chapter examines the data that were collected and presents their analysis.

Chapter IV

Findings

This action research project aimed to determine whether strategies to show authentic care (Valenzuela, 1999) for students would increase their levels of engagement in my Algebra 2 class. For the purpose of this research, authentic caring included efforts to get to know my students personally, reaching out to students who are not engaging, but with a focus on their well-being, not on their lack of engagement, offering a space for students to share their perspectives with me, and providing students with resources to support their mental and emotional health, to name a few. As such, the research question was: *How does the implementation of strategies to garner stronger relationships with my students affect their engagement in my Algebra 2 classes?* Research has shown that engagement in mathematics declines as students move on to their secondary level in school (Brenneman, 2019; Collier, 2015; Hodges, 2018; Newman, 1992; Ryan & Deci, 2020). Additionally, it was my experience that students were struggling even more to engage during distance learning due to the many distractions that were surrounding them. Many studies completed in urban schools have shown that strong teacher student relationships improved student engagement (Liou et al., 2016; Kelly & Zhang, 2016; Klem & Connell, 2004; Martin & Collie, 2019). This study aimed to determine if this line of equity can be expanded to a suburban school setting. Numerous strategies to show care for students were implemented during the 10-week study and several types of data regarding student engagement levels were collected and analyzed.

Overview of Methods and Data Collection

It is good practice for teachers to show care for their students, however, research showed that students could tell when a teacher's supposed care was more about their academics than

authentic care for them (McHugh et al., 2013). In this study, strategies were implemented to show that I cared about my students as people more than I cared about their progress in my class. This was especially difficult due to having to teach students remotely. Therefore, some strategies were implemented at the start of the school year before the study began in an attempt to connect with my students during distance learning. The first strategy was asking the daily check-in questions as a way to get to know and interact with my students on a more personal level, especially since teaching remotely created a barrier for connections to be made more naturally. They included questions such as, "What is your favorite sauce?" or "What is something that you do that bothers other people?" or "What is a fictional place that you would like to visit?" While students responded to the questions, I interacted with them on the zoom as I read their responses aloud. Some other approaches to connecting with my students that began at the start of the school year included playing music at the beginning of class, creating my slides with fun themes, reaching out to students who seemed like they were struggling via zoom chat or email, giving more grace to students regarding assignment deadlines, and adding emojis to many of my communications with students.

At the start of the 10-week study, I had my students complete a weekly check-in form. The last two questions on the form were designed to see how my students were doing as humans, not as students and give them an opportunity to share with me if they needed or wanted to. Moreover, because so many students were struggling with mental health due to the isolating effects of the pandemic, I provided links and information that included mental health resources at the bottom of the form as well as on my Google classroom (Appendix B). It was my goal, that through implementing these strategies, students knew that they were valued.

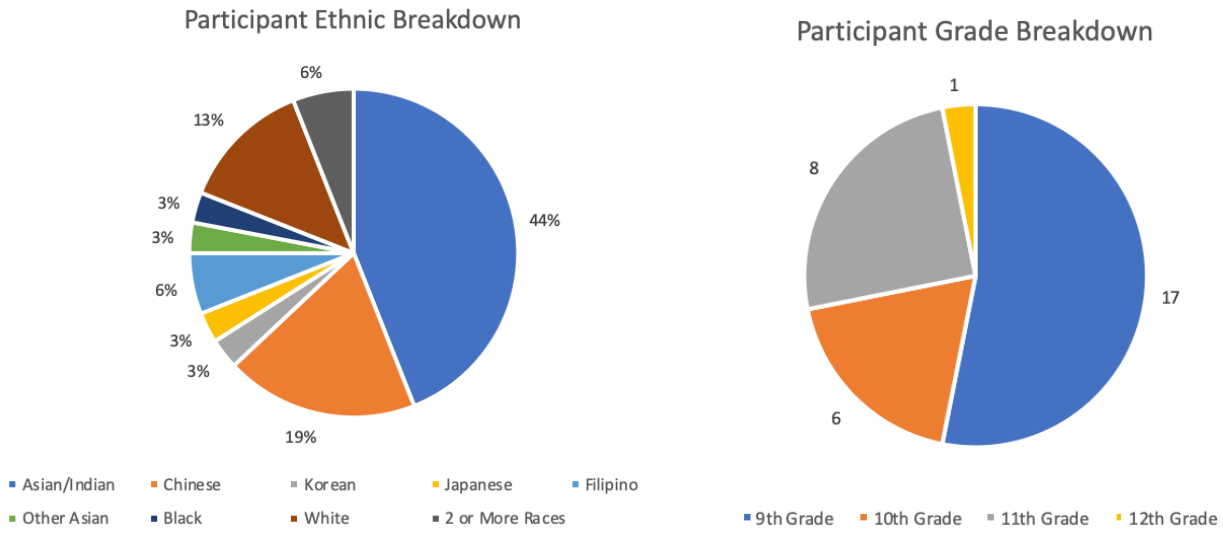
Data were collected over the 10-week study to determine whether these strategies had an impact on student engagement. First, engagement was measured by recording daily participation in the Padlet Check-in (Appendix A). Second, student engagement was recorded via assignment scores, which were based on completion. Additionally, students rated their own engagement levels on a weekly basis through a Google form (Appendix B). Lastly, research notes were taken to record any notable events affecting student engagement.

Demographics of the Participants

Participants for this action research study included 32 students from my fourth period Algebra two class in the 2020-21 Academic Year. Three students had 504 plans and one student had an Individual Education Plan (IEP). There were 15 students who identified as male and 17 who identified as female. Their ethnicity included 44% Asian/Indian, 6% Filipino, 13% White, 19% Chinese, 3% Black, 3% Korean, 3% Japanese, 3% Other Asian, and 6% students who identified with two or more races. The participants consisted of 17 ninth grade students, six 10th grade students, eight 11th grade students, and one 12th grade student. Participant ethnic and grade level breakdowns are shown in Figure 1.

Figure 1

Participant Ethnic and Grade Level Breakdowns

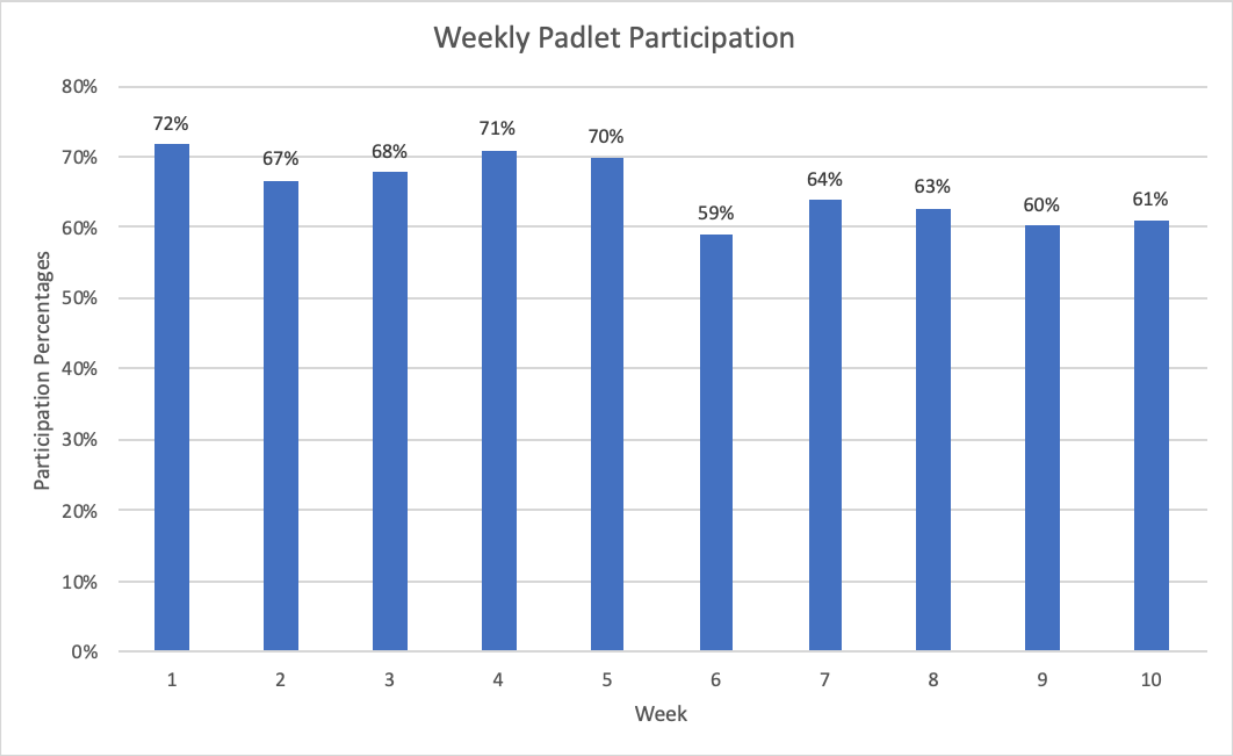


Analysis of Daily Padlet Check-in Participation

The Daily Padlet Check-in participation data were used to measure student engagement at the most basic level. I displayed a slide show everyday through screen sharing. Each daily slide included the agenda for the class, the homework assignment, and the daily check-in question. As students joined our Zoom meeting, they were to post their responses to the daily questions on the class Padlet. If they did, it was recorded that they participated. If a student did not answer the question on the Padlet, they were marked as not participating. I tabulated daily participation totals and used them in calculating the weekly participation percentages for the whole class. The percentages were calculated by dividing the number of students who participated in the Padlet Check-in each week by the number of students who were present in the Zoom meeting at the time when students were responding to the Check-in question. As such, that is to say that the students who were absent or late were not included when calculating percent participation. The weekly percentages of student's participation in the Daily Padlet check-in are shown in Figure 2.

Figure 2

Weekly Percentage Student Participation in the Daily Padlet Check-in



The percentages of students' weekly participation in the Daily Padlet Check-in began the first week at 72% but had a quick drop of 5% the next week. The third and fourth weeks saw gradual increases until participation was up to 71%, almost the same as the first week. The fifth week there was a decline of 1%, but the sixth week was the lowest week for participation at 59%. Participation recovered 5% and reached 64% the seventh week and 63% the eighth week. However, participation declined to 60% and 61% the last two weeks respectively. These data show that, overall, weekly participation in the Daily Padlet Check-in decreased over the course of the 10-week study.

It is also important to note the total percentage of participation for each student. Each student was given a number so as to not reveal student names. The number of times each student participated was recorded and divided by the total number of Daily Check-ins completed during

the study. I recorded when a student was not present for the Daily Padlet Check-in and the total number of completed check-ins was adjusted for each student based on their attendance. If they were absent at the time of the check-in, it was not included in the total for their percentage calculation. The student percent participation totals are displayed in Table 1.

Table 1

Percent Participation in Daily Padlet Check-in Per Student

Student #	% Participation Total	Student #	% Participation Total
1	82%	17	100%
2	5%	18	91%
3	95%	19	73%
4	100%	20	95%
5	73%	21	95%
6	95%	22	100%
7	89%	23	100%
8	95%	24	100%
9	29%	25	0%
10	0%	26	95%
11	0%	27	5%
12	73%	28	59%
13	100%	29	90%
14	100%	30	5%
15	0%	31	30%
16	0%	32	100%

There were 22 opportunities during this 10-week study for students to participate in the Daily Padlet Check-in if they were present every day. There were eight students with 100% participation. Another six students with 95% participation. In total, there were 16 students, half of the class, with over 90% participation in the Daily Padlet Check-in. There were two students who participated 80%-90% of the time and another three students participated between 70% and 80% of the time. One student each participated 59%, 30%, and 29% of the time. Three students participated 5% of the time and there were five students who were present, but did not participate at all in the Daily Padlet Check-in. These data show that half the students participated almost every day and a quarter of the students did not or barely participated. This is important because it

means that the remaining quarter of the class are the students who primarily affected the fluctuations in the weekly data percentages from Figure 2.

Therefore, an analysis of these 8 students was necessary to determine if their engagement levels changed over the course of the study. This data is presented in Table.

Table 2

Subgroup of Student Padlet Participation by Day

Student #	Day																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1		•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•		•	
5	•	•	•	•	•	•	•	•	•	•	•	•		•		•					•	•
7	•	•	•	•	•	•	•	•	•	•	•				•	•	•	•			•	
9	•	•	•	•		•	•															
12	•	•	•	•	•	•	•	•	•			•	•	•	•	•	•		•			
19	•	•	•	•		•						•	•	•	•	•	•	•	•	•	•	•
28	•	•			•		•	•	•		•		•	•		•			•	•	•	
31					•	•		•				•		•		•						

Note. • signifies the student participated in the Check-in Padlet for the given day

According to Table 2, student 19 is the only student whose participation seemed to increase as the study progressed. Students 1, 28, and 31 seemed to have sporadic participation. The remaining four students in this subgroup showed a decrease in participation in the Daily Padlet Check-in over the 22 days of instruction.

Analysis of Assignment Completion

The 10-week study took place over the course of three chapters of study. Data collection began during the second half of a chapter, encompassed all of the next chapter, and continued through the first half of the following chapter. While this may seem like a difficult way to divide up the collection of data for assignment completion, it is important to note that each of these chapters were split in half and a quiz was given after each half chapter. Therefore, the collection

of data took place over the course of four half-chapters. For sake of understanding, we will identify the first half of a chapter as A and the second half of a chapter as B.

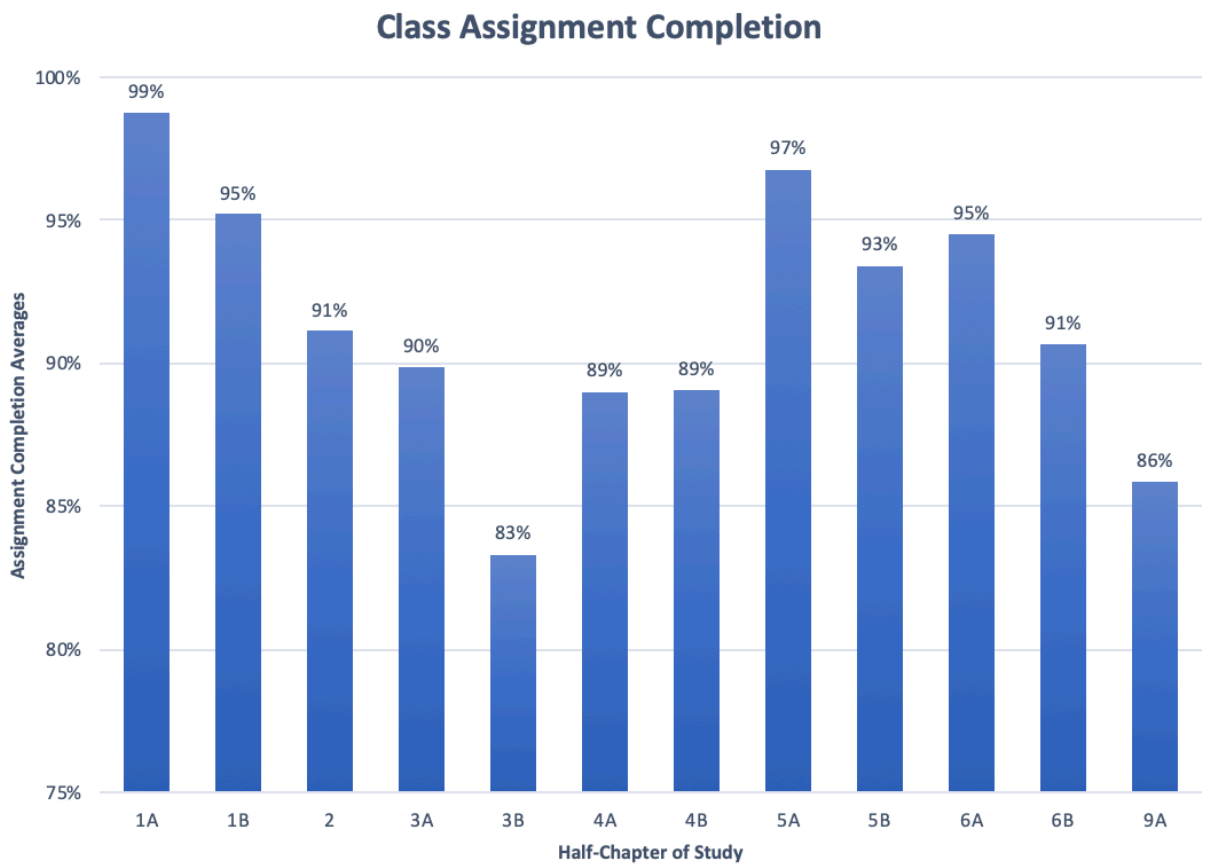
Each half-chapter is broken into sections of content. For each section, the first assignment consists of students taking notes while watching a teaching video. Students were to upload an image of their notes to earn credit for the assignment. The next assignment for each section was to complete a practice assignment in which the students completed problems pertaining to the concepts that were covered in the teaching video. The practice assignments were graded for *completion* and not *accuracy*. Therefore, students earned full credit for completing the assignment as long as they attempted every problem. These two types of assignments were completed for each section of every chapter. At the end of each half-chapter, a review assignment was assigned. For grading purposes, the notes and practice assignments were each worth five points and since the review assignment was about twice as long as the practice assignments, each review assignment was worth 10 points. For each note assignment, students were given five points for completing the assignment and zero points if they did not. For each practice and review assignment, students were given completion scores based on the number of problems they completed. They were calculated by dividing the amount of problems they completed by the total number of problems in the assignment and then multiplying it by five for practice assignments and by 10 for review assignments. It is important to note that due to the fact that many students struggled during distance learning, I accepted late work for these assignments, which is reflected in Figure 3.

Additionally, since assignment completion is part of students' overall grade in my class, assignment completion data were collected since the beginning of the academic year. Therefore,

Whole Class Assignment Completion rates for the entire academic year until the conclusion of this project are shown in Figure 3.

Figure 3

Percentage of Assignment Completion Per Half-Chapter of Study



The academic year is divided into two semesters. Semester one included chapters one through four and semester two began with chapter five. Note that chapter two was a shorter chapter and was therefore not divided into two half-chapters of study.

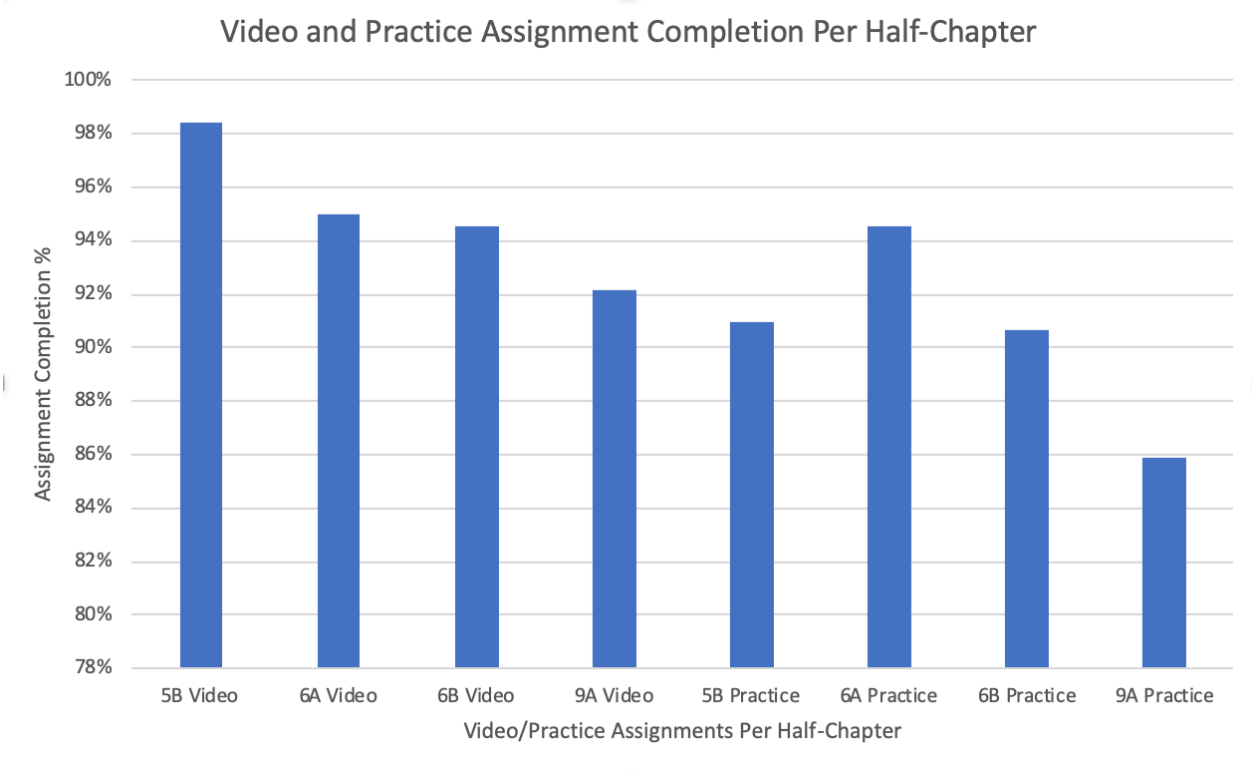
According to these data, student Assignment Completion began at a high level of 99% but there was a slow decline with each chapter or half chapter of study in semester one until it reached 83% at the end of chapter three. There was an increase in assignment completion to 89% in chapter four, the last chapter of semester one. The semester two assignment completion

average began at 97% in the first half-chapter of chapter five, and then declined to 93% for the second half-chapter. Then assignment completion averages increased to 95% for the first part of chapter 6. However, these data show that as a class, students' Assignment Completion rates declined for the next two half-chapters of the study. Overall, these data showed that at the start of each semester, assignment completion rates were high, at 99% and 97%, respectively. However, in both semesters, students' assignment completion rates decline with each chapter of study, with only one exception in chapter five of semester two. If we just look at the portion of the data that were collected during the study, half-chapters 5B to 9A, the assignment completion rates somewhat mirror the data for the Daily Padlet Check-in, where there is an initial increase in participation or engagement and then a gradual decline for the rest of the study.

In the previous analysis, all assignments were grouped together. To determine whether there was a difference in assignment completion of the note assignments and the practice and review assignments, I have analyzed these data separately as well. This analysis is shown in Figure 4.

Figure 4

Percentage of Video Notes and Practice Completion Per Half Chapter of Study



According to these data, the video completion rates ranged from over 92% to over 98%, only about a 6% range in percent. However, the Practice Assignment Completion rates varied more significantly with a range of over 8%. The Practice Assignment Completion began at around 91% during half-chapter 5B and increased to over 94% during half-chapter 6A. Unfortunately, Completion rates declined to just under 91% during 6B and even more to below 86% in half-chapter 9A. These data showed that the variation and decline in Assignment Completion rates is largely due to the Practice Assignment completion rates and less to do with the Video Notes Assignment completion rates. Because of this, I wanted to take a deeper look into the Practice Assignment Completion rates. Table 3 shows the breakdown for the Practice Assignment Completion rates for each student.

Table 3

Practice Assignment Completion by Student Per Half-Chapter

Student #	Practice Assignment Completion Percentages			
	5B	6A	6B	9A
1	100%	100%	100%	80%
2	95%	100%	100%	100%
3	100%	100%	100%	100%
4	60%	100%	68%	30%
5	100%	100%	100%	100%
6	100%	100%	100%	80%
7	95%	100%	96%	97%
8	100%	100%	100%	100%
9	100%	100%	88%	90%
10	95%	100%	100%	100%
11	85%	80%	96%	38%
12	95%	100%	100%	100%
13	100%	100%	100%	100%
14	100%	80%	48%	83%
15	25%	88%	88%	97%
16	90%	68%	64%	53%
17	100%	100%	4%	50%
18	100%	100%	100%	100%
19	100%	100%	100%	100%
20	100%	84%	76%	37%
21	100%	100%	100%	97%
22	100%	100%	100%	100%
23	100%	100%	100%	100%
24	100%	100%	100%	100%
25	100%	100%	100%	100%
26	60%	88%	28%	77%
27	100%	100%	100%	100%
28	100%	100%	100%	100%
29	15%	52%	84%	47%
30	100%	100%	100%	100%
31	95%	76%	64%	50%
32	100%	100%	100%	100%

Table 3 indicates that there is a small number of students whose scores are drastically affecting the data analysis. Therefore, in order to better examine these data, students with 100% completion rates were removed and Table 4 was created using only students' data who did not complete 100% of the Practice Assignments. This allowed for an examination of correlation

between the strategies implemented and assignment completion rates for students whose engagement changed over the 10-week study.

Table 4

Adjusted Practice Assignment Completion by Student Per Half-Chapter

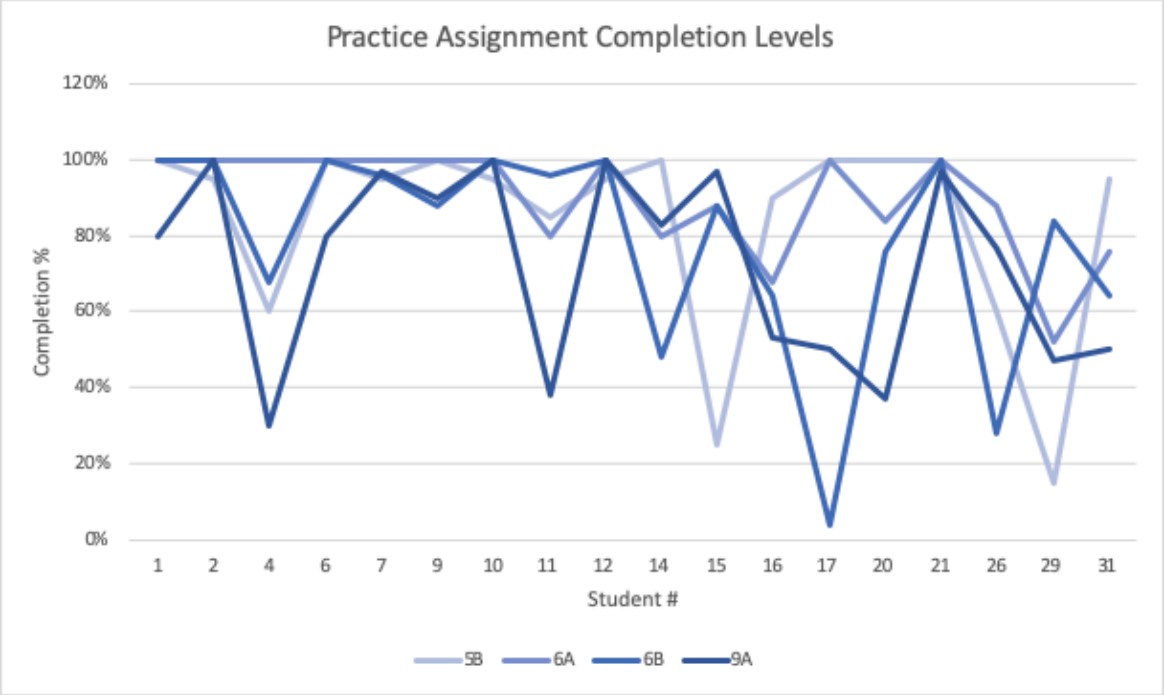
Student #	Practice Assignment Completion Percentages			
	5B	6A	6B	9A
1	100%	100%	100%	80%
2	95%	100%	100%	100%
4	60%	100%	68%	30%
6	100%	100%	100%	80%
7	95%	100%	96%	97%
9	100%	100%	88%	90%
10	95%	100%	100%	100%
11	85%	80%	96%	38%
12	95%	100%	100%	100%
14	100%	80%	48%	83%
15	25%	88%	88%	97%
16	90%	68%	64%	53%
17	100%	100%	4%	50%
20	100%	84%	76%	37%
21	100%	100%	100%	97%
26	60%	88%	28%	77%
29	15%	52%	84%	47%
31	95%	76%	64%	50%

Table 4 included data from students who did not have 100% engagement during this 10-week study, which includes 18 students. This table showed that there were several students whose engagement improved, but regretfully there are more students whose engagement levels declined as the 10-week study progressed.

In order to better understand the data in Table 4, Figure 5 was created. In Figure 5, trends in the data from Table 4 were more evident. Each half-chapter is represented by a different color in Figure 5. The color gets darker with each half-chapter of study. If students' assignment completion increased with each half chapter, the darker lines would be above the lighter line.

Figure 5

Adjusted Practice Assignment Completion Levels



According to the data presented in Figure 5, student assignment completion declined with each half-chapter of study, with few exceptions. Student twelve's data showed an increase as the study progressed and student 21 had almost perfect assignment completion with the exception of missing one point in half-chapter 9A. A few students had sporadic assignment completion, but overall, the assignment completion for half-chapter 9A was lower for most students in this subset.

Another interesting thing to note is that, for the five students who did not participate in the Daily Padlet check-ins, there did not seem to be a strong correlation between their participation in the Padlet and their assignment completion. Table 5 shows the assignment completion percentages of the five students who did not participate at all in the Daily Padlet Check-ins.

Table 5

Assignment Completion of Padlet Non-Participants

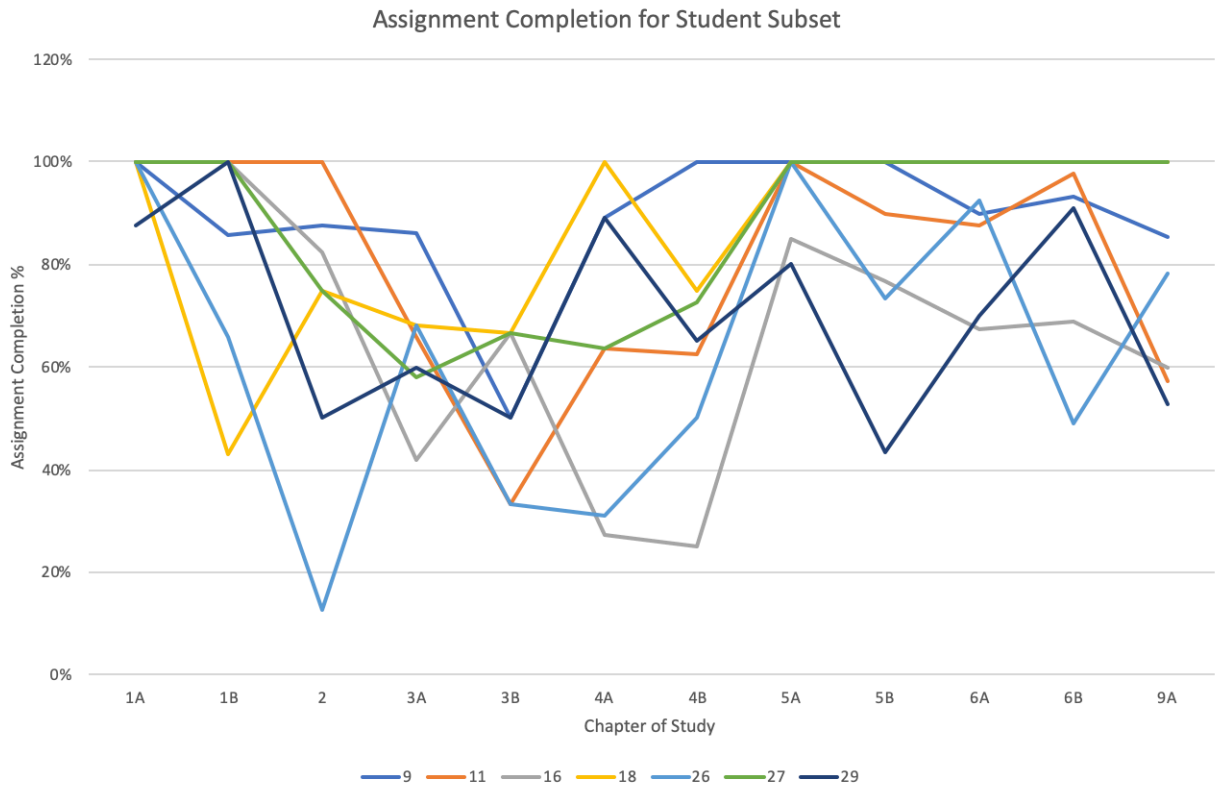
Student #	Practice Assignment Completion Percentages				
	5B	6A	6B	9A	Total
10	95%	100%	100%	100%	99%
11	85%	80%	96%	38%	81%
15	25%	88%	88%	97%	82%
16	90%	68%	64%	53%	67%
25	100%	100%	100%	95%	98%

This was an interesting comparison, as it showed that a student who is not participating in the activity designed to make connections may still be engaged in the learning tasks. As shown in Table 5, two of the students who did not participate in the Padlet, completed almost all assignments and another two completed over 80% of their assignments. It is also important to note from the table that these two students usually completed most of their assignments, but had one half-chapter during which they were significantly less engaged that affected their overall percentage drastically.

A final analysis of students' assignment completion shows the assignment completion percentages from the beginning of the academic year until the end of the study for a subgroup of students who seemed to struggle with assignment completion at the start of the academic year. These data are presented in Figure 6.

Figure 6

Assignment Completion for Subset of Students



According to these data, all but one of the students in this subgroup began the year with 100% assignment completion in the first half-chapter of study. However, as you can see from the data presented in the table, all students in this subgroup had a drastic decline in engagement during the first semester, which is why they were chosen for this analysis. As we see from Figure 6, students 18 and 27 struggled to complete their assignments during most of the first semester. Conversely, in semester two, they both completed 100% of their assignments. Overall, Figure 6 shows that students assignment completion percentages were lower in semester one than semester two for this subset of students.

Analysis of Students' Perception of Their Engagement

Each week students completed a Google form called *Weekly Check-in*. The Google form served two purposes, to show authentic care to my students and to collect data regarding their perception of their own engagement. The questions designed to care for my students included "How are you doing/feeling? Options: Physically? Emotionally? Mentally?" and "As your teacher, is there anything I can help you with right now? do for you? Is there anything I should know?" The questions designed to collect data included "On a scale from 1 to 5, how engaged in this class do you feel like you were this week? (Please be honest; it will not be used in your favor or against you in any way.)" and "What influenced your engagement/disengagement this week?" It is the later of the two questions that I have analyzed in this section (Appendix B).

Student Perception of Engagement Levels

Students were asked to report on a weekly basis how they felt their level of engagement was on a scale of one to five; one being *not engaged at all* to five being *completely on task and engaged*. Table 6 shows the weekly responses of each student for the duration of the 10-week study. It is important to note that no data was collected for week 7 due to an error in sending out the form. Additionally, some students did not complete the form every week. This is signified by the blank spaces in the table.

Table 6

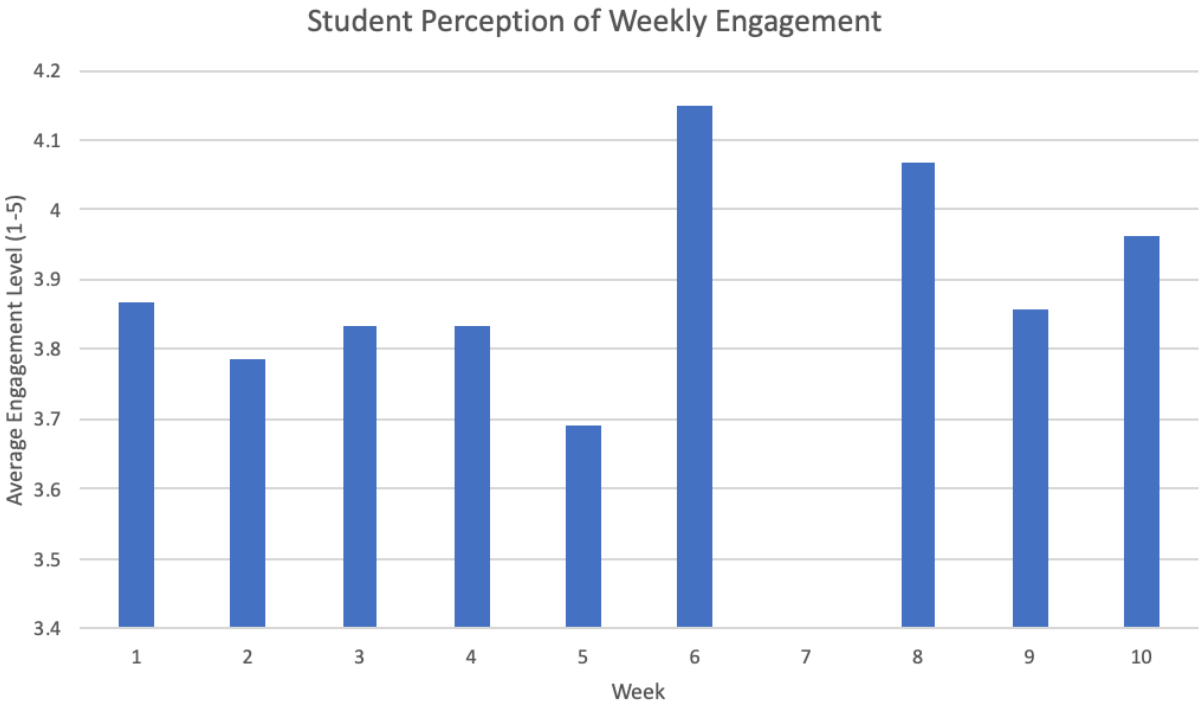
Student's Perception of Weekly Engagement Levels

Student #	Students' Perception of Their Weekly Engagement Levels								
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 8	Week 9	Week 10
1	5	4	5	5	5	5	5	5	5
2	4	4	4	4	4	4	4	4	3
3	4	5	5	3	5	5	4	4	4
4	4		3	3	3	3	3	3	3
5	3	4	4	4	5	5	5	2	5
6	5	5	5	5	5	5	5	5	5
7	4	4	4	4					
8	3	3	4	4	3	4	3		4
9	4	4	4	4	5	4	4	4	4
10	4	5	5	4	3	5	5	5	5
11	3	4	4	4	4	4	4	5	
12	5	5	4	5	5	5	5	4	5
13		4	3	3	4	4	3	5	4
14		1	3	2	2	3		3	3
15	3		4	4	3	4	4	4	4
16	4	4	3	4	4	4	4	3	3
17	3						1	4	3
18	5	4	3	4	4	5	5	5	5
19	3	3	3	4	4		5	4	4
20	4	4	4	3	3	3	2	1	
21	4			4					
22	3	4	5	5	4	5	5	5	5
23	3	3	2	4	4	4	4	5	5
24	4	4	3	3	4	4	4	3	4
25	5	5	5	5	3	5	5	5	5
26	3	3	3	3	4	3	4	3	3
27	4	3	4	4	4	4	4	4	
28	4	4	4	4	3	4	5	3	3
29	3	1	3	3	2	3	3	3	3
30	5	5	5		5		5		
31	3	4	4	4	2	4	4	4	3
32	5	3	3	3	4	4	4	3	3

To identify trends, weekly averages were calculated from the participants' data. This is displayed in Figure 7.

Figure 7

Average of Students' Perception of Their Weekly Engagement Levels



According to these data, students' perception of their engagement was significantly different from the data previously analyzed using their assignment completion rates. *Perceived* engagement level averages were between just below 3.7 to almost 3.9 for the first five weeks of the study. However, students perceived their engagement levels to increase in weeks six and week 8 to an average of over 4. In week nine they drop slightly to between 3.8 and 3.9, and rise to almost 4 again in week ten. These data show that overall, according to their own accounts, students' engagement improved over the 10-week study.

In order to better understand these data, Table 7 displays the weekly levels of students' perceived engagement based on the number of students per engagement level and the corresponding percentage. The calculated percentages were based on the number of students who submitted the form each week, not the total number of participants in the study.

Table 7

Number of Students Per Level of Perceived Engagement by Week

	Student Level of Engagement				
Week	Not Engaged at All 1	2	3	4	Completely Engaged and On Task 5
1	0(0%)	0(0%)	11(37%)	12(40%)	7(23%)
2	2(7%)	0(0%)	6(21%)	14(50%)	6(21%)
3	0(0%)	1(3%)	10(33%)	12(40%)	7(23%)
4	0(0%)	1(3%)	8(27%)	16(53%)	5(17%)
5	0(0%)	3(10%)	8(28%)	13(45%)	5(17%)
6	0(0%)	0(0%)	5(19%)	13(48%)	9(33%)
8	1(3%)	1(3%)	4(14%)	12(41%)	11(38%)
9	1(3.5%)	1(3.5%)	8(29%)	9(32%)	9(32%)
10	0(0%)	0(0%)	10(39%)	7(25%)	9(35%)
Totals for All 10 Weeks	4(2%)	7(3%)	70(27%)	108(42%)	68(26%)

We can see from these data in Table 7 that the number of students who felt that they did not engage at all during the 10-week study was only four. Additionally, from Table 7 we see that it was a different student in each occurrence of perceived nonengagement. There was a total of seven occurrences and only 3% of the time where students recorded a two as their level of engagement. Students ranked their level of engagement a four 42% of the time and a level of three and a level of five were reported almost equally with 27% and 26%, respectively. The percentage of time that students reported being fully on task and engaged remained mostly steady the first three weeks at 21-23% and declined slightly to 17% in weeks four and five. In week six it climbed to 33% and even more in week eight to 38%. Then in week nine it dropped to 32% and in week ten it increases again to 35%. Overall, these data showed that students' perceptions were that their engagement increased throughout the 10-week study.

Variables Affecting Student Engagement

The second question on the Google form asked students to report what affected their engagement each week. In order to not limit the responses received from students, the question was set to receive short answer text. When this data was analyzed, 10 themes emerged that determined how the data were sorted. The themes that emerged for what affected student engagement each week included *wanted to get it done*, *tired or rested*, *busy*, *understood concepts*, *didn't understand concepts, desire for good grades*, *class activities*, *student's desire to make changes to improve*, *like the content*, and *stress/mental/physical health*. The goal of this project was to implement strategies to foster caring relationships with my students in hopes that it would lead to improved engagement in my class. However, according to their responses, their decline or increase in motivation to engage in my class was not due to them feeling cared for or valued in my class through the strategies that were implemented.

There were, however, responses to the last question on the form that showed that the strategies that were implemented did make students feel cared for in my class. Each week I asked students through the form, "As your teacher, is there anything I can help you with right now? do for you? Is there anything I should know?" This was not a required question, so students did not have to respond. Student responses that illuminated their appreciation of my efforts are presented in Table 8.

Table 8

Student Quotations as Evidence of Feeling Authentic Care

Week of Response	Student Response to Question "As your teacher, is there anything I can help you with right now? Do for you? Is there anything I should know?"
1	"No, I think you are doing as much as you can in this situation and to me at least it means a lot!"
2	"No thank you, but thank you for caring for us."
8	"Nope, but thank you for being a really good teacher in the way that you teach and care about your students! :D"
8	"I'm actually enjoying math this year and I feel like I just enjoy your class in general because Algebra 1* was one of the only class I enjoyed Freshman year. So I just feel like being in your class is helping me mentally prepare for some other things."

*This student was in my Algebra 1 class their freshman year.

The quotes included in Table 8 showed evidence that students were feeling cared for in my class. This verified that the strategies that were implemented worked as intended. Although the student responses regarding the causes for their engagement level did not show that feeling cared for had a direct impact on their engagement during this 10-week study, it was still a valuable outcome.

Additional data were collected through students' individual communications with me on the zoom chat or email. I had many interactions with student 17 during my study. Student 17 began to struggle with assignment completion second semester during half-chapter 6B. Student 17 was my only senior in this year's Algebra two class. I reached out to them on many occasions during which student 17 was very apologetic for their lack of engagement. Additionally, during half-chapter 6B, they communicated to me via email and on the Weekly Google form Check-in that they wanted change their habits and try harder to engage. Their assignment completion did improve the next half-chapter from 24% in 6B to 64% in 9A.

Another student in my study, student 20, struggled to engage in online learning. I have a great rapport with this student, as they were in my class last year for Algebra one. Evidence that I

had a great rapport with them included that they shared a lot of stories with me on the Weekly Google form Check-in and their mom mentioned in an email to me that student 20 considered me their school mom. Even though they knew that I cared, they struggled to engage. This student had recently been diagnosed with Attention Deficit Hyperactivity Disorder (ADHD), which was the cause of many of their struggles during distance learning. Even so, this student's effort in my class was evident to me.

Summary

The purpose of this action research project was to determine if showing authentic care to my students would improve their engagement in my class. Numerous strategies to show authentic care were implemented both at the start of the academic year, as well as throughout the 10-week study. Quantitative data were collected on the levels of student engagement through the Daily Padlet Check-in participation and Assignment Completion, as well as students' perception of their weekly engagement. Student engagement in the Daily Padlet Check-in and Assignment Completion rates declined overall throughout the study. However, students' perceptions of their engagement level increased over the course of the study. There was a subset of students who struggled to engage in the first semester that improved their engagement during the second semester of the academic year. Qualitative data was collected as well in the form of students' explanations of what affected their levels of engagement each week as well as student communication with me recorded in my researcher journal. The data from the Weekly Google form Check-in did not provide support for students' engagement levels being affected by the strategies implemented to show authentic care. However, some student's personal interactions with me did show that they wanted to improve their engagement in my class, but other factors may have hindered their efforts.

In the next chapter, the results of this study will be discussed more intensely, as well as how they relate to the literature and theories surrounding student engagement. Key findings and implications will be discussed as they relate to further areas of study and my practice as a teacher leader committed to educational equity.

Chapter V

Conclusions and Next Steps

It is the goal of every successful educator to have students to engage in their learning. Research showed that it was of vital importance to their students' success (Chase et al., 2014; Klem & Connell, 2004; Newman, 1992). Unfortunately, students' engagement in their learning declines as they progress through their education (Brenneman, 2019; Collier, 2015; Hodges, 2018; Newman, 1992; Ryan & Deci, 2020). I have witnessed this decline in engagement with my high school mathematics students. But fortunately, there were several factors that have had positive effects on student engagement. The one that stood out in many studies in urban schools showed that a strong teacher-student relationship can positively affect a student's engagement in the classroom (Kelly & Zhang, 2016; Klem & Connell, 2004). However, in my review of literature, I did not locate research that took place in suburban schools, especially students participating in remote learning. Therefore, this action research project aimed to answer the question: *How does the implementation of strategies to garner stronger relationships with my students affect their engagement in my Algebra 2 classes?*

I implemented numerous strategies to show my students the care I have for them. Since connecting with my students became increasingly important due to distance learning because of the COVID pandemic, several strategies were implemented at the beginning of the school year. These strategies included the Daily Padlet check-in (Appendix A), increased email and Zoom chat communication to touch bases with the learners, and creating relevant themed (Minions, Star Wars, Monster's Inc.) agenda slides. Additional strategies, such as the Weekly Check-in (Appendix B), playing music as students enter our Zoom room, and responding to Weekly Check-ins began at the start of this project. It was my hope that while distance learning created

barriers to connection, applying these strategies would combat those barriers and create valuable connections with my students. While creating authentic and caring relationships with my students was the priority, because I also cared about their academic success, it was my hope that, as research in urban schools has shown (Kelly & Zhang, 2016; Klem & Connell, 2004; Martin & Collie, 2019; McHugh et al., 2013), it would lead to higher levels of engagement in my class.

In chapter IV, I presented the findings from the data collected during my 10-week action research study. These data showed that many of my students knew that I cared about them, but the data did not present a strong indication that feeling cared for caused an increase in engagement during the 10-week study. There was, however, a small subset of students whose engagement levels did increase during the study.

This chapter is structured in the following order: summary of findings, interpretation of findings, and plan for future action. The summary of findings presents the data collected from three sources: the daily Padlet check-in, student assignment completion scores, and the weekly check-in. The next section offers an interpretation of the findings, which includes a reflection on limitations of the study and a brief summary of the action research project. The last section considers plans for implementing future action as it pertains to the content discussed in this action research project.

Summary of Findings

After I implemented strategies to show authentic care for my students, I utilized a mixed methods approach in order to examine the effects on student engagement. I used three instruments to collect student engagement data for the entirety of the 10-week study: The Daily Padlet Check-in (Appendix A), Student Assignment Completion scores, and the Weekly Check-

in Form (Appendix B). The participants in the study included all 32 students in my 4th period Algebra 2 class.

The Daily Padlet Check-in was implemented as an attempt to connect with my students at the most basic level by getting to know them and also as engagement data since I recorded their daily participation. I analyzed student Assignment Completion scores to determine student engagement levels as the study progressed. I collected additional data on engagement through the Weekly Check-in where students shared their own perceptions of their engagement for the week and what contributed to their engagement levels.

Daily Padlet Check-in

Analysis of the data collected from the Daily Padlet Check-in demonstrate that student engagement levels declined over the course of the 10-week study. These data showed that total class (N=32) participation in the Daily Padlet Check-in decreased as the study progressed. Half the class (n=16) participated at least 90% of the time. Therefore, it is the other half of the class (n=16) that this study aimed to impact. Unfortunately, these data show that 25% of participants (n=8) showed little to no engagement in the Daily Padlet Check-in during the entire study. Therefore, the relationship building strategies that I implemented appeared to have no impact on these participants' engagement levels. The other 25% of participants (n=8) that had limited participation throughout the study showed varying results. From this subset of eight students, 13% (n=1) showed an increase in engagement in the Padlet as the 10-week study progressed.

Thirty-eight percent (n=3) of this subset had participation that was sporadic, meaning that there was no indication of a decline or increase in engagement. The remaining 50% (n=4) of the participants in this subgroup showed a decline in engagement as the study progressed. That is to say that their engagement levels in the Padlet near the beginning of the study were higher, and

they did not or rarely engaged in the Padlet towards the end of the 10-week study. These data indicate that the strategies implemented to show authentic care for and create strong relationships with my students did not positively impact their levels of engagement, as hoped and as previous research had shown (Ennis and McCauley, 2002; Liou et al., 2016; Kelly & Zhang, 2016; Klem & Connell, 2004; Martin and Collie, 2019; McHugh et al., 2013).

Student Assignment Completion

A second form of engagement data I recorded were assignment completion scores. Since assignment scores were data that I recorded as a teacher for assignment grades, I had these data beginning at the start of the academic year. The first semester contained chapters one through four and the second semester began with chapter five and continued through the completion of my project. Analyzing these data from the beginning of the year allowed me to use the initial assignment completion scores as baseline data to determine if there was an effect on student engagement due to the interventions implemented from the start of the academic year. First, the assignment scores were analyzed as a whole. This analysis showed that students began each semester with high assignment completions scores, but a gradual decrease occurred with each half-chapter of study with the exception of the slight increases that occurred from 3B to 4A and 5B to 6A. One possible explanation for this was that students began each new semester with the desire to perform well in each of their classes but lose momentum as they get busier with assignments in each class and with commitments outside of school. This was evident from some of the responses on the Weekly Google form Check-in we will discuss later. Additionally, students lost motivation this year more than any other year due to the added difficulty of staying on task during distance learning.

When the video and practice assignments were analyzed separately for the duration of the study, the video assignments showed a slow, steady decrease in engagement from over 98% at the beginning of the study to over 92% during the last half-chapter. The practice assignments showed more drastic results with an initial increase from 91% to over 94%, and then a sharper decline in engagement to under 91% and then just under 86%. Regardless, whole class data showed that while student engagement in their assignments initially increased at the beginning of the study, overall, their levels of engagement declined.

Since practice assignments were an area of engagement student struggled with the most, it deserved a closer look. Therefore, I also analyzed the engagement levels per student. These data showed that there were 14 students who had 100% participation throughout the 10-week study. Since their engagement levels did not change, I analyzed the remaining 18 students' engagement levels more closely. Thirty-three percent (n=6) of these students were also in the subgroup of participants whose Padlet engagement levels changed during the study. When comparing these two data, there was no correlation or relationship between students' Padlet participation and their assignment completion. Upon closer analysis of the 18 participants, 22% (n=4) had increased engagement in their assignments as the study progressed. Another 11% (n=2) showed an initial increase from the first to the second half-chapter, and then a decline for the remaining two half-chapters. Another 11% (n=2) showed increased assignment participation for the first three half-chapters but then a decline in their engagement in the last half-chapter.

Conversely, 6% (n=1) showed declining engagement in assignments for the first three half-chapters and an increase for the last half-chapter. Another 6% (n=1) had a small increase from the first half-chapter to the second, and then a sharp decline followed by a sharp increase. However, the largest percent of this subgroup, 44% (n=8) had assignment completion rates that

declined over the four half-chapters of the study. Overall, these data showed that engagement levels in assignment completion decreased over the course of the 10-week study, therefore not supporting my notion or previous research findings (Ennis and McCauley, 2002; Liou et al., 2016; Kelly & Zhang, 2016; Klem & Connell, 2004; Martin and Collie, 2019; McHugh et al., 2013) that indicated implementing strategies to show authentic care for my students would increase levels of engagement in my class.

There was one subset of students (n=7) who struggled with assignment completion during the first semester of the academic year whose assignment completion scores I analyzed for the whole academic year to determine whether showing authentic care improved their engagement. Overall, this subset of students showed improved engagement in second semester assignment completion when compared with their first semester half-chapter averages. Additionally, due to their struggles with assignment completion, these are students that I reached out to on a regular basis. While this subset is small, at only seven students, it is almost a quarter of the class. And when we consider that only 18 students had engagement levels that changed, seven of 18 students, almost 40%, with increased assignment scores is significant enough to make further inquiries with a larger sample size and a longer study.

Student Perceptions of Engagement Levels

An analysis of the data on students' perception of their own engagement that was recorded in the Weekly Check-in contrasted with the previous data collected as it showed an overall increase in engagement. Students ranked their levels of engagement on a scale of one to five, where one was *not engaged at all* to five being *completely on task and engaged*. During the first four weeks, the mean of students' perception of their engagement levels hovered around 3.8. It declined in week 5 to just below 3.7. In week six and eight it increased to over 4.1 and just

under 4.1 respectively. (Note, no data were collected in week 7 due to an error). Week 9 perceived engagement declined to above 3.8 and then increased again in week 10 to almost 4. Largely, these reported levels of engagement indicate an increase in students perceived engagement levels over the course of the 10-week study.

Student Perceptions of Factors that Impact Engagement

The second question on the Weekly Check-in asks students to report what affected their engagement that week. When I analyzed these data, eleven themes emerged into which all responses could be sorted: *wanted to get it done, tired or rested, busy, understood concepts, didn't understand concepts, desire for good grades, enjoyed class activities, student's desire to make changes to improve, like the content, and stress/mental/physical health*. Unfortunately, none of these responses support the idea that students' engagement will increase when students feel authentic care from their teachers, as research suggested (Ennis and McCauley, 2002; Liou et al., 2016; Kelly & Zhang, 2016; Klem & Connell, 2004; Martin and Collie, 2019; McHugh et al., 2013).

While these data overall do not support the belief that showing authentic care for students will improve their engagement, students feeling cared for is a valuable outcome. Whereas, I wanted to see my students succeed, and improved engagement has been shown to improve learning outcomes (Chase et al., 2014; Klem & Connell, 2004; Newman, 1992), their success in my class is not what is most important. What is most important is that my students feel valued and important. Thirteen percent of participants (n=4) shared specifically on the optional part of the Weekly Check-in that they felt cared about. It is my hope that this implied that all my students felt cared about. While I desire that this leads to higher levels of engagement so these students could be successful in my class, the most important goal had been attained.

Interpretation of Findings

After a comprehensive analysis of the quantitative and qualitative data presented in this action research project, I can conclude that my students do feel cared for because of the strategies implemented. However, contrary to the anticipated result, with the exception of a subset of seven students, it was determined that, overall, student engagement declined over the 10-week study. Therefore, I was not able to establish that students feeling cared for lead to an increase in their levels of engagement in my class, as desired.

Authentic Care

The goal of this study was to determine if students' feeling of being cared for would impact their level of engagement in my class. However, students feeling cared for is, by itself, of paramount importance. Teaching remotely made this much more difficult and therefore, I had to be intentional about implementing strategies to show authentic care. The most important of these strategies was to change the tone of every communication with my students. I regularly checked in with my students who had the lowest levels of engagement, but I made it about their well-being as a person and not about their performance in my class. I also sent a weekly message to all my students commending them for what they accomplished that week. I end each communication with a salutation for them to "take care and make good choices" or "have a wonderful weekend and, as always, make good choices." It is my hope that students feel the authentic care that I have for them in every communication I send.

While there were no specific measures collected to determine whether students felt cared for from the strategies implemented because I did not want to lead students to that conclusion, there were several students who shared how they felt in the optional question on the Weekly Check-in. One student commented that my effort meant a lot to them. Another student stated,

"thank you for caring for us." A third student shared, "thank you for being a really good teacher in the way that you teach and care for your students!" A student whom I had previously, reiterated that she is once again "actually enjoying math" and that being in my class is helping her "mentally prepare for some other things." Although these assertions represent 13% of the class, it is important to note that I did not ask students if they felt cared for by me. Hence these students chose on their own to share.

Another important aspect of the Check-in form to disclose is how much students shared with me about what was going on in their lives. The optional, last question asked, "As your teacher, is there anything I can help you with right now? Do for you? Is there anything I should know?" Multiple students shared openly about things such as: their plans for the weekend, the music they like, their anxiety about upcoming AP tests and college, that they talked to their cousin from the east coast, that they like a guy and he likes them back, or that they are teaching their brother robotics. In many other responses, students took the time to thank me, encourage me, compliment me, or just leave a smiley face. Students sharing about their personal lives with me showed that I have achieved the type of student-teacher relationship desired through the strategies implemented to show authentic care.

Student Engagement

What was surprising about these results is that clearly from the aforementioned data, some of the students in my class felt cared for. Yet, contrary to research conducted (Ennis and McCauley, 2002; Liou et al., 2016; Kelly & Zhang, 2016; Klem & Connell, 2004; Martin and Collie, 2019; McHugh et al., 2013), the feelings of being cared for did not lead to higher levels of engagement for most students according to the analysis of these data.

As reported on the Weekly Check-in, there were many causes for students' perceived levels of engagement. As we learned from compiling these data, these causes took more prominence in students' lives than their relationship with me as their teacher. Some of these causes included: mental/physical health and stress, their desire for good grades, their busy schedules, and whether they did or didn't understand the concepts being covered. It is also important to note here that the content tends to increase in level of difficulty as the year progresses, and therefore that difficulty could have had a negative impact on engagement levels. Furthermore, this study took place during the COVID-19 pandemic. There are many factors related to this pandemic that could have impacted student engagement levels. Some examples unrelated to school include student anxiety or fear regarding COVID-19, as well as being isolated from their extended families and peers. Additionally, during the pandemic, my district was completely shut down and students were learning remotely. While the district ensured that all students had access to a Chromebook and a Wi-Fi hotspot, some students did not have access to the same forms of technology as others. This could have had an effect on their motivation. Additionally, by the time my study began, students had been learning remotely for six months and their ability to remain undistracted by more appealing things in their at-home surroundings was beginning to wane and they were exhausted with learning through a Zoom meeting instead of in a traditional classroom.

It is important to note that 50% (n=16) of participants engaged in the Padlet over 90% of the time. Additionally, student assignment completion class averages never went below 83%. Also, there were seven students, 22% of the class, who completed 100% of their assignment for the entire year and another five students, 16% of the class, had assignment completion percentages that were 95% or above. These students could just have a strong work ethic or be

internally motivated, but it is also possible that they were able to maintain that beginning of the year motivation throughout the year because they felt cared for in my class. Nevertheless, it is impossible to determine what may or may not have affected their levels of engagement retrospectively. Therefore, I do not attribute these learner's success to the strategies that were implemented.

Also, there were various occurrences throughout the study that showed an increase of engagement levels, even in short increments. Although it cannot be inferred from the data collected that these increases were due to the strategies implemented to show authentic care, they should not be disregarded either.

Reflections on Limitations

This action research project occurred over a 10-week period. Strong and trusting student-teacher relationships take a good amount of time to develop. While some strategies to show authentic care were implemented at the start of the academic year and proved to be effective in creating a positive relationship with many, if not all my students, the study was not long enough to accurately determine its effect on student engagement. Moreover, it is possible that engagement data were skewed due to the limited picture of engagement levels it provided. This study would be more effective if it were conducted over the course of an entire school year at minimum.

Another limit to the study is the small sample size. Because the sample size was so small, a minute number of students were able to have a large effect on engagement data, particularly in the assignment completion data analysis. Also, due to such a small sample size, we cannot use these results to generalize about other populations or schools.

Distance learning due to the COVID pandemic is another limitation to note. It was much more difficult to demonstrate authentic care to my students via Zoom meetings than it would normally be if the study had taken place in the classroom. Most students rarely turned on their cameras during my class time with them, as we were not allowed to require it. Additionally, most class time consisted of students completing assignments and many did not engage with me at all. A few students regularly conversed with me when they had questions about the content we were learning. It was up to me, in most cases, to reach out to students, and even then, there were times where there was no response. As the year continued, students became more and more disconnected with each other, with their teachers, and with the academic content, as well as being distracted by what surrounded them in their homes. The choice for students to engage in their learning became harder and harder for them to make as the year progressed. This became a strong barrier to student-teacher relationships and to academic engagement.

Finally, my role as both teacher and researcher may have influenced some student responses to the Weekly Check-in questions. I specifically stated that their responses would not count for or against them in any way, but regardless of this disclaimer, students may feel revealing a low level of engagement to their teacher would be held against them in the future or that a positive response would impact their grade or my perception of them.

Plan for Future Action

The results of this study did not divulge the outcomes that I had hoped for; however, there are many improvements that could be made in order to create a more reliable study. Most notably, the length of the study could be increased in order to examine more accurately the effects strong student-teacher relationships have on engagement. In future research it would be interesting to see the results of asking students if they felt cared for and if so, did they feel that it

caused them to engage more in the class. It would also be noteworthy to have them disclose how much they feel cared for in other classes and record their levels of engagement in those classes to analyze if feeling cared for tended to improve engagement levels in a broader sense. Furthermore, it would be significant to compare both forms of student engagement data directly with each other and with the student reported perceived levels of engagement to determine if they coincide. Moreover, dividing the data up in the same way, whether it be by week or by chapter, would lead to more connections in the data sets and possibly more implications. Additionally, it would be interesting to see the results of a study completed during in-person learning.

While this action research project did not lead to the desired results as far as overall increased levels of student engagement, it did confirm that several of my students feel that I care for them. Even standing alone, this was an important aspect to being an effective educator. It also coincided with my district's recent focus on well-being. Student well-being is directly affected by their relationships and how much they feel cared about by those around them (Deci & Ryan, 2000; Deci & Ryan, 2008; Maslow, 1943; Ryan & Deci, 2020). Therefore, I will continue to implement the current strategies that I am employing, as well as continually research more effective strategies to connect with my students, especially as we move back to in-person learning.

As a transformative teacher leader, it is also my responsibility to share my findings with my fellow educators. Particularly the strategies that proved to be effective in creating strong student-teacher relationships need to be shared, since research showed that unless teachers are purposefully implementing these strategies, their students likely do not know they care (McHugh et al., 2013). Therefore, it is imperative that I empower my colleagues so that their students can

experience the care I know they feel for their students. I will begin this work by sharing the results of my project with my Algebra two teaching team. Once it shows to be effective amongst this group, I would like to share it with the entire school or district through leading a professional development session using my project as the basis for encouraging this larger group of colleagues to develop authentic relationships with their students.

Another recent focus in my district is equity. One form of showing authentic care for my students consists of highlighting students' cultural capital (Liou et al., 2016; Yosso, 2005) in my classroom. This is of vital importance in promoting equity for the systematically underserved students of color. It is essential to show authentic care to my students of color similar to Lane's (In Press) notion of a *politicized ethic of care*. Valenzuela (1999) also shared the importance of demonstrating this type of care (e.g., cariño) to the Mexican American students who participated in her study. Educators must elevate all student cultures rather than persisting in the *subtractive schooling* (Valenzuela, 1999) that the educational system reduces to. To educate myself more completely and to support my colleagues of color, I have recently joined an Employee Resource Group (ERG) focused on Black Indigenous People of Color (BIPOC) staff support to address the ongoing discrimination and hate that has persisted throughout our country. As a white woman, I want to do my best to be an ally for my fellow educators of color and continue to identify and address my own areas of bias, while doing all I can to support my students of color.

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Appendices

A. Padlet Check-in Questions

B. Weekly Google Form Check-in

Appendix A

Padlet Check-in Questions

1. What is your favorite Olympic sport to watch?
2. What is your favorite type of cookie?
3. What is your favorite way to relax?
4. What is your favorite sauce?
5. What is a fictional place you would like to visit?
6. Add an emoji to the Padlet that represents your current mood/feeling.
7. How was your weekend?
8. Any plans for the upcoming weekend?
9. What is your favorite thing to do in the snow?
10. What is your favorite Disney movie?
11. What is your favorite fruit?
12. What is your favorite type of car?
13. What is your favorite breed of dog?
14. If you could have any super power, what would you choose?
15. What is your favorite fast food?
16. What is your favorite type of cake?
17. In honor of pi day, what is your favorite type of pie?
18. What is something that you are scared of?
19. What is your favorite kind of soup?
20. What is something that usually makes you laugh?
21. What is something that you do that bothers other people?

22. What show have you been watching lately?

Appendix B

Weekly Google Form Check-in

Weekly Check-In

I want to know how you are doing, not just in my class, or even school, but how YOU are doing. Distance learning makes this more difficult so this form is my way of checking in with you. Feel free to share as little or as much as you feel lead.

First Name:

_____

Last Name:

_____

Class Period:

_____

On a scale of 1 to 5, how engaged in this class do you feel like you were this week? (Please be honest; it will not be used in your favor or against you in any way.)

1 2 3 4 5

Not engaged at all — Completely on task and engaged

What influenced your engagement/disengagement this week?

_____

How are you doing/feeling? Options: Physically? Emotionally? Mentally?

_____

As your teacher, is there anything I can help you with right now? Do for you? Is there anything I should know? (This is not a required question.)

Please know that I am HERE for you. And so are several crisis hotlines which are TOTALLY confidential and open 24/7.
-Contra Costa Crisis Center & Suicide: 211 or 800-833-2900 or text 'HOPE' to 20121, GRIEF: 800-837-1818, HOMELESS: 800-833-2900

-National Suicide Prevention Lifeline: 800-273-8255 OR chat online:
https://suicidepreventionlifeline.org/chat/
-Crisis Text Line: Text 'START' to 741-741
-The Trevor Project (LGBT Crisis Intervention and Suicide Prevention Hotline): 1-866-488-7386 OR text 'START' to 678-678