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Modeling Growth Mindset: How Parental Involvement Benefits Student Cognitive Development

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Modeling Growth Mindset: How Parental Involvement Benefits Student Cognitive Development

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By

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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

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By

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Physical Education

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Dr. Margaret Coughlan, Research Advisor

Student support in school and beyond is essential. This action research study asked parents to model growth mindset language at home with their child in connection with their learning and their approach to running in physical education. Previous research indicates two relevant problems facing students during the middle school age. First, mental health disorders start in youth and can continue into adulthood (Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015). Second, girl-identified learners experience inequity in sports which negatively impacts their mental health and academic success (National College Athletic Association, n.d.; Toporek, 2015). Over eight weeks, data were collected from parent surveys, student journals and reflections, and teacher-researcher field notes. The triangulation of data sources and analyses led to conclusions that 1) parent involvement with their child's learning in physical education increased through the use of modeling growth mindset language at home and 2) children's communication also increased.

Dedication

To my husband. For your patience and feedback in reading my drafts and talking through my ideas and research with me. And, above all, your love and support for me throughout the year, making it possible to have and raise our newborn son while attending graduate school.

In loving memory of my mom, who passed away a few weeks before I completed my master's degree. You always gave me the strength to do more than what seemed possible.

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Introduction

Childhood mental health disorders can have lasting effect into pre-adolescence and adulthood. In middle school, students are faced with new challenges academically and socially during a pivotal time in their lives. At this age, there has been a rise in mental health for girls at a faster rate than boys ("Women and Anxiety", 2018). According to Appleby and Foster (2013), physical activity and participating in sports can encourage girls to build their self-efficacy, confidence, and improve anxiety. However, there are established gender roles in society that discriminate against females in sports (Senne, 2016). As such, girls participating in physical education could develop negative feelings towards physical activity because of the perceived masculinity of sports, social influence from home and peers, and therefore could be developing the belief that they are not good enough, strong enough, or tall enough to participate in sports in comparison with boys. A mindset that attributes to a lack of ability may inhibit girls' growth within sports, in addition to other self-beliefs of social barriers such as gender inequality and discrimination.

Carol Dweck's (2006) mindset theory proposes that human beings have two mindsets: fixed and growth. The *fixed mindset* is the belief that a person's qualities cannot be changed. The *growth mindset* sees intelligence as being developed over time through learning, effort, and talent. A correlating theory with foundations in John Gram Nicholls' (1984) work is the achievement goal theory. Nicholls theorized that a *task climate* represents hard work and person's development. On the other hand, an *ego climate* represents success based on ability and punishment for failure. Applying these two theories, students who have a fixed mindset in a task

climate classroom could develop a growth mindset over time from praised-based effort and goal-oriented teaching.

A physical education classroom climate that supports students' learning, trying their best, and students' unique contributions are shown to improve enjoyment in class activities (Johnson, Erwin, Kipp, & Beighle, 2017). When students are motivated by their teacher and the teacher has a classroom establishing the norms that failure *and* effort are successes, boy- and girl-identified learners may perceive physical activity as an individual way to improve their performance and participation. Since the mind and body are connected to whole health and wellbeing, students' perceptions and self-beliefs in all academic subjects, including physical education, can also have a positive or negative impact on their academic achievement (Srikanth, Petrie, Greenleaf, & Martin, 2015). Through school support from teachers, staff, and administration, the lens through which educators view physical education can have a lasting impact on gender equity, academic achievement, and students' mindsets.

Additionally, there is a connection that needs to be made with parents' and students' learning to help support students at every level. A recent study shows that parents lack understanding in what children are learning in physical education (Jaekwon, 2015). Since parents are influential role models and authority figures for their children, it is important to incorporate more communication with parents and students' learning. Unfortunately, girls may receive less encouragement from family members to be physically active and to participate in sport (Telford, Telford, Olive, Cochrane, & Davey, 2016). I developed this action research project (ARP) to connect the problem of mental health and gender gaps in physical activity and sport with the continued development of my students' mindsets.

Statement of the Problem

California schools are seeing an increase of mental health issues in students. According to the California Department of Education (2018), former Governor Jerry Brown signed legislation under the Mental Health Services Act (2004) that increased the support and treatment for students in schools. Under this act, California passed Proposition 63 which focuses on prevention and wellness, specifically establishing the Student Mental Health Initiative (SMHI) to strengthen student mental health across K-12 educational systems ("Student Mental Health Plan," 2010). Mental health issues affect academic achievement, and it is not the work of a teacher alone that can make a difference but the collaboration of the school and community (Frauenholtz, Mendenhall, & Moon, 2017). This allows schools to take a stronger role and more responsibility in helping students with mental disorders, especially for prevention at an early age. Children who are facing mental disorders at an early age may increase the risk of having mental disorder later in life (Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015). According to the Anxiety and Depression Association of America, girls from puberty to age 50 are twice as likely as men to have anxiety disorder ("Women and Anxiety," 2018). This statistic begs the question, can reducing the gap in gender roles in sports and physical activity prevent or reduce girl learners' anxiety?

In 1972, Title IX provided equal access to all programs and activities that are federally funded, including sports (National College Athletic Association, n.d.). Since the law passed, classrooms across the nation went from sex-segregated physical education classes to boys and girls in the same class, learning the same sports, and participating in the same fitness and physical activity as one another (Landers, 1979). Although more women play sport today (two in five, compared to one in 25 prior to the passing of Title IX), compared to the wealthy and white

population, there is still a wide gap in discrimination for girls of color and socioeconomic status. The National Women's Law Center (NWLC) and the Poverty & Race Research Action Council (PRRAC) found that schools with large populations of students of color offer fewer athletic opportunities and limited equality between the number of boys and girls sports (Toporek, 2015). The lifelong outcome to denying equal opportunities for girls to play sports may have an effect on girls' health and academic and economic benefits that come with participating.

The implicit theory of intelligence (Dweck, 2000) and mindset theory (Dweck, 2006) support the belief that girls and boys can develop a mindset that focuses on success from their own failure and effort, and from others' praise for working hard and trying. Operating from these paradigms can challenge school stereotypes such as "girls aren't good at sports" and "boys aren't good at English" and also help to cultivate a healthy mind. In Schleider and colleagues' metanalysis of 17 studies, students with a fixed mindset had more mental health problems compared to students of growth mindset, and 58% of the students with a fixed mindset were more likely to show symptoms of anxiety and depression (Schleider, Abel, & Weisz, 2015).

The implicit theory of intelligence explains more about motivation, behavior, intelligence, failure, and learning (Dweck, 2000). From this theory evolved the mindset theory (Dweck, 2006). According to Dweck, there are two mindsets, the growth and fixed mindset. In my physical education classroom, a student with a fixed mindset typically feels that their performance on a run could not improve over time, that in their mind they would always be a "slow runner." A student with a growth mindset would implement what they have learned through activities and lessons, improve their running over time, and use their improvement as motivation to continue learning. There are multiple studies that support the idea that students with a growth mindset who work hard, do not see failure as a setback but something to learn

from, build resilience and grit, intrinsic motivation for self-improvement and self-efficacy, and achieve more academic success in school (Dweck, 2006; Haimovitz & Dweck, 2017; Snipes & Tran, 2017; Srikanth et al., 2015).

In the past, I have used specific curriculum and lessons to cultivate learners' growth mindset. This includes cooperative learning, differentiated teaching, and modeling growth mindset language. Cooperative learning in physical education is when students use guiding terms and instructions to work in small groups towards a certain goal (Dyson & Casey, 2012). When my students worked at skill stations and moved freely during the class period to improve new skills at different stations, they were demonstrating what differentiated teaching looks like in physical education. Differentiated teaching in physical education is a design to teach content - cognitive and psychomotor – and is demonstrated by students' performance of skills and behavior. Differentiated teaching supports students in their skill readiness, interest, and individual learning profiles (Colquitt, Pritchard, Johnson, & McCollum, 2017, p. 47). In developing a growth mindset in physical education, students not only learn through kinesthetic learning but also through verbal feedback and praise.

In research on modeling language, I found that teachers and parents who frame their language to reflect the growth mindset have a more positive impact on students' implicit theories of self-belief. In one study, parents and teachers who praised the process of learning, effort, and failure reported the most students demonstrating the growth mindset (Haimovitz & Dweck, 2017). Some of the rhetoric I used in my previous classes to promote self-improvement and learning is, "Yes, Dawn! Look how focused you've been at getting better at dribbling. You can now dribble with control. Great effort and concentration this week!" and "You knocked 30 seconds off your previous time! What did you do differently?" Hellmich and Hoya's (2017)

study on implicit theories of students' reading found whether students are good at reading or not could be predicted by the feedback provided by parents at home about students' effort. The study further explores the discrimination within academic subjects because more girls than boys were supported at home by their parents to read and for their effort. This brings up the question: How do parents impact girls and boys differently regarding physical education?

Parents at my school are very involved from school dances to working the hot lunchroom to financial support of the School Funding Foundation and teacher lunches. The school's functionality relies on families' financial and volunteering contributions. Involvement is also heavily tied into the academic success of students. Provided by my school, the 2018 statistics show that this school is ranked in the 98.8 percentile in performance as compared to all schools statewide, and that the average standard test score is 97.91. Despite students' high performance, in 2018, the school opened a Wellness Center to help reach more students with anxiety, stress, and other mental disorders. My school reports that about 1% of the population specifically struggles with mental health disorders like anxiety. However, this does not encompass the 17% of students with an Individualized Education Program (IEP) that includes emotional and behavioral disorder, and students who have not requested to have a 504. The school is acting to improve the health of students while keeping the high academic standards consistent.

Since parents are highly involved in the school's functionality and studies have shown a positive impact of parent support, I was interested to involve parents more in their child's learning in physical education. I wanted to further understand the impact parents could have at home with modeling growth mindset language with their children and how this could impact the student's mindset at school, specifically in physical education and running.

Purpose of the Research

With the rise of mental health disorders in American children, schools and teachers are directly seeing the effects of a student's learning, behavior, emotions, and relationships in the classroom. Research shows that students who develop a growth mindset are more in control of their emotions which leads to long-term academic achievement (Romero, Master, Paunesku, Dweck, & Gross, 2014). In contrast, a two-year study of middle school students found that students who did not receive praise on their effort in math showed a downward trajectory in their grades, believing that their intelligence was stable (Blackwell, Trzesniewski, & Dweck, 2007). These children had the belief that they were not good at math and their ability was stagnant, which could have a long-term effect on their future actions, beliefs and abilities.

Students' beliefs about their abilities may also extend outside of the classroom. In the United States, gender roles and social evaluation of girls who play sports result in negative stereotypes and non-equitable opportunities (Senne, 2016; Staurowsky, 2016). A few examples are that girls who play sports are perceived as "masculine," that girl athletes are constantly being compared to boy athletes' performance, and there is a lack of female role models and attention from media, and unequal pay. Appleby and Foster (2013) reference Tigmann's (2001) research, which confirms that girl-identified learners in sports and physical activity are more likely to develop eating disorders and body dissatisfaction. Adults – including teachers, parents, and principals – can help develop adolescents' implicit thinking about the process of learning and their motivation to learn and bridge the gap between mental health and gender equity in sports and physical activity. The purpose of this research study was to examine the effects of parental involvement on the mindset development of seventh-grade participants in physical education.

Research has shown that it is not an adult's mindset that shapes adolescent mindsets, but the language that the adult uses and the reaction to their failure that impacts development of a growth or fixed mindset (Haimovitz & Dweck, 2017). According to Angela Duckworth's (2016) research on grit and the growth mindset, the actions and behaviors of adults are imitated by children. When adults model growth mindset language that praises effort, progress, and learning, children interpret failures as steps towards success rather than an inability to succeed.

Modeling in the classroom is a technique used by teachers through physical and linguistic demonstrations of desired behavior and a method for students to understand and learn specific skills. Language modeling, specifically through praise and feedback, helps shape children's mindset (Dweck, 2006). Duckworth (2016) furthered Dweck's research by stating that, "language is one way to cultivate hope" (p. 182). Adults who model growth mindset language demonstrate to children a new way to see the world and processes of how to learn. Modeling language challenges children to rephrase their language, as well. Using modeling is one form of teaching that can foster a growth mindset culture that promotes the belief that one's abilities can change and an individual possesses the capability to grow and learn. For example, at home a parent may respond to their child, who completes a run in physical education without stopping, using the following language, "Wow! You didn't give up. What made you keep going?"

I wondered if modeling language at home may help my students improve their approach to physical performance for self-improvement instead of focusing on physical participation for a grade. As such, this action research project was designed to examine the effectiveness of modeling growth mindset language at home in order to keep language and learning consistent between my physical education classroom and a student's home. Prior to this inquiry, I taught my students language and performance strategies to help develop a growth mindset while

creating a classroom culture praising effort and working towards goals. However, I have observed my girl-identified students demonstrating a fixed mindset during running and physical activity. For instance, in sports, girl learners often run with their friends, so they are not compared with the boys. They let the boys tell them where to stand in position on field and how to kick during kickball, even though some of these girls play soccer and softball. When girl learners miss their pass or shot during hockey, they often change groups to avoid looking bad. One example of changing expectations for girl learners in fitness exercises is asking them to do modified push-ups (on knees instead of feet) before trying push-ups. It was my hope that involving parents, while maintaining the same teaching techniques, would help more students learn that they can achieve success in running, no matter their physical ability, and rise to meet difficulties and challenges in physical education using a mindset that believes in self-improvement as the overall goal, not their grades.

Action Research Question

The action research question for this study was*: How does parental modeling of growth mindset language affect seventh-grade students' mentality towards running for self-improvement?* Continued teaching using small group work, goal-oriented activities and fitness, skill stations, grades based on personal improvement in running, and language modeling may help students demonstrate more of a growth mindset in physical education. Through exploring a new variable of parent involvement, my hope was that parents could replicate the language used in class at home to support the implicit theories their child forms about running. Perhaps with parent and teacher support in students' learning, students may develop a mindset of self-belief that could have a lasting effect on their mental health. The goal is that students understand that failure is not a finite reality but that they could see success through failures over time. Hopefully,

in the future, students may be more likely to address social barriers of gender discrimination and racism in their community (or other systemic obstacles).

Limitations

There were several limitations that may have impacted the outcomes of my study. These include time, a small student sample, an overlap of teacher/researcher roles, and demographics. The requirement for my action research project within my institution was to collect data within an eight-week period. Learning and demonstrating learning within eight weeks, especially when it involves the mindset and development of the brain's plasticity to learn, is a short period of time to see meaningful impact and collect data. Additionally, poor weather may have further cut back the number of days my class could run outside and thus limited their application to improve in running physically and mentally. My class had 36 students, a small sample size within the student population at the school, which could have been smaller on running days due to absences, sickness, injuries, and IEP meetings. I have been teaching these students for two consecutive years. As my researcher role evolved for the study, students could have given answers in order to try to impress me or show that they were developing their mindset, when they may not have been. Lastly, the demographics of my class and school may not generalize to other schools. The school is a privileged suburban middle school with a majority of White and Asian students, and only 1% Latinx, African American, Native American, and Pacific Islander.

Positionality of the Researcher

My teaching is centered around the student-centered pedagogy, where students are at the center of learning and have a voice in their learning and education. I typically ask students for feedback on how a physical activity went and what could be better. When my students are tired from a long week, I may adjust my lesson plan to accommodate their physical health. I believe in

the strong association between mental and physical health and that my students can learn to grow mentally in my class, how to exercise their minds, and find ways to relax and cope with stress and anxiety. As a former world-class female athlete, I am familiar with gender discrimination with sports and physical activity around female learners. My school is demographically similar to the school I attended when I was in middle school. It is a privileged socio-economic school with a majority White and Asian student population.

The advantages of my personal and professional beliefs are that I can relate to my students which helps to build relationships. I value students' ideas, and I care about the health of my students, mentally and physically. The first bias that could have been a problem is towards boys and their physical performance. With regards to parental involvement, I also assumed that students have academic support outside of school from parents/guardians and financial support to participate in extracurricular activities. Lastly, I may have had a bias towards students' mindsets and categorize individuals' mentalities as either fixed or growth. During running activities in class, I often find myself cheering on students with limited physical ability more than students that demonstrate a strong physical performance.

As a teacher researcher, my biases and positionality may have limited the objectivity of my action research project results. Accordingly I took a few steps to limit my researcher role and teacher power interplay within my research: (1) I was not present when students answered their reflection questions, hopefully removing some pressure and intimidation; (2) I emphasized that students' post running journals were not going to be graded for content but for completion; (3) I did not share journals with anyone else unless there was a concern for mental or physical health; (4) I kept a lesson plan book that reflected teaching strategies focused on the growth mindset and ability bias. My research used a data triangulation of students' perspectives, teacher perspective,

and parent perspectives to help address the gap between mental health and gender discrimination in sports and physical activity and limit my objectivity.

Definitions of Terms

Achievement goal theory. This is a psychological theory of intrinsic motivation that considers how beliefs and cognitions orient us towards achievement or success, especially in relation to two styles, task (mastery) and ego (performance) (Bradley, 2012).

Cooperative learning. Cooperative learning is a pedagogical approach to teaching that involves students in a deeper meaningful level and explores human movement through individual and group learning outcomes in order to develop task-mastery within the domains of physical and cognitive (Dyson & Casey, 2012).

Differentiated instruction. A teacher who uses differentiated instruction is applying a philosophy that focus on the learning of individual students and promoting student success. Teachers create groups by ability, readiness, and interests. Implementation helps to increase individual's willingness to participate in physical activity, creates more intrinsic motivation, and assess students learning in all skill areas (Colquitt et al., 2017).

Gender. The basis of gender is a social construction used to assign a set of appropriate behaviors to the female or male sex (Roper, 2013).

Gender equity in sport. Within athletics, gender equity is defined as equal opportunities for males and females to participate in sports and sport organizations (Senne, 2016).

Implicit intelligence theory. Implicit intelligence theory is the belief that students develop about themselves and how these theories shape thoughts, feelings, and behaviors. Entity view is when students believe intelligence is stable. Incremental view includes students that believe intelligence can change from learning, challenges, failure and feedback (Dweck, 2000).

Mental health disorders. Mental health disorders among children are described as serious changes in the way children typically learn, behave, or handle their emotions, causing distress and problems getting through the day. Among the more common mental disorders that can be diagnosed in childhood are attention-deficit/hyperactivity disorder (ADHD), anxiety, and behavior disorders (National Alliance on Mental Illness, 2019).

Mindset theory. Mindset theory is a view someone has of themselves that effects the way they lead their life. There are two mindsets, the fixed and growth. A student with a fixed mindset would believe that their intelligence and qualities cannot be changed. A student with a growth mindset would believe that basic qualities can be cultivated through effort (Dweck, 2006).

Modeling language. Using language to model a message is two parts, first feedback focused on effort and strategy (Dweck, 2006) and second, language that directly and/or indirectly challenges a student to learn what they couldn't do before. It is an action that believes that students can learn (Duckworth, 2016).

Physical activity. Physical activity (PA) is bodily movement that is produced by the contraction of skeletal muscle and that substantially increases energy expenditure, including exercise, sport, dance, and other movement forms (California Department of Education, 2018).

Physical education. The academic subject of physical education is an instructional program that provides students with the skills and knowledge they need to establish and sustain physical activity as a key component of their lifestyle, as children, adolescents, and adults (California Department of Education, 2018).

Social norms for women. Social norms are models defining American women being fragile, less capable, and passive (Senne, 2016).

Implications

The results of this action research project may engage more teachers to use growth minded teaching strategies that help students conceptualize their learning and encourage more teachers and school administrators to involve parents in actively being involved in their child's mindset development with simple at-home strategies. It may also lessen the gap of mental health disorders amongst students of any race, ethnicity, gender, and socioeconomic status and support more girls to participate in sports and physical activity for the benefit of their long-term mental health. If this study is successful, it could also help connect the school and community to collaborate and act to show the lifelong effects physical activity and growth mindset could have on mental health and gender roles within physical education. Lastly, possible findings from this research study could show negative effects of parent involvement, which may deter teachers from dedicating additional time to work with parents in their already full schedule.

Possible next steps for this action research project may be to extend parent involvement in other subjects such as math and English, where more research supports the connection between the growth mindset, mental health, and academic achievement (Claro, Paunesku, & Dweck, 2016). It would be additionally beneficial to broaden the research to urban schools where race and socioeconomic status are inhibiters to equitable access to education. Educating the community by teaching the growth mindset and actions towards developing children's mindsets, could help further research in the growth mindset, mental health, and academic achievement.

Chapter II

Literature Review

The rise in mental disorders in youth calls for connecting the school community to support students' learning. A focus on the individual student and self-improvement is vital, students should receive support and develop the life skills needed for school and beyond. In the United States, girl-identified learners are at more risk of mental health related disorders ("Women and Anxiety," 2018), and are also impacted by a negative social view of girls in sports (Appleby & Foster, 2013). As part of this action research study, I reviewed literature that supports parental involvement in student learning and applying growth mindset language as an effective approach to developing students' growth mindsets towards physical ability.

The purpose of this action research project was to examine the effects of parental involvement on the mindset development of seventh-grade participants in physical education (PE). The use of language modeling of the growth mindset was used at home by parents with their child to help support learning in physical education. This was consistent with the teaching techniques of modeling, cooperative learning, and differentiated teaching that I had been using in my classroom. These teaching techniques incorporated the use of implicit theories, where students were encouraged to learn that their intelligence and emotions can change in order to create more intrinsic motivation in physical education.

Thus, my action research question was, *how does parental modeling of growth mindset language affect seventh-grade students' mentality towards running for self-improvement?*

Overview of the Literature Review

The purpose of this literature review is to provide an analysis of literature that examines the basis of this study. The first section of the literature review introduces the implicit theory of

intelligence and mindset theory, both theorized by psychologist and researcher Carol Dweck, as well as the achievement goal theory by John G. Nicholls. The second section reviews literature that focuses on the development of the growth mindset for middle school aged children, the school community, which includes parents and families, and the importance of physical education in schools. The articles reviewed are of importance to this study because they explore the impact growth mindset language has with communication between adults and children, why parental involvement is important to the success of students in school and their mental well-being, and how running is an essential part of physical education and the lifelong impact it has on students' cognitive development.

Most of the research reviewed was conducted in the past 10 years. All research studies were retrieved from the following databases: ERIC, PsychINFO, Google Scholar, SPORTDiscuss with full text, and Education Source. The key search terms include variations of the following combinations: *growth mindset, parents, modeling, language modeling, physical education, questionnaire, self-improvement, middle school, motivation, grades, mental health, mental disorders, anxiety, confidence, race, gender, academic achievement, life satisfaction, learning, student achievement, running, running motivation, parental influence, implicit theory* and *physical activity*.

Theoretical Rationale

This action research is supported by three theories of social and developmental psychology. Carol Dweck and Ellen Legget are foundational psychologists who study the development of the implicit theory of intelligence which explains students' motivation, intelligence, and mental health when transitioning from elementary to middle school. Carol Dweck's mindset theory identifies two mindsets, fixed and growth, to explain how students

approach learning and how they view their abilities in different ways, including one's natural talent in sports. Lastly, John Nicholls' achievement goal theory explains how beliefs in physical ability relate to success and gender equity.

Implicit theory of intelligence. Psychologist Carol Dweck proposed that people develop beliefs about themselves that organize their view of the world and give meaning to their experiences (Dweck, 2000). Dweck referred to the way that people develop these beliefs as *meaning systems*. Dweck provided groundwork to explain why people have different beliefs and, when in the same situation as someone else, may act, think, or feel differently. Together with Mary Bandura, Dweck identified entity theory and incremental theory that helped explain how students think about their intelligence. According to Bandura and Dweck (1985), a student with an entity view believed their intelligence was fixed and could not do much to change how they viewed themselves (p. 21). A student with an incremental view could see their intelligence as malleable and worked towards becoming smarter. The idea that intelligence can change is vital to students' development for learning, especially in the transitional years of middle school.

Dweck and Leggett's (1988) research explored individuals' implicit theories of how they oriented themselves toward specific goals and how these goals impacted the cognitive and behavioral aspects of their self-beliefs, which is foundational to understanding motivation and intelligence. Defining what these goals are, Dweck and Leggett discussed their findings by writing:

> Specifically, in the domain of intellectual achievement, we identified two classes of goals: *performance* goals (in which individuals are concerned with gaining favorable judgments of their competence) and *learning* goals (in which individuals are concerned with increasing their competence). (Dweck & Leggett, 1988, p. 256)

They found that the middle school students who had an entity view were more likely to choose a performance goal, while students with an incremental view were more likely to choose a learning goal. This research is important to understand how students view their own intelligence as they transition into middle school where the workload is greater and harder, grading is more rigid, and grades are more important than in elementary school.

Dweck's implicit intelligence theory, specifically how individuals view themselves (self-theory), influenced this action research project with her findings from middle school studies and their results of real-world achievements of students' mental health. Referring to her study with Henderson (1990), Dweck upholds that, under entity theory, students feel they need to show immediate demonstration of intelligence ability, cannot acclimate to the new challenges of middle school, and "seems to set students up for self-doubt, anxiety, and drops in achievement" (Dweck, 2000, p. 32). When children are faced with conflict and challenges, their view of intelligence establishes their role in formulating how they view this challenge now and in the future. Dweck explained that children who believed their attributes and effort were malleable and effective, which is the incremental view, predicted that conflict and challenges would occur more often and understand how and where to predict their efforts. Dweck referenced Shapiro (1965) to note that facing conflict is important because "conflict is believed by many to be at the heart of much neurotic behavior" (Dweck, 2000, p.145). Applied to a physical education class, learning can be supported by using a framework of teaching that provides the opportunity for students to be able to have an incremental view of their performance effort during activities such as running. If students are demonstrating effort and working towards learning goals, they are more likely to develop an incremental view of their running ability and contributing to their long-term mental health as well.

Mindset theory. Carol Dweck continued her research in the field of psychology and developed mindset theory (Dweck, 2006). According to Dweck (2006), the view that people have of themselves "profoundly affects the way (they) lead (their) life" (p. 6). A person may have become the person that they wanted to be and/or achieved their goals with purpose based on their own values. Dweck proposed two mindsets that help to explain two meanings of ability. The first is a fixed mindset, where abilities and intelligence refer to proving talent, smartness, and validating oneself in a static view. The second is a growth mindset, where individuals view their changing qualities and develop themselves through learning, failure, and effort.

In mindset theory, Dweck (2006) argued that people were capable of developing a growth mindset over time. Mindset change takes time, effort, support, and commitment to growth and learning. In the context of education, support for students from teachers and parents through messages of success and failure benefit students' mindset development. Dweck suggested that praise feedback specific to effort is one way to develop a growth mindset. For example, praise feedback with a growth mindset message shows that the teacher or parent believes in the student as a developing person and that they are interested in their development. Students receive these messages and start to view their abilities with a more malleable perspective.

Mindset theory can help develop students' view of themselves, to believe in their ability from school, to sports, to relationships. However, this view of equity does not necessarily occur in all classrooms. Some of Dweck's research has proposed that girl-identified learners have more of a fixed mindset (Dweck, 2000; Dweck, 2006). This inequity can stem from teachers praising girl-identified learners for being smart, not for their ability. Whether this praise occurs in math, English or physical education, teachers who praise girl-identified learners for being good at something that is more natural to them may not help them grow their abilities. For example, a

physical education teacher that praises girl-identified learners more during gymnastics than boy-identified learners, is continuing to strengthen the social norms that lead to inequity within sports and gender. According to Dweck, the language teachers use as praise must be focused on student's effort.

In this action research project, I hypothesized that athletic ability and mindset are intertwined in achieving success for self-improvement during physical education class. An important aspect of mindset theory is the belief in what it takes to be physically successful in sports. Dweck (2006) observed that natural talent alone does not make a great athlete, let alone a champion, but in combination with character, derived from a growth mindset, a person could find athletic success. Students may learn and improve from failure and help to develop and strengthen a growth mindset within individuals during athletic performances. Students in sports with a growth mindset have constructive reaction to success and failure (Potgieter & Steyn, 2010), especially in a school setting. It is through Dweck's (2006) growth mindset of physical ability that practice and training, learning from failures and challenges, praise feedback, and goal-oriented tasks that both girl- and boy-identified learners develop equally their mindsets in school and beyond.

Achievement goal theory. In educational psychology, John G. Nicholls developed achievement goal theory (Nicholls, 1984). Nicholls (1984) defined achievement behavior "as behavior in which the goal is to develop or demonstrate – to self or to others – high ability, or to avoid demonstrating low ability" (p. 328). According to Nicholls, an action from an individual is to achieve purpose, with maximum gains and minimal losses while having competence. He proposed that there are two forms of ability competence, task (or, mastery) and ego (or, performance goals) (Nicholls, 1984,1989).

Individuals who are task-involved view effort in an intermediate level of expectancy of success, that will demonstrate their highest ability (Nicholls, 1984). If a task is too easy or too difficult, the result will not be their maximum ability and therefore would be viewed as wasted effort. Within education, students in physical education who are task involved would be intrinsically motivated to participate in challenging activities, self-reflective of their performance, and strive to reach their highest potential. However, teachers must keep in mind that these same students might find one activity challenging and task involved, and another activity too simple and of lower competence to their ability. In this situation, Nicholls (1984) noted that children and adults in a low-ability activity would not be focused on their own improvement and mastery of the task at hand.

The second component of Nicholl's theory is ego, or performance goal. Ego involvement reflects competence as being dependent on others' ability (Nicholls, 1984). In an activity or task that is not highly difficult and of moderate level, a person may not have an expectation of oneself this is of high achievement for success. A student who is ego involved has the goal to establish superiority over others and these students believe beating others and showing superior ability leads to success in school (Duda & Nicholls, 1992). A person who perceives him or herself as having low ability would not attempt a high or moderate task, because he or she would be exposing a perceived weakness and failure. However, if the tasks are easier and the expectation of success is high, failure cannot imply low ability nor can high ability be observed, leaving others to believe achievement is possible (Nicholls, 1984). This explains the way individuals perceive themselves and why others' perception of their success (e.g. teachers, parents, coaches, peers) is important to those with ego goals.

Within the classroom, Carol Ames (1992) applied Nicholls' theory of achievement goal to add that teachers should focus on optimizing the motivational climate of classrooms with their structure, strategies, and curriculum. This includes treating all students as individuals, not grouped based on sex or physical ability, to help students view their ability through a lens uninhibited by gender discrimination. According to the National Strength and Conditioning Association, men and women should train using the same programs and exercises (as cited in Staurowsky, 2016, Chapter 5). Another study notes that there are more differences between individuals than between men and women (Staurowsky, 2016). Provided with this consideration, students may be performance goal oriented in one activity and mastery goal oriented in another, and this may be shaped by students' view of what is a *girl's* activity or *boy's* activity. For example, strength and conditioning is seen as more masculine while dance and badminton are viewed as more feminine. It is the responsibility of the teacher to structure an environment of learning that helps students achieve mastery goals, despite their prior experiences or goals/beliefs from their parents (Ames, 1992). Teachers working with students and parents can develop a sense of community that supports more task-involved performances in the classroom.

Together, implicit theory of intelligence, mindset, and achievement goal theory provide three notions that are important for the present research: first, understanding how students view themselves in challenging situations; second, defining mindsets that can change over time for the benefit of mental health and learning; lastly, in different tasks, students will achieve goals dependent on the level of difficulty and influence from peers, teachers, and parents. In this action research project, it was essential to provide a classroom that is structured in a manner that better allows students to achieve their goals, including building community support with parents in developing students' mindsets.

Review of Related Research

The review of related research is organized into three sections: The growth mindset, the school community, and the importance of physical education in school. Research associated with growth mindset focused on the long-term effect it has with students' development to view challenges and failures as learning opportunities, emphasizing the importance of why students should develop a growth mindset. Parent involvement is connected with the growth mindset and is explored more in the section for school community. Research points to the advantages for students' success in school with parent involvement. Lastly, the results of research that explains why running is important for students in physical education and the effect running has on cognitive development is explored.

Growth mindset. The term *growth mindset* was coined by Carol Dweck (2006) from her research with implicit intelligence theory. This term means the continuing development of students' mindsets to believe their physical and mental attributes can change over time and during different tasks. This section reviews pertinent research related to growth mindset and the effect on students' mentality and how modeling and praise influences a growth mindset.

Growth mindset and the effect on students' mentality. Dweck (2006) proposed in her foundational studies with children that the growth mindset can be developed over time with guided practice.

Dweck's research in the areas of implicit theory of intelligence and mindset theory is extensive and noteworthy. Dweck's book, *Mindset: The New Psychology of Success* (2006), incorporates her work and other researchers' work that contributed to her mindset theory. The areas that that Dweck analyzes include athletes, companies, children, schools, and relationships. She shares the story of how tennis champion John McEnroe would blame losses on others, on

being sick, jealous, or distracted, which Dweck describes as symptomatic of having a fixed mindset. At the same time period, famed tennis star Billie Jean King shared that "the make of a champion is the ability to win when things are not quite right – when you're not playing well and your emotions are not the right ones" (Dweck, 2006, p.95). King demonstrated her growth mindset in the finals at Forest Hills; after being ahead most sets and playing well, she eventually loses. This match defined King's mindset when she realized that a champion is someone who can change their level of play in the moment, focusing on what needs to be done. After exploring these famed tennis professionals who demonstrated the growth and fixed mindset, Dweck continued her supported research with students and their approach to school.

Dweck (2006) highlights a major point with student development of the growth mindset and their mentality towards school. For example, teachers who judge students' intelligence and ability can create classroom environments in which students stop trying. Dweck referred to this as "sabotage." However, Dweck noted when "students understand that school is for them – a way for them to grow their minds – they do not insist on sabotaging themselves" (Dweck, 2006, p. 204). Dweck (2006) shares research about Marva Collins, a teacher from Chicago who taught students who came to her class as their last chance. These students had been in trouble before and were basically discarded by the system. They worked hard every day in her class, and performed challenging tasks and learned material. Marva created a growth mindset classroom by staying focused on the process of learning and taught her students how to turn failure into success. As the year progressed, students would share how they liked her class because they were learning. Collins' class helps further evidence that students show a more growth mindset towards learning when they believe that their intelligence can change over time.

A study at the forefront of both implicit theory of intelligence and mindset theory was conducted by Bandura and Dweck (1985) with fifth and sixth graders. Students' theories of intelligence were measured using agree or disagree statements. This included statements such as: "You can learn new things but you can't really change your basic intelligence" (Bandura & Dweck, 1985). Students were provided with three tasks that they could choose from. The first two tasks were categorized as performance goals, they were easy and students avoided making mistakes. The third task was a learning goal, where students could learn something even if they made a mistake because it was new and difficult. Looking dumb was not a concern to students who chose this third task. The results supported the researchers hypothesis that there was a relationship between students' theories of intelligence and their choice in task. Students with an entity theory, fixed mindset, were more likely to choose the first two tasks. Students with an incremental theory were more likely to choose the third task. Later, Dweck and Leggett (1988) ran a similar study with eighth graders and had very similar results. Data here showed that "80% of students with an entity theory chose a performance-goal task-with a full 50% choosing the very easy task, the one that ensured flawless performance" (as cited in Dweck, 2000, p. 21).

The Bandura and Dweck (1985) and Dweck and Leggett (1988) studies highlight the fixed or growth mindsets middle school students may have and how mindset relates to learning. The limitation with both of these studies is that categorizing a student's mindset as one or the other is problematic. For example, there is a tendency to assume that a mindset for choosing a task would be the same for other tasks and not be malleable to the situation at hand. Further research helps to expand on these two theories and the extent to which a growth mindset can have a positive effect with the mental health of students.

Other researchers showed how the growth mindset of students can lead to an increase in mental health, self-belief, and academic success in school. Nielsen et al. (2019) used the Strengths and Difficulties Questionnaire (SDQ) containing 25 questions focused on hyperactivity/attention, conduct problems, emotional symptoms, peer relationship problems, and prosocial behavior to measure student mental health. This worldwide instrument of measurement can help predict mental disorders for participants before they present/are diagnosed later in life. The study validates that mental health interventions at an early age may help alleviate future mental disorders. What is missing from this study is additional ways to prevent mental health problems that do not rely solely on the SDQ to diagnose children. The results demonstrate the importance of having programs in place that help to prevent, diagnose, understand, and teach students issues relating to mental health and behaviors, not only acknowledges the problem, but also provides support for students at school. One area that shows results in teaching and reducing mental health disorders is the development of the growth mindset.

In a recent study about the malleability of perceived intelligence, Romero, Master, Paunesku, Dweck, and Gross (2014) examined intelligence and emotions. They questioned intelligence as malleable in predicting grades and courses chosen by students, and whether emotions are more controllable and produce fewer depressive symptoms and a greater well-being. Participants were 115 sixth-grade suburban middle school students with the method of data collection using a 6-point Likert scale with statements from Dweck's (2000) original research such as: "Your intelligence is something about you that you can't change very much." Romero et al. (2014) found that students in sixth grade who believed their intelligence could change, earned higher grades overall. In addition, sixth grade students who believed their emotions could change had fewer depressive symptoms overall. This study supports the

connection between a student's growth mindset, academic success, and mental health. What is missing from this study is whether students with a fixed mindset showed digression in grades and if this mindset was also more likely to show signs of mental disorders such as depression.

There is little research available to refute that a growth mindset benefits students' development and academic achievement. Researchers Sisk, Burgoyne, Sun, Butler and Macnamara (2018) conducted two meta-analyses. Both studies used quantitative measurements, and researchers collected studies that met the PRISMA qualifications for meta-analysis. The first meta-analysis of 273 studies analyzed the connection between student mindset with academic achievement. The results demonstrated a weak correlation between academic achievement and student mindset. The second meta-analysis of 29 studies concluded that mindset interventions on academic achievement were not beneficial for adolescents, most students, and students transitioning to a new school or other situational changes. However, the research did demonstrate that growth mindset intervention in school is beneficial for low-income students and low-achieving students.

Collectively, these studies offer an understanding of the effect a growth mindset has on a students' mentality towards school, how a growth mindset leads to more academic success, and the long-term positive effect with mental health (Bandura & Dweck, 1985; Nielsen et al., 2019; Romero, Master, Paunesku, Dweck, & Gross, 2014). Students who performed a challenging learning task showed how failure led to success because they were not afraid to look dumb when they make a mistake. Students also learned over time how to develop a view that their intelligence can change, as the results from the research of Romero et al. (2014) reports. Lastly, there is a gap in research connecting a growth mindset to success in physical education. The

studies reviewed focus on mathematics and English and therefore, cannot transfer directly to mindset and physical success in physical education.

Language modeling and children and students' mindset development. This subsection examines how the adults' use of language in school and home can help develop a child's mindset and their reaction to challenges. The long-term benefits of a growth mindset imply that it is important to know how adults influence the development of the child's mindset. This notion was first explained by psychologist and researcher Angela Duckworth (2007) and continued with Dweck's more recent research (Haimovitz & Dweck, 2017; Romero et al., 2014).

Angela Duckworth (2016) conducted many studies that support her theory of grit – perseverance and passion for long term goals. The presence of grit can be an underlying explanation for why some people are successful and others are not. In her book *Grit*, Duckworth (2016) theorized grit as it relates to talent and intrinsic motivation. A study by Duckworth, Kirby, Tsukayama, Berstein, and Ericsson (2011) found that children who deliberately practice memorization and of words for the spelling bee were more successful in the long run (as cited in Duckworth, 2016). This foundational study suggested that focusing on intrinsic ways to learn can result in cognitive learning. The study has helped lead the way for further research in deliberate practice and motivation. These students were not successful because of luck but because they focused, failed, improved, and got better each day learning from their previous days. Therefore, "[grit] rests on the expectation that our own efforts can improve our future" (Duckworth, 2016, p. 169). This is very similar to Dweck's work with the growth and fixed mindset.

Duckworth (2016) applied the work of many researchers in her theory of grit. One of these theorists was Dweck's theory of mindset. As Dweck (2006) stated, growth mindset is the belief that our intelligence and abilities are malleable. A fixed mindset is the belief that there is

no room for improvement and failure, that our intelligence is stable. So how do the theories of grit and mindset tie together? Together, Duckworth (2016) and Dweck (2006) administered a growth mindset questionnaire to 2000 high school seniors. What they reported was that students with a growth mindset displayed more grit than students with a fixed mindset (Duckworth, 2016, p. 181). Duckworth extended this research to children and adults and adds to their findings of a connection between growth mindset and grit.

Duckworth (2016) continued to research the connection between parenting and grit. What she has found was that the message a child receives is more important than the messages parents try to give. She asserted that "language is one way to cultivate hope" (Duckworth, 2016, p. 182) and shared ways in which parents and teachers can use language that promotes a growth mindset and grit. She cited examples of "You're a learner! I love that" and "This is hard. Don't feel bad if you can't do it yet" to demonstrate how parents and teachers can model language. Haimovitz and Dweck (2017) conducted a study of praise from adults with their children. Findings revealed that even if parents have a growth mindset, the modeling a parent gives their child is the mindset a child develops. Haimovitz and Dweck found that when parents reacted to their children's mistakes as harmful and problematic, their children developed more of a fixed mindset, even if the parent had a growth mindset. Both Duckworth (2016) and Dweck (2006) connect the parallels of parenting and teaching, and how psychologically both can make a difference with children and students.

Dweck (2006) maintained that the messages parents and teachers send shapes how children and students think about themselves. Through multiple research studies and experiments with hundreds of children, Dweck (2006) points out that "praising children's intelligence harms their motivation and it harms their performance" (p. 178). She pointed out that by telling a child

they are “a natural genius” sends the message that failure is unacceptable which leads to disappointment and low self-esteem. However, in contrast, within *Mindset,* Dweck (2006) refers to her work with Mueller and Kamins that demonstrates the positive effect teachers’ language can provide their students. In this work, when math teachers spoke with their students about how mathematicians become passionate about math and about the discoveries they make, it sent the message that “skills and achievement come through commitment and effort” (p. 182). This way of framing learning led students into a growth mindset belief. On the other hand, when math teachers spoke to students about mathematicians as geniuses who easily came to their discoveries, it led students into the fixed mindset belief.

Dweck (2006) and Duckworth (2016) demonstrate the importance of language modeling by parents and teachers for children and students. The message that language sends the receiver of such language and students’ self-remarks, illustrates that children's mindsets can be developed towards a growth mindset. Messages of failure as a setback moves children towards a more fixed mindset. Messages of praise for effort and learning from failure provides a more growth mindset environment for children. To summarize, the importance of language on mindset development cannot be underestimated. Dweck’s (2006) research identified that language modeling through praise and feedback can help shape children’s mindsets. Duckworth’s (2016) work illustrates that cognitive development can develop over time from support within a child’s community. Together, Dweck’s (2006) and Duckworth’s (2016) work was important to this action research project because my goal was to nurture the growth mindset of my students through the influence of adult language. It was important for my parental participants to understand the positive impact they could have with their children through specific communication.

Effort feedback and mindset development in middle school children. This subsection discusses effort feedback versus ability feedback and the importance in developing students' mindsets at the middle school level. Although studies in this section focus on academic successes such as math, they are important because of the change noted in students during their middle school years due to effort praised feedback. This action research project was focused on language used by adults with children and the impact of such language on the mindset development of middle school children as it relates to physical education activities. There is a lack of mindset research in the content area of middle school physical education. Therefore, learning about the mindset development of middle school students from past research is foundational to the study of mindset development in physical education. The results from this action research project may contribute to the body of research that is needed in the area of physical education and growth mindset in middle school students' success and development.

Blackwell, Trzeniewski, and Dweck (2007) conducted two studies about the effort feedback loop and mindset development. The first study was a longitudinal study that followed the same 374 students for two years of junior high. Students' mindsets were measured at the end of each school year using a questionnaire that measured for motivation, theories of intelligence, learning and performance goals, and beliefs about failure. The second study utilized an intervention to stimulate the development of a growth mindset in math. It used the same questionnaire and math grades at the end of each term. The 99 sixth-grade student participants were split into two random groups, one control and experimental group. In the experimental group consisting of 48 students, teachers provided growth mindset language that praised effort in their math classroom and other classroom discussions centered around brain development, how learning makes you smarter, and the importance to avoiding labels such as *dumb* or *stupid*. Over

the course of middle school, students in the experimental group had an increase in motivation and achievement while the control group students showed a decline in motivation and grades.

This is a major study to the field of growth mindset because it uses middle school students and their belief in intelligence and motivation to measure the success of implicit theory of intelligence, the foundation of mindset theory, during one of the most difficult years for adolescents. If students can grow their mindset in a new environment where there is more academic and social pressure, the powerful tools of teaching growth mindset could have a long-lasting effect on student success. This was first suggested by psychologists Dweck and Bandura (1985) who formed the two theories of an intelligence as fixed, entity, theory and a malleable, incremental mindset. The foundational studies (Bandura & Dweck, 1985; Dweck & Leggett, 1988) both used middle school students as participants. Both studies used guiding questions of agreeing or disagreeing with statements such as, "Your intelligence is something about you that you can't change very much" (Dweck, 2000, p. 21). The findings of Blackwell et al. (2007) were similar to those of Bandura and Dweck (1985) and Dweck and Leggett (1988) in that middle school students who believed their attributes could not be changed struggled with challenges and failure. In contrast, students who believed their intelligence could change over time responded with more growth in challenges and failures. These studies of middle school students helped to develop mindset theory.

A second major study conducted by Haimovitz and Dweck (2017) helped define specific feedback that supports the development of a growth mindset and more importantly how the development of mindset (fixed and growth) is taught through the language used in classrooms. Although this study used a wide range of participants from kindergarten to college, the data demonstrated that children can develop a growth mindset over time. The researchers used

qualitative methods to analyze past research, and the results supported their assumption that praising a child's effort lead to an increase in growth mindset in children. The researchers found that although praising effort may lead to a more growth mindset, it was the use of praise effort directed towards an outcome, setting or defining a goal that led to development. When children were praised for their hard work or process of their success, they viewed their intelligence as something that could change (Haimovitz & Dweck, 2017, p. 1851). As Dweck reasoned in her earlier work, praising for being smart resulted in a view of intelligence as being stagnant and a reason for failure (Dweck, 1998).

A second major finding from the Haimovitz and Dweck (2017) study was that the mindset of an adult, teacher or parent, does not necessarily shape a child's mindset. Although Haimovitz and Dweck's results did find that a parents' beliefs about failure and their children's failure do predict their children's mindsets. They concluded that is the parents' use of language and focus on growth rather than ability that matters and develops children's mindset. Results from their initial study demonstrated that children who reflected about hard work in school as being more important than their grades had parents who focused on learning and improvement rather than ability through performance at school. These children believed that they could grow their abilities and intelligence.

Educators can use this finding in the classroom. Researcher Sun (2015) as cited in Haimovitz and Dweck (2017) found teachers whose practices help shape the growth mindset demonstrate the following qualities: (1) They teach for understanding; (2) Their feedback helped students' understand; (3) They evaluated and praised process of learning; (4) They were focused on progress towards learning goals; (5) They explained their thinking to students.

These studies are essential to the understanding that praise feedback about students' effort helps to build a growth mindset in students. It is also not the mindset of the adult, parent or teacher, that shapes the mindset of a child or student but the language and actions these adults use. Language modeling is a valuable teaching method that contributes to learning situations in which students can develop a mindset geared toward learning over a period of time.

The school community. A school community includes teachers, students, parents, and administration. Adult members of the school community can also include those within the local community who beyond the school walls. In this section, researchers explain the importance of community relationships and parental involvement in students' learning and well-being.

Community support and student learning. This subsection examines how connecting parents, school staff, and the greater community has a positive effect on students' success in school. The first study focuses on the impact on mental health, while the second study focuses on parent involvement in a child's learning specifically at the middle school level.

Frauenholtz, Mendenhall, and Moon (2017) conducted a study that noted the importance of collaboration among teachers and community mental health professionals for students' mental health. The study focused on teachers' knowledge of literacy for mental health at an urban school. The study's participants were teachers and students and local health care workers. Participants responded to open-ended questions in a qualitative survey within their focus group. According to Frauenholtz et al. (2017), addressing mental health issues also helps individual students in achieving academic success in the classroom. Their research pointed out that not addressing students who need more support can create a gap in learning and that the shared goal of improving student learning amongst the community and school can lead to overall well-being of students.

A study conducted by Hill, Witherspoon, and Bartz (2018) focused on parental involvement in their child's learning. Their research analyzed the relationship of parents, teachers, and students at the middle school level. The researchers chose participants at the seventh-grade level because curricular decisions that are made during seventh grade have long-term implications. Their research uncovered that adolescents' function declines during seventh grade, and parent involvement declines from elementary to middle school. With the help of the Director of the Office of Research and Accountability, the researchers selected two suburban middle schools with ethnically diverse populations. Students who met grade level requirements during their sixth-grade year were eligible to participate. The researchers thought it was important to focus fully on students who were performing well in school, to measure their increase or decrease in performance during seventh grade due to parent involvement in their learning. They did not want to add the variable of students who did not meet grade level requirements in sixth grade and how this group may benefit from more support and involvement.

Hill et al.'s (2018) research integrates the voices of students, parents, and teachers to broaden and deepen our understanding of how families, students, and schools function together to support achievement during adolescence. The researchers believed that using a qualitative study would provide a deeper understanding of how families, students and schools work together to provide support for students at the middle school level. Hill and colleagues first provided a quantitative survey to 20 focus groups consisting of parents, students and school counselors. The survey included guidelines that made clear there were no right or wrong answers. Following the survey, moderators facilitated focus groups that asked open-ended questions with specific focuses. The researchers asked the parents in the groups about their aspirations for their children, their goals for maintaining involvement, and why their child needed to reach their goal. Lastly,

they used to follow-up probes to monitor progress at home. This important aspect to their study was unique because it shows the progress of involvement at home using the strategies provided by the moderator. The results of their study indicate that parent involvement is important during the middle school years because it supports students' academic achievement in three successful ways: (1) scaffolding independence, (2) linking education to future success, (3) communication. This study demonstrates how parent involvement with students who are functioning at grade benefit from the support of their parents at home with their learning in school.

There is little research that contradicts the positive effects of community support and student learning. However, what Hill et al. (2018) discussed from their research was that there are differences in parent involvement based on the parents' ethnicity. For example, their study found that Latino parents recorded lower self-efficacy in parental involvement in school. The structure of schools resonates more with Euro-American middle-class families and their parenting ideologies than it does with African-American and Latino families. This study is one example of how further research in the area of a school's family demographics could help increase parental involvement in school with their child's education.

These two studies investigate the attention that students should receive from teachers, parents, and an involved community so that they are supported during the difficult transitional years of middle school. Through these studies, it can be concluded that additional support at home and at school benefits a child's mental health and academic successes. Hill and colleagues identified the importance of parent involvement for students already performing successfully in school. A further study could evaluate the benefit of parent support for students performing below grade level or whether parental involvement also has a positive impact on academic achievement. Additionally, Frauenholtz et al.'s (2017) research showed the positive effect of

student support and the connection between mental health and academic achievement. Future research could be geared on the impact of parent involvement on children's mental health, and how it may support success in academic achievement.

The importance of parent involvement in children's learning in physical education. This subsection examines two areas. First, how parents' perceptions of physical education influence their views of the subject. Secondly, the relationship and communication these parental views have with their child's participation and learning in physical education.

Collectively, Jaekwon (2015) and George and Curtner-Smith (2018) offer unique insights into parents' perceptions of physical education and their beliefs about the impact their perceptions have on their child's development. Both studies analyzed qualitative data gathered by a questionnaire and interviews of parents of children 12 to 15 years of age. George and Curtner-Smith's (2018) research investigated three questions: (1) How do parents view physical education? (2) What expectations do parents have for physical education? and (3) What factors led to parents' readings of and expectations for physical education? (p. 36).

The middle school in the study was selected because of its innovative PE program and progressive views of learning. Thirty-nine parents volunteered of the 125 parents asked to participate. A questionnaire was issued prior to the first interview. This allowed the researchers to assign follow up questions to specific groups of parents. Seven total interviews followed for each group of parents, and the questions were written uniquely for the parents interviewed. The data analysis showed that 32 out of 39 parent participants believed that PE was as important as other subjects that parents viewed as "academic." Another finding was that "parents of both genders were more likely to focus on health-related fitness and personal and social development when their children were girls but were more likely to focus on learning and playing sports when

their children were boys" (George & Curtner-Smith, 2018, p. 39). Secondly, the study pointed out that parents' expectations for physical education are for students to be involved in sports, for health-related fitness, and for social development.

George and Curtner-Smith (2018) found that several factors had a strong influence on parents' perceptions of the value of physical education. These included their own participation in physical education, physical activity, formal and informal sport as a child, their family and friends, their current level of physical activity, and lastly, the influence of the media. Although 82% of parents were fully supportive of their child's learning in their physical education class, there was a lack of desire from parents about being more involved in their class, and no mention of the importance of the teacher's strategies used. A key point made in this study is how parents view their child's physical education class through the lens of their own experience and the representation of physical education classes in the media. The study supports the idea that physical education teachers could benefit from educating parents about progressive teaching in current physical education programs and involving parents more in their child's learning in this subject.

Although Jaekwon's (2015) study examined the perceptions of parents and their child's participation in physical education and youth sport, participants were selected during a youth sporting event and the results offer a different take on parental involvement in their child's learning. A key finding with the Jaekwon study is that those parents who were not involved in their child's physical education did not know what they were learning, how class was structured, and the benefit their child was getting out of physical activity throughout each class. However, these same parents were actively involved in their child's youth sports program and could share with the researcher what skills their child was working on and how practice was structured. The

method of qualitative analysis through interviews provided an overview of these parents' views. Jaekwon's (2015) study failed to follow up with parents' interview questions and further explore parents' views and beliefs about physical education and extra-curricular sports.

A major result common between Jaekwon (2015) and George and Curtner-Smith's (2018) studies was that parents support physical education as a general education requirement in school. Parents' perceptions of physical education are important because their views can influence their child's views of the subject, positively or negatively, and have a lasting effect on their learning of and attitude towards physical activity, fitness, and their lifelong health.

The importance of physical education in school. Physical education is defined by the California Department of Education as, "instruction contributes to good health, develops fundamental and advanced motor skills, improves students' self-confidence, and provides opportunities for increased levels of physical fitness that are associated with high academic achievement" (2010, p. *v*). Helping to teach habits for students to create a healthy lifestyle is a long-term goal of physical education teachers. In the state of California, middle school students are required to have 400 minutes of physical education for every 10 school days. Classes are mixed gender and organized by grade level, with sixth, seventh, and eighth having their own structured curriculum.

Gender equity in sports and the impact of gender equity on children's mindset development. In this subsection, research about the inequality in sports for girl learners, and the impact it has on their views about participation is examined. Staurowsky (2016) explores in her book, *Women and Sport: Continuing a Journey of Liberation and Celebration*, many studies that support the advancement for girls in physical education and activity from the 1800s to 2015. While physical education for women was not introduced until the mid 1800s, after it was

introduced the focus was on female health while also acknowledging women's societal role as a mother. While private colleges tried to limit women's sports, women students accelerated their participation in sports. Staurawsky (2016) refers to Sack and Staurowsky's (1998) study which reports that women enjoyed sports more so than they enjoyed gymnastics and regulated exercises. While this view of women in sport prevailed, societal views continued to discriminate against women in sport.

Senne (2016) discussed the stereotyping of social norms – women athletes seen as masculine, and the increase of women's participation in sports since Title IX. However, Senne (2016) refers to Knifsend and Graham (2012) and indicates that all girls who play sports are judged as having a lower social status compared to boys who play sports. The difference is greater for girls who play sports that are viewed as masculine. Koivula's (2001) study (as cited in Appleby & Foster, 2013) emphasized that these sports include football, boxing, and combat sports because they do not emphasize the stereotypical femininity the way gymnastics, dance and figure skating do.

Additionally, the researchers found that more direct language that is derogatory towards girls' athleticism is present for those that play sports. The American Psychology Association's research as pointed out in Staurowsky (2016) reported that most girls worry about ruining their appearance when they participate, expressing concerns about their hair and makeup getting messed up. Staurowsky (2016) refers to the incident when U.S. gymnast Gabby Douglas won gold in the London 2012 Olympics with a standout performance, yet social media scrutinized her hair. This led to expanded use of the term *female apologetic*. *Female apologetic* refers to women's athleticism as being out of place in the U.S. society, and women sometimes apologizing for their strong, independent, fierce image (Staurowsky, 2016, p. 46).

In their longitudinal study, Telford, Telford, Olive, Cochrane, and Davey (2016) note that girl-identified learners are 19% less physically active than boy-identified learners. Their study incorporated mixed methods with the first part being a parent questionnaire focused on involvement in their child's physical activity and their own interest in physical activity. The next part was a student questionnaire, using a Likert scale, aimed at assessing students' perceptions of their physical education class. Lastly, participants wore pedometers to track fitness. A second result from this study that exposes discrimination against girl-identified learners in sport, is that girls received less encouragement from family members to be physically active and to participate in sports. The study does not explore the impact this has on girl-identified learners mentally but adds to the current research of the social norms and stereotypes of girl-identified learners in sports.

These studies demonstrate the limited progress for girl-identified learners in sports and participation in physical activity, however they point out the continued discrimination of girl-identified learners in athletics. Since physical activity and participation in sport can encourage girls to build their self-efficacy, confidence, and improve anxiety (Appleby & Foster, 2013). It is important that researchers continue their research to demonstrate the value for girls to be physically active.

Cultivating a growth mindset environment in physical education. As stated by Dweck's (2000, 2006) mindset theory, success in the classroom does not always foster a growth mindset. A growth mindset is fostered from a mastery climate, where effort, cooperation, and teamwork are at the center of the classroom structure, and teachers and adults direct praise feedback at effort. In this subsection, a study by Johnson, Erwin, Kipp, and Beighle (2017) is introduced that

examines a mastery climate and its effect on students' involvement and learning in physical education.

Researchers Johnson and colleagues (2017) wanted to answer three questions: (1) Are students meeting the 50% activity marker in physical education?, (2) Is a climate of mastery correlated with students' motivation and enjoyment in class?, (3) Is there a grade and gender difference for enjoyment in physical activity in physical education? This mixed method study involved 290 students in sixth, seventh, and eighth grade from three middle schools in the southeast United States. These researchers used sport questionnaires, motivation surveys, and pedometers to measure the classroom climate, enjoyment, and levels of physical activity.

The researchers found three pieces of evidence to support their questions. First, of the 60 minutes children should be getting of physical activity a day, students were meeting the required 60 minutes from 50% activity level in their physical education classes. Second, when teachers praised students' effort and unique abilities, they were more motivated and enjoyed physical activity in their physical education class. Third, boys enjoyed physical activity in physical education more than girls, with little difference between grade levels. The Johnson et al. (2017) study provides some evidence that students are more motivated to learn in a climate where effort is valued more than ability. A teaching strategy that used growth mindset language in physical education had a positive impact on students' intrinsic motivation, effort, and learning. One limitation of this study was that researchers observed classes for a relatively short time, only four school days. Although the evidence is supportive of mastery climate and physical education, it could also have been influenced by participants showing off during these four days and teachers providing different lesson plans than they would normally.

A recent article about creative physical education (CPE) teaching and a task-supportive climate recognizes a positive effect on students' motivation and increased physical activity during class (Kokkonen, Yli-Piipari, Kokkonen, & Quay, 2019). Researchers found that collaboration between the teacher and students is important to cultivating a classroom climate that combines teams, games, sports, and practice (CPE). This study is limited by the short timeframe of data collection and the location of the conducted study. For a total of two days, researchers collected data from a questionnaire completed by students. There was no interaction with participants, which included 382 fourth, fifth, and sixth grades students in Finland. Students may have answered questions based on their previous answers or because of teacher influence. There is also a limitation due to the cultural differences between Finland and the United States.

In conclusion, there are few studies that provide research about the growth mindset and physical education class. Most of the growth mindset research has been conducted in academic subjects such as math and English (Blackwell et al., 2007; Romero et al., 2014). These two studies provide some evidence to suggest that a physical education classroom that cultivates a learning environment focused on effort, learning, and creativity, provides more enjoyment and motivation for students to participate in physical activity. This climate of mastery learning is reflective of the teacher's instructional strategies. This is what Dweck (2000, 2006) would define as growth mindset approach to teaching.

Running in physical education and the support of students' cognitive development. In this subsection, multiple studies are introduced, and their results are reported regarding the effect running (or, aerobic capacity) and aerobic fitness have on school aged children and their cognitive functioning and success in school. Cognitive development can be defined as an increase students' knowledge, skills, and problem solving

Preliminary evidence suggests that the Fitnessgram, California's statewide physical fitness test, is linked to students' higher levels of cognitive functioning in school (Shape America, 2016; Srikanth, Petrie, Greenleaf, & Martin, 2015; Van Dusen, Kelder, Kohl, Ranjit, & Perry, 2011). Through analyzing 1,211 Texan middle school students' running results from the Fitnessgram (same test used in California) during testing week, researchers Srikanth, Petrie, Greenleaf, and Martin (2015) pointed out that there was a correlation of higher aerobic fitness and higher scores on math and reading tests. With these results, research by Chaddock et al. (2011) and Pontifex et al. (2011) (as cited in Srikanth et al., 2015) reference research that links higher levels of fitness to improvement of cognitive control and working memory, in addition to more cognitive flexibility to deal with more demands.

Shape America (2016) conducted a study analyzing data provided by all 50 states and the District of Columbia that revealed the physical activity requirements and practices in their corresponding states. Analysis found a positive relationship between student academic achievement with the increased time students participate in physical activity before, during, and after school. The Van Dusen, Kelder, Kohl, Ranjit, and Perry (2011) study further found that cardiovascular fitness and aerobic capacity, amongst adolescent students showed a positive correlation with students' academic performance in school for both boy- and girl-identified learners. The study analyzed data from third to 11th grade students, and showed little correlation for cardiovascular fitness and academic performance at the elementary level. A meta-analysis study by Fedewa and Ahn (2011) discovered further that aerobic activity of school aged children has a positive relationship with cognitive development. The researchers used 59 studies from 1947 to 2009 to support their findings that physical activity can have a positive impact on academic achievement through cognitive development from fitness and physical activities. It is

difficult to understand if these studies focused on physical activity through youth sport or school activities, and the influence a physical education program may have had with this relationship.

Unfortunately, there is a lack of research that exclusively shows a relationship between running and growth mindset in physical education. Cognitive development is most often connected with academic achievement subjects that do not include physical education. These studies aim to emphasize the greater positive impact aerobic fitness has on a student's development to expand their thinking and understanding in academic classes.

Summary

Dweck's (2000, 2006) two theories of implicit intelligence and mindset and Nicholls' (1984) achievement goal theory helped establish the basis for this action research. Dweck argued that students who develop a growth mindset demonstrate more success in school and show fewer signs of mental disorders such as depression. Nicholls proposed, with mastery and performance goals, that girl-identified learners may view themselves as less capable when they compare themselves with others and hold a lower standard of themselves during a specific task. However, through mastery tasks, girl-identified learners overcome this view of inequity by giving their maximum effort, no matter what the outcome may be.

The major findings from the research collected for this action research project can be described in four broad focus areas. First, the literature reviewed revealed the importance of teachers and parents and the values they communicate through language that emphasizes the growth mindset (Duckworth, 2007,2017; Dweck, 2006; Haimovitz & Dweck, 2017; Romero et al., 2014). Second, research demonstrated how academic achievement is linked to the growth mindset in students (Blackwell et al., 2007; Dweck, 2000, 2006). Third, researchers identified there is a long-term effect that growth mindsets can play in reducing mental disorders (Bandura

& Dweck, 1985; Nielsen, et al., 2019; Romero et al., 2014), and the impact of a growth mindset on how girl-identified learners view themselves in sports and physical activity (Appleby & Foster, 2013; Senne, 2016; Staurowesky, 2016; Telford et al., 2016). And fourth, the benefits of cognitive development from running during physical education class are profound.

There is little research that connects a student with a growth mindset to success in physical activity and exercise during physical education. Many of the studies reviewed were focused on student success in the classroom with math (Blackwell et al., 2007; Romero et al., 2014). With this gap in research, it is unclear how a growth or fixed mindset might impact student success in physical education. In addition, there is more research about the positive impact physical activity has with cognitive development (Shape America, 2016; Srikanth et al., 2015; Van Dusen et al., 2011). However, there is little research about the positive impact physical education has towards student's development of cognitive development. Lastly, research is more abundant regarding girl-identified learners and the impact societal norms have on the view of physical activity and mental health (Appleby & Foster, 2013; Senne, 2016; Staurowesky, 2016; Telford et al., 2016). Again, there is very little research between the perspectives of girl-identified learners during physical education and sports and mental health.

There is an ongoing problem of mental health and girl-identified learners battling social norms and sports. My project aimed to help address how girl-identified students view their performance in running during physical education and the impact it has on their mindset development. The gaps in research need to be addressed to be able to understand how teachers, parents, and the school can help establish a culture of growth mindset in all subjects and the impact it has on the well-being and academic success of students.

The following chapter describes procedures for this action research project. It includes a review of the mixed method research approach, data collection tools, and procedures for the intervention. The data collection tools include weekly surveys for parent participants, a growth mindset language modeling guide for parents to use at home, researcher field notes, student journals with prompts, and a questionnaire. These data collection techniques will gather more information about the impact of parent modeling on students' mindsets, as measured during our weekly training runs. These data provided by the collection tools will aid in exploring the success of the parent modeling intervention on students' growth mindsets.

Chapter III

Methods

The state of California has shown an increase in support for K-12 public schools and their students' mental health by passing laws and increasing financial resources across the state. The Mental Health Services Act (MHSA), established in 2004, provides schools with increased funding for programs to help treat mental illness and early intervention for students in California (California Department of Education, 2018). In 2019, the California State Legislature set aside an additional $50 million for schools to try new methods of on-campus mental health support. With this initiative, counties and local schools have more incentive to work together to apply for grants to receive monetary support. This could establish a stronger community around students, a method which has shown to improve students' well-being (Frauenholtz, Mendenhall, & Moon, 2017). A stronger community includes parental involvement in the child's learning at home. Students have attained more successful academic achievement in schools where the parent community is more involved with learning development at home (Hill, Witherspoon, & Bartz, 2018). An increase in parent involvement in physical education, specifically, could help provide more understanding of the subject and, in turn, combat parents' misperceptions based on their own experiences (George & Curtner-Smith, 2018).

Girl-identified learners are at greater risk of mental health disorders (WHO, 2020). In the realm of sports, girl-identified learners are viewed as more masculine (Senne, 2016), a cultural message that is derived from social norms. This negative view not only impacts how girl-identified learners view themselves physically but also affects their mental well-being and cognitive growth. Dweck (2000; 2006) found that more girl-identified learners have a fixed mindset compared to boy-identified learners. However, some research found that physical

activity and participation in sports can encourage girls to build their self-efficacy, improve confidence, and lower anxiety (Appleby & Foster, 2013). There is not much recent research in the subject of physical education. I also found that there was a gap in research that examines the connection between the growth mindset and physical activity, and I hoped that this study can contribute to this gap.

Research reveals that when parents are involved with their child's learning, students show more academic success (Duckworth, 2007; Dweck, 2006; Haimovitz & Dweck, 2017). Parents can be directly involved with their child through language and actions. According to Dweck (2016), words and actions from parents send strong messages to their child. This contributes to the idea that a parent with a growth mindset can pass it along "through their deeds: the way they praise (conveying the processes that lead to learning), the way they treat setbacks (opportunities for learning), and the way they focus on deepening understanding (as the goal of learning)" (p. 221). As such, engaging more parents in their child's physical education class may be beneficial for students' success, particularly in challenging activities in class, such as running. This helped me create my action research question: *How does parental modeling of growth mindset language affect seventh-grade students' mentality towards running for self-improvement?*

Setting

The middle school where my study took place was located in a suburban, small-sized town in the northern California Bay Area. The campus is situated in a high socioeconomic neighborhood with a community invested in maintaining a top-rated, strong school district with quality academics and extracurricular offerings. Within the town, the non-profit education program raised approximately $2.5 million for all four district schools. Last school year, a little

more than $500,000 was granted to the middle school in this study. The grant helped to support electives, counseling and student support services, a librarian position, math acceleration, music, choir, a band teacher, professional development for student wellness staff, technology upgrades, and writing aides. The year when this study was conducted was the first year that the student wellness center has been in operation at the school to support students' social emotional learning and mental health.

At the time of study, there were approximately 600 students at the school; around 200 students in each of the sixth, seventh, and eighth grades. There were 48% of students who identified as girls and 52% of students that identified as boys. The ethnic makeup of the school was less than 1% African American, 18% Asian, 2% Filipino, 7% Hispanic or Latino, less than 1% Native Hawaiian or Pacific Islander, and 60% White. The school was situated in an affluent community, and a small percentage of the student body (4%) qualified for school lunches, 1% of the population were English learners, 11% of the student body was identified as having disabilities, and none of the students were foster youth. The California Assessment of Student Performance and Progress (CAASPP) for the school identified that 87% of the students met or exceeded state standards in English language arts/literacy and 79% scored well in mathematics. Of seventh graders who performed the California State Physical Fitness Test (PFT), roughly 90% met at least five of six standards, whereas 5% met only four of six standards.

The teacher makeup consisted of 36 fully credentialed teachers, and there were no teachers without a full teaching credential. About half of the teachers hold a master's degree. Approximately 47% of teachers had taught at the school for more than 10 years, and 53% had taught less than 10 years. There have been no vacant teacher positions in the last three years. The

ethnic makeup of the teachers was 86% Caucasian, 1% Hispanic, and less than 1% other Asian, and Asian Indian. Of the 36 teachers, 26 identified as females, and 10 as male.

Demographics of the Classroom

The participants in the study included students and parents. There were 33 seventh grade students in the z-period physical education class. Of these 33 students, 17 (52%) were male and 16 (48%) were female. During the study, their ages ranged from 11-to-12 years old. There were six (18%) students who described their ethnicity as Hispanic or Latino with the other 27 (82%) of students not identifying as such. The racial makeup of the class was: 53% White or Caucasian, 33% Asian, and 14% Mixed-Race. Eleven students (33%) in the class were in the Special Education Program and two students (5%) had 504s, one for hearing impairment and the other for attention deficit hyperactivity disorder (ADHD).

There were seven parent-student partnerships in this study. Parent participants volunteered to participate. The student participants were chosen based on their parents' choice to participate in the study. The students' results were then matched with their parents' reporting to help analyze data. There were seven student participants (21% of the physical education class), five male and two female. Of these seven students, one identified ethnically as Hispanic or Latino. The racial make-up of the remaining student participants was: four White or Caucasian, two Mixed-Race and one Asian. None of the student participants had 504s or language barriers. One student was enrolled in a program through the Special Education Department (SPED). The demographics of the student participants closely reflect the school's racial, ethnic, and gender make-up.

All parents of my seventh-grade physical education class received an email explaining the action research project and asked for their consent to participate. Parents used a Google Form

to consent to participate. Of the 33 students' parents, seven consented to participate. Of these seven parents, all signed up as individuals, so the seven parents represent seven different families. There were four males and three female adult participants. There were five parents that described themselves as White or Caucasian, and two as Asian. No parent participants defined their ethnicity as Hispanic, Latinx, or Spanish.

Data Collection Strategies

The study collected data to measure two elements. First, it measured changes to the growth mindset language parents used at home. Second, it measured the effect parent language had on a student's attitude towards running. The overall change I wanted to assess was students' mindsets towards effort and self-improvement in running during physical education. Data were qualitatively and quantitatively analyzed in order to understand and explain three things: First, I assessed the outcome of parent language and changes on student's mindset; second, any changes in student attitude towards running and third, student motivation.

Data collected from the parent participants included the pre-post intervention Parent PE Involvement survey (Appendix A), which offered quantitative and qualitative data. There were 11 questions that used a five-point Likert-type scale, and one question was open-ended for parent comments. Parent participants also completed a quantitative Parent Bi-Monthly Intervention survey (Appendix B), a five-point Likert-type scale with one open-ended qualitative question for comments.

For student participants, the pre-/ post-intervention Student Reflection - December and February (Appendix C) provided qualitative data. Additionally, student participants wrote responses to journal prompts (Appendix D) after each weekly training run. These qualitative data asked student participants to reflect on their mental, physical, and social experiences during

running. Finally, researcher's field notes (Appendix E) also provided qualitative data. These notes were originally recorded in a Google Document on a private Google Drive folder and later as a handwritten notebook locked in a filing cabinet after each day of teaching for the duration of the study.

Parent involvement surveys. The first of two surveys for parents was a pre-/ post-intervention survey called Parent PE Involvement survey (Appendix A). This survey assessed parents' self-reported verbal communication levels with their child and what amount of information related to physical education the child shared with their parents. The second survey was the Parent Bi-Monthly Intervention survey (Appendix B). It contained five questions focused on how often parents were using growth mindset language at home with their child and how often their child was sharing details about their running performance.

Parent PE Involvement survey. The survey was an 11-question Likert-type scale with one open-ended question for parents to share their comments regarding their communication, their child's growth mindset development, their child's communication, and anything else at home that contributed to their level of involvement with their child's learning.

The Likert-type scale was a 5-point scale, ranging from "always" (5 point) to "never" (1 point). The survey was divided into two sections, *Language Modeling* (6 questions) and *Observations* (5 questions). Parents had the option to skip any questions that made them feel uncomfortable or may have exposed an area of perceived vulnerability in their parenting.

The first six questions investigated the use of parental language modeling at home. The first two questions evaluated the level of involvement in their child's learning in physical education. Those questions were *How often do you speak with your child about what they learn in PE?* and *How often does your child talk about running in PE?* The next two statements

examined the amount of praise parents gave their child. For example, *I praise my child for their effort and improvement in PE*. The last two questions in this section focused on how much feedback parents provided their child in support of their performances, such as, *I provide feedback for my child to improve physically in activities for PE*.

In the second section of questions, *Observations*, parents provided feedback regarding their level of understanding of how their child performs in physical education, their student's attitude towards running, and how often their child shares about what they learn in class. The first two questions for parents were centered around their knowledge of how their child approached running. For example, *My child does not look forward to running*. The next two questions examined how often their child expressed their mindset for improvement. One question was, *My child talks about their improvement in running*. The last question measured the level of communication about learning in physical education, from the child to the parent. The question was, *My child shares what they learn in PE with me*. The survey finished with the qualitative prompt, *Please provide any additional comments or thoughts you would like to share*. Parents had this opportunity to inform me of any information that may have been helpful to understand their level of communication, praise, feedback, and overall involvement with their child's learning, or any obstacles their child may have been facing, like a lack of sleep, illness, or other reasons.

For each parent, the use of language and level of communication with their child was analyzed quantitatively and compared to the parent's observation of their child's attitude towards running. Later, the pre-intervention Parent PE Involvement survey was compared with the post-survey to analyze growth in occurrence of language modeling at home and the child's attitude change, if any, towards running. In order to understand the amount of parent language being used

at home, I grouped statement 1, with statements 3 through 6. Next, to analyze child communication with their parents, I grouped statement 2, with statements 9 through 11. The qualitative response for comments and thoughts were also analyzed and compared to the results to help explain any outliers in data analysis results.

Parent Bi-Monthly Intervention survey. The Parent Bi-Monthly Intervention survey (Appendix B) was the second survey used to assess the connectedness of parental involvement with their child's mindset development. Parents completed this survey three times, at the end of weeks 2, 4, and 6. The 5-point Likert-type scale used the ranges of "every day" (5 points) to "never" (1 point) to understand the frequency of parents using modeling language at and students using language that would indicate either a fixed or growth mindset. The first two questions focused on the parental use of growth mindset language and implementation of the study's Growth Mindset Guide (Appendix F) which was shared twice per month with parents through their personal email and was available to access via Google Classroom. The questions were, *How often are you using the Growth Mindset Guide to model the language in your home?* and *How often are you modeling growth mindset language specific to running?* The last three questions were centered around the student and their attitude towards running. The questions were, *How often does your child share how they feel about running?*, *How often does your child express improvement in running?,* and *How often does your child share how they did in their weekly training run?* The survey concluded with an open-ended prompt for parents to share their comments or thoughts about usage of the Growth Mindset Guide, observations of their child's attitude towards running, and any additional information about what may have impacted their involvement with their child. All questions in this survey provided an opportunity to help

understand the intervention process of the study and were considered as a reason for any change in data gathered from parents.

Data were gathered from the three bi-monthly surveys and analyzed quantitatively and compared to each other. This included data from weeks 2, 4, and 6 of the study. Together, the five questions were used to analyze the level of parental involvement and compare it to the verbal expression their child demonstrated about running. This was to determine if the study's intervention had an impact on a student's attitude towards running and running for self-improvement.

Student perspectives. There were two forms of data collected from students. The first was a pre-/ post-intervention Student Reflection (Appendix C). This qualitative reflection assessed students' attitude towards running in physical education. The second set of data collected were student journals. These weekly journals provided qualitative data about students' personal reflections to determine how they felt mentally and physically pre/post running, what motivated them, and how students viewed and approached running in class.

Student reflections. Prior to and after the study, all 33 students in this class were provided a Student Reflection - December/February (Appendix C) via Google Form to complete during class. Students' responses informed later lesson plans using feedback response that would allow me to teach through differentiated and cooperative teaching. These student reflections supported the data analysis to understand each student's current attitude towards running. Qualitative questions centered on students' feelings about running, whether they viewed running as challenging, how they were motivated to run, their mental preparedness, and specific feedback for me as a teacher that could help support their learning approach to running. They included two multiple choice questions with an option to add their own response if not shown. An example

question was, *What motivates you to run? Grade; Friends; Self; Teacher; Parent; Other*. Three questions asked for either yes or no responses. These questions evaluated students' feelings towards running and included the following questions: *Is running challenging for you?, If running is challenging for you, do you feel better after your run that you accomplished something hard?, Do you worry about running the days leading up to the run?* The last two qualitative questions were open-ended and students the opportunity to share how they felt towards running in their own words. These two questions were, *What would help make your preparation for running better?* and *Anything else you would like to share about running and how you feel?*

This qualitative reflection was used to shape my teaching strategies during and beyond the study. This study only analyzed information provided from students whose parents were also participating. For the seven students whose parents were participating, I kept a copy of their reflections with their parents' surveys in a private Google Drive folder. Then, I compared the individual student's responses to their parent's responses in the pre-/ post-intervention Parent PE Involvement survey to gather any data that would help explain the student's attitude towards and motivation for running.

Student journals. The second form of student data collected were weekly journals. This was an in-class assignment, graded only for completion. Students were provided with open-ended journal prompts (Appendix D) during the last 10 minutes of class after completing the training run. This occurred once per week during the eight-week study. Questions were grouped in themes. The themes included: mental approach to running, motivation, goal setting, and reflection on performance. During this time, students saw a repeat of the questions only once. One set of questions focused on gender equity. The question was duplicated for boy-identified

learners. The following is an example of the question for girl-identified learners: *If you identify as a girl, how do you feel about running with boys? Are you intimidated, talked to negatively/positively, is it motivating?*

Researcher field notes. During the first four weeks of the eight-week study, I kept a log of detailed field notes using Google Docs (Appendix E), all of which were secured with login credentials only known by me. The second four weeks, I recorded handwritten field notes and locked them in a filing cabinet in my office each day. I sat in my office for 10 minutes and typed my notes for the day after z-period, the class in which the research took place and the last class of the day. I would allot this time in order to keep my notes as timely as possible for the most accurate collection of data. I typed my notes to allow me to write more in a short amount of time, recording my observations from the day. Only after typing would I go back to edit spelling and grammar. I switched to handwritten notes half-way through the study because I found that the computer was slow to load and login, and handwriting my notes allowed me to write more quickly after class. I also found that handwriting allowed my thoughts to flow more freely and felt less formal than typing.

These field notes were written daily, five times a week. I only recorded observations about students who were participating in the study. The notes included their absences and participation, as well as students' behavior before, during, and after running activities and training runs. Examples of tracked behavior were levels of engagement, following directions, cooperation with peers, and asking for help. In addition, I tracked students' expression of language. For example, were students making positive or negative comments about class activities, or saying they wanted or did not want to participate. My notes also included a description of the day's lesson plan with a statement of the focus question, a short description of

the physical activity, and the growth mindset language used as part of the overall lesson for the day and week. Lastly, the notes recorded any unexpected events such as the weather, absences, or bell schedule.

Together, these field notes were compared with student journal reflections in order to understand any changes in students' attitude on running days. Data were then analyzed with each parent's observational response on the Parent Bi-Monthly survey and their child's attitude towards running. Any changes were recorded and analyzed with the post-intervention Parent PE Involvement survey. The triangulation of data provided ability to see sudden, gradual, or no change over the duration of the study.

Procedures

The study took place over eight weeks between January and February, at the start of the second semester after winter break. The study consisted of three phases: the pre-intervention phase (two days), the intervention phase (eight weeks), and the post-intervention phase (one day). Baseline data were gathered from students in December with the Student Reflection - December (Appendix C). This reflection was completed prior to the second semester in order to help me understand students' attitude and feelings towards running before any intervention measures. Information provided was used for lesson plans and to gather pre-intervention baseline data. Parent participants completed a Parent PE Involvement survey (Appendix A) one week before the intervention phase began. I introduced the intervention phase once the baseline data were collected.

The intervention phase included sharing the Growth Mindset Guide (Appendix F) with parent participants on the Saturday prior to the first full school week when the study began. There were eight different guides for parents to use throughout the study, one for each week.

Then, on Friday of weeks 2, 4, and 6, parents completed the Bi-Monthly Intervention survey (Appendix B). Each week of the study, students wrote responses to journal prompts about running that day. The only data used in the study was from students whose parents consented to participate. Other students' responses were used to help improve instructional strategies. Lastly, at the end of the study students completed the Student Reflection - February (Appendix C) on the Friday of week 8. Parents completed the Parent PE Involvement survey (Appendix A) on the Saturday of week 8. Data from seven student participants' responses were used for data analysis and all reflections were used to inform my teaching practices for the next school quarter.

Pre-intervention. All 33 parents of students in my z-period class were invited to participate in this study. Parents were sent an introductory email in December with a description of the study and a link to a Google Form to consent to participate (Appendix G). Originally, at the end of December, a total of nine parents completed their consent to participate. Of these nine, seven parents actually continued with the study. Since the study started at the beginning of a new semester, one student who was originally involved in the study dropped z-period physical education due to a scheduling change. Another parent that consented to participate never participated or responded to my email communication with them. The remaining seven parent participants were then sent an email in the first week of January with a link to our Google Classroom (Appendix H).

Once parents had the link to the Google Form and access to our Google Classroom, they completed the Parent PE Involvement survey (Appendix A), which took no more than five minutes. This baseline assessment was used to evaluate the level of communication parents had with their child, amount of feedback and praise parents gave their child for performance in physical education, how often children shared what they learned in class with their parents, and

how often children shared with their parents their feelings towards running in physical education. These data identified the level of parental involvement with their child's learning in physical education, what language they modeled at home, and parental observations of their child's attitude towards running.

In December, my students met in the library at the beginning of the class period to complete a short Student Reflection - December (Appendix B). This reflection was completed in about five minutes by 31 students. Two absent students completed it a few days later, using a link to the Google Form sent to their school email address. A total of 33 students completed their reflection by the end of the semester. All student reflections that were collected were used to assess my lesson plans and teaching strategies for the second semester, January-May. The focus was on students' mentality towards running, how difficult they report running to be, their motivation for running, how to improve in running, and additional support they would like to receive to improve in running. The reflections from the seven students with parents who consented to participate were extracted and placed in a folder on my Google Drive. Student data from the Student Reflection - December was then analyzed alongside their parents' observations. This was the second section in the Parent PE Involvement survey (Appendix A). Collectively, the quantitative analysis of student reflections identified key concepts and themes while the quantitative data collected from parent involvement shed more light on average responses.

Intervention. I used three instruments during the intervention phase to gather data from parent participants, student participants, and myself, as a researcher. The first was the Parent Bi-Monthly Intervention survey (Appendix B) which was completed on weeks 2, 4, and 6. The second was student journal reflections, written and turned in once a week after the training run. The third were daily researcher field notes that were gathered for eight weeks.

Parents received the Growth Mindset Guide (Appendix F) prior to the start of the first Parent Bi-Monthly Intervention survey and bi-weekly thereafter. This guide helped parents model growth mindset language at home with their child. The Growth Mindset Guide (Appendix F) introduced mindset theory as defined by Carol Dweck and explained the fixed and growth mindset. The guide was a means for parents to help develop or continue to support their child's mindset to be growth minded, specifically towards running in physical education.

Parent Growth Mindset Guide. I created the Growth Mindset Guide for weeks 1 through 8 based on the work of Carol Dweck (2006) and Angela Duckworth (2016). I provided parents with week 1 and 2 of the Growth Mindset Guide (Appendix F) at the beginning of the intervention phase. Additionally, emails informed parents that a new upload was available to Google Classroom on the Saturday prior to the start of week 1. Parents were also provided the date of the training run for the week. The training run changed each week depending on the weather because the runs took place outside on the track. By Sunday, parents looked over the guide and asked me any questions via email. Instructions in the Growth Mindset Guide included how to model growth mindset language with their child. This process was repeated twice monthly with different instructions in subsequent editions of the Growth Mindset Guide and communication of which day the training run would take place.

The theme of the Growth Mindset Guide for week 1 and 2 was praising effort. During these two weeks, parents would respond to their child's running situation with language that focused on developing their child's mindset, free of judgment. There were three situations described for parents: (1) child improved in their run; (2) child had the same performance; (3) child did not improve in their run. For each situation, there were two examples of responses parents could use to help frame their language, depending upon their child's situation in running

that day. For example, if a child's situation with running that week did not show improvement, a parent could say, *You put a lot of effort into this run. Tell me how we can work together to figure out ways for you to improve and what it is you don't like about running?* or *Running is hard. Don't feel bad if you can't do it yet.*

On Friday at the end of week 2, parents were sent an email to notify them of the Bi-Monthly Intervention survey uploaded to Google Classroom. The link was provided in the email for quick access. The survey took approximately five minutes, parents could only complete the survey once, and were provided a copy of their responses via email. This was repeated during weeks 4 and 6 of the study.

On the Saturday before the beginning of week 3, the next guide was posted on Google Classroom with a notification sent to all parent participants' emails. The Growth Mindset Guide for weeks 3 and 4 was themed around parental ideals for children. Dweck (2006) argued that parents who foster children's interests, growth, and learning create ideals that support the development of a growth mindset. As such, I focused on specific actions parents could take to engage more with their child's learning in physical education. Because not all students are interested in running, forming language that supports effort is an ideal that may foster cognitive growth.

The goals for these two weeks included moving beyond grades, athletic ability, and gender. Parents were provided two options to use as guides to form their language. One example of the eight options provided was: *It takes effort to improve. Your grades will reflect your growth over time. Your personal challenge to improve will be reflected at the end of the semester.* On the Friday of week 4, parents were sent an email with the link to Google Classroom to then complete the Bi-Monthly Intervention survey for weeks 3 and 4. This survey is the same as weeks 1 and 2.

Again, the Saturday before the beginning of week 5, the next guide was posted on Google Classroom with a notification sent to all parent participants' emails. During weeks 5 and 6, the Growth Mindset Guide concentrated on parents' language of constructive criticism and messages of failure. According to Dweck (2006), "*Constructive* means helping the child to fix something, build a better product, or do a better job" (p. 182). Instructions for parents were provided on the guide. For example, *You can use the following sentences word-for-word or adjust to fit your communication with your child. Structure your feedback language focusing on your child's effort, progress, and/or ways in their control to improve. See if you can make it a conversation.* I expected that as parents progressed in the study their level of comfort and understanding in how to use the guide would expand. I also expected that they would be able to model the language more specifically about their child's running. On the Friday of week 6, parents were sent an email with the link to Google Classroom to then complete the last Bi-Monthly Intervention survey for weeks 5 and 6. This survey is the same as weeks 2 and 4.

The last Growth Mindset Guide was sent out to parent participants on the Saturday before the seventh week. Parents were able to access the two-week guide via Google Classroom. The theme for weeks 7 and 8 was *The Power of Yet*. Dweck (2014) theorized from her studies that the word *yet* helped to provide more confidence for children as they worked more outside their comfort zones to learn something new and difficult. Parents were provided with ways to model the language of *yet* at home. For example, the child states *I'm not good at running,* the parent may have responded with the growth mindset language of *I'm not good at running,* yet. There were eight examples of how to help rephrase their child's language. This completed the intervention phase with parental modeling of language at home using a growth mindset guide and finalized the three Bi-Monthly Intervention surveys for weeks 2, 4, and 6.

Student journal prompts. All 33 students participated in a weekly training run as part of the class activity. This training run typically took place towards the end of the week. However, the day of the training run each week changed due to weather. I announced the running day to the class on Mondays.

On a training run day, the last 10 minutes of class were scheduled for students to write a reflection on their run. Students were instructed to sit in their roll call lines after changing out of their physical education uniform. Then, each student was provided a hard copy of that day's journal prompt. Students were instructed to write their name at the top and reminded that journals were only graded for completion. Next, students handed in completed journal reflections directly to me. All journal entries were read only by me. Their reflections helped me to assess where each student currently viewed their running ability and how to provide more individualized teaching. This included lessons which incorporated differentiated teaching and cooperative learning. Once this information was gathered, I pulled out the seven students journals whose parents consented to participate in the study. I then placed these journals in a locked filing cabinet in my office. Data from these students' prompts were analyzed with their parents' responses in the Parental Bi-Monthly Intervention surveys. Additionally, my researcher notes were more detailed on running days, specific to these eight students' behavior and attitude. The researcher field notes, student journals, and parent surveys were then compared.

The journal prompts had new questions each week for the first four weeks and then the prompts repeated in the same order. Revisiting the questions helped reveal any change in mentality towards running, motivation to run, and goals for running. Questions changed so they would not be redundant and so that students could answer each question with a fresh attitude. Each journal prompt had two questions. The theme for weeks 1 and 6 was how students felt

mentally before and after their run. Prompts for weeks 2 and 8 focused on running goals students may or may not have set for themselves. Weeks 3 and 7 journal prompts concentrated on forms of motivation students use to run. Lastly, week 5 highlighted gender equity. For example, the first question asked, *If you identify as a girl, how do you feel about running with boys? Are you intimidated, talked to negatively/positively, is it motivating?* The second question was directed with the same wording but for boy-identified learners. Similarly, students that identified as non-binary were asked to share how they felt running with students that identified as boys and girls. It was important to understand any social pressure students may be facing in PE, as it could help to illuminate the problem of gender equity in sports.

Post-intervention. At the end of the last week of the study, parents and students were provided with a post-study Google Form. Parent participants received the same Parent PE Involvement survey (Appendix A) as provided during the pre-intervention phase. This was sent via personal email and posted on our Google Classroom. This email was sent out on the Saturday of the eighth week of the study. Each participant's survey was compared with their pre-intervention survey to assess any levels of change to their language modeling at home and their child's attitude towards running.

Next, all 33 students completed the Student Reflection - February (Appendix B) in class on the same Friday. This was the same reflection students completed in December. When completed, the eight student participants were pulled from the Google Form and placed on the Google Drive with the parent surveys. Each of the eight students' reflections were then analyzed and compared with their pre-reflection to assess any change in mentality towards running. Lastly, I analyzed the parent pre-/ post- Parent PE Involvement surveys and the pre-/ post-intervention student reflections were compared with one another to assess the degree to which

students' mentality had changed towards running, the amount of parental involvement, the level of parental growth mindset language modeled at home with their child, and children's motivational changes for running in physical education.

Plan for Data Analysis

There were five data sources used to gather credible findings through triangulation. This includes two sources from parents, two sources from students, and one from me as the teacher researcher. Parent participants took the pre-/ post- Parent PE Involvement survey (Appendix A), and the Parent Bi-monthly Intervention survey (Appendix B). All students completed the pre-/ post- Student Reflection (Appendix C) and weekly journal prompts (Appendix D) on running days. Only students whose parents were involved in the study were separated from the class for analysis. Lastly, I wrote daily researcher field notes (Appendix E) using Google Documents, and once a week on running days I took more detailed descriptive and reflective notes. The data sources provided perspectives from parents, students, and the teacher researcher. This measure of credibility through triangulation helped to show the effect of parental modeling of growth mindset language with their child and any student changes in attitude towards running in physical education.

Qualitative analysis was used for the results of the student pre-/ post-intervention reflections, student journal entries, research field notes, and comments from the parent surveys (Parent PE Involvement & Parent Bi-monthly Intervention). Qualitative analysis involved data reduction. First, I organized the sources by reading all of the data and then re-reading and looking for words or phrases that would be coded naturally through the process to understand the participants from their points of view. Then, I categorized the data. From these categories, themes emerged. I also used this method to analyze my own researcher field notes, which may

have included anecdotal bias. I read these notes twice identifying codes and reducing the data to meaningful phrases. Additionally, I looked for consistency and contradictions in the codes from these instruments to help understand students' mindset towards running. A review of the codes revealed key similarities and differences, these were grouped into categories. The categories yielded larger, overarching themes that described participants' views about running in physical education and mindset about personal times and the class requirement of running.

Quantitative analysis was used for the 11 Likert-type questions from the pre-/ post-intervention Parent PE Involvement surveys, and the five Likert-type questions from the three Parent Bi-monthly Intervention surveys. The data collected from the pre-intervention Parent PE Involvement surveys were first assigned numerical values to each response for: "always" (5), "most of the time" (4), "sometimes" (3), "rarely" (2), "never" (1). The parent responses were recorded onto a Google spreadsheet and analyzed using descriptive statistics. I calculated the mean for all responses recorded. The mean showed more change and representation of data than median and mode. A percentage calculation did not clearly represent the data due to a small participant pool ($N = 7$). The results used data analyzed from the two sections, *Language Modeling* and *Observations,* to describe how often parents used growth mindset language modeling at home before and after the study, and parent observations of their child's attitude towards running. This process was repeated for the post-intervention Parent PE Involvement survey.

The Parent Bi-Monthly surveys focused on parents' language and their use of the Growth Mindset Guide at home. The numerical values were first assigned to each response: "every day" (5), "two-three times a week" (4), "once a week" (3), "once every two weeks" (2), and "never" (1). Parent responses were again recorded on Google spreadsheets to categorize and analyze the

data. I used descriptive statistics to measure central tendency, the mean of parent responses. The mean represented the participants' responses clearly because the mean is the average of the data. The data for all three Parent Bi-Monthly surveys were collected separately and analyzed using the mean and percentages. However, due to the small sample size *(N* = 7) percentages gave a false sense of precision. Therefore, the mean for each Parent Bi-Monthly survey was analyzed and combined to gather data from the six weeks of intervention. Lastly, the eight weeks of data analysis for parent language and parent observations were analyzed and compared for any differences from before, during, and after the study.

Summary

The purpose of this research study was to examine the effect of parental involvement using growth mindset language at home and the result of using such language on their child's attitudes towards running. The reason for exploring growth mindset as it related to running was due to student attitudes about running in physical education class. I observed that students verbally expressed their dislike for running, particularly when I would first announce the day of the week we would run. Additionally, I observed that girl-identified learners were not demonstrating their best running and were instead running with their friends. My hope was that through using growth mindset language modeling in class and at home, students could develop a growth mindset approach to running. The intervention took place over eight weeks. Students ran once per week and parents implemented growth mindset language at home in accordance with the Growth Mindset Guide (Appendix F) either daily or on running days. I measured the level of parents' use of growth mindset language using the Parent PE Involvement survey (Appendix A) and the Parent Bi-Monthly survey (Appendix B). I used student journals (Appendix D) and

student reflections (Appendix C) to measure students' attitudes towards running. I also maintained researcher reflective field notes for the duration of the study.

To conclude, this chapter introduced my action research project and described the setting and demographics of my classroom for both student and parent participants, the instruments used for triangulation, the procedures to conduct the study, and the plan for qualitative and quantitative data analysis. Chapter IV will further discuss the data collected and its analyses.

Chapter IV

Findings

Middle school students encounter challenges academically and socially that can have long-lasting impact into adulthood. During these pivotal years, students' development of mental disorders such as depression and anxiety can increase from peer victimization, academic pressure, racial differences, and sexual discrimination (World Health Organization, 2020). For girl-identified learners, there is a rise in the cases of mental health at a faster rate than boy-identified learners ("Women & Anxiety," 2018) and an increase in suicide from mental health issues (California Health Care Almanac, 2018). According to Appleby and Foster (2013), physical activity and participating in sports can encourage girl-identified learners to build their self-efficacy, confidence, and improve anxiety. During physical activity, the brain releases endorphins that help to enhance these social and emotional problems (U.S. Department of Health and Human Services, 2015). However, there are some factors that may negatively influence girl-identified learners when they participate in physical education and the sports and activities played in PE. For example, the media portrays women and femininity as inferior to men and focuses on women's bodies and looks rather than their performances (Trolan, 2013). Also, girl-identified learners receive negative social influence from their friends and parents in the specific sports they play or involvement in physical activity outside of school (Jaekwon, 2015).

There are two possible resolutions for girl- and boy-identified learners to view themselves in a positive way, build confidence, and self-efficacy. The first solution is through the development of a growth mindset where failures do not define who they are, and success is viewed as a continuous process over time. The second is to have more parental involvement in their learning in school. Dweck (2006), along with Allison Baer and Heidi Grant, did a study that

concluded that students with a fixed mindset were more depressed. However, those with a growth mindset paired with depression were able to combat their mental disorder by confronting problems and facing them, not letting them define who they were (p. 37). Further research proposed that students with a growth mindset who work hard, do not see failure as a setback but something to learn from, build resilience and grit, demonstrate intrinsic motivation for self-improvement and self-efficacy and achieve more academic success in school (Dweck, 2006; Haimovitz & Dweck, 2017; Snipes & Tran, 2017; Greenleaf, Martin, Petrie, & Srikanth, 2015). In addition to growth mindset, more parental involvement during the middle school years has shown to be beneficial for students' mental and academic health (Wang, La Salle, Do, Wu, & Sullivan, 2019). Hill, Witherspoon, and Bartz (2018) point out that the triad of communication and level of involvement between student, parent and teacher helps support students' learning and development at home.

The purpose of this action research project was to study the effect of parental involvement with seventh-graders' mindset towards running during physical education to see if parental language modeling of the growth mindset would have an impact on their child's approach to weekly training runs. The chapter begins with an overview of the various data collection tools and an overview of the methods, followed by the demographics of parent and student participants. From there, the quantitative data was analyzed with the parent pre-/ post-involvement survey and parent bi-monthly intervention survey. Lastly, the qualitative data was then analyzed through student reflection (pre-/ post-intervention), journal prompts, and researcher's field notes. My action research question was: *How does parental modeling of growth mindset language affect seventh-grade students' mentality towards running for self-improvement?*

Overview of Methods and Data Collection

Data were qualitatively and quantitatively collected over the course of an eight-week period. Data collected from the parent participants included the pre-/ post-intervention Parent PE Involvement survey (Appendix A) that offered both quantitative and qualitative data. There were 11 questions that used the Likert-type scale, and one question was open-ended for parent comments. Parent participants also completed a Parent Bi-Monthly Intervention survey (Appendix B), a five-statement Likert-type scale with one open-ended qualitative question for comments. For student participants, the pre-/ post-intervention Student Reflection - December and February (Appendix C) provided qualitative data. Additionally, student participants wrote responses to journal prompts (Appendix D) after each weekly training run. These qualitative data asked student participants to reflect on their mental, physical, and social experiences during running. Finally, qualitative data were collected from researcher's field notes (Appendix E) recorded originally on a Google Document on a private Google Drive folder and later as a handwritten notebook locked in a filing cabinet after each day of teaching for the duration of the study.

Demographics of the Participants

There were seven parent-student partnerships in this study. Parent participants volunteered to participate. The student participants were chosen based on their parents' consent to participate in the study and were then matched with their parents to help analyze data. There were seven (21%) student participants from the physical education class, five (72%) male and two (28%) female. Of these seven students, one (11%) identified ethnically as Hispanic or Latino. The racial make-up of the remaining student participants was: four (57%) White or Caucasian, two (28%) Mixed-Race and one (14%) Asian. None of the student participants had

504s or language barriers. One (14%) student was enrolled in a program through the Special Education Department (SPED). Student participants closely reflect the demographics of the school's racial, ethnic, and gender make-up.

All seven parents signed up as individuals, so the parents represented seven different families. There were four male and three female adult participants. Five parents (72%) described themselves as White or Caucasian, and two (28%) as Asian. No parent participants defined their ethnicity as Hispanic, Latinx or Spanish.

Analysis of Parent Involvement Surveys

Parent participants completed two types of surveys over the course of eight weeks. The Parent Involvement survey (Appendix A) was given pre- and post-intervention to measure parents' level of involvement with their child at home, and the level of communication from child to parent. Secondly, the Parent Bi-Monthly Intervention survey (Appendix B) was shared with participants every two weeks (week 2, 4 and 6) in order to measure the parents' level of involvement using growth mindset language at home, and their child's verbal expression of their learning and physical performance in physical education.

Pre/post-involvement survey. Parent participants reported their level of involvement at home with their child's learning, and their child's communication with them using a 5-point Likert-type scale, ranging from "always" (5 point) to "never" (1 point). The survey was divided into two sections, *Language Modeling* (6 questions) and *Observations* (5 questions). There was one fixed mindset statement and three growth mindset statements. For example, the fixed mindset language stated, "I praise my child for their grades in PE" and a growth mindset language stated, "I praise my child for their effort and improvement in PE."

The results were analyzed two ways: overall parent involvement (Figure 1) and parent responses per the 11 survey questions (Figure 2). Figure 1 demonstrates the mean results for all participants (*N*=7) responses pre- and post-intervention. The figure is organized by the level of parental involvement at home (oral language and listening) as reported by survey responses of parent language and child's communication. Parent participants self-reported their usage of growth mindset language at home using the Likert-type scale.

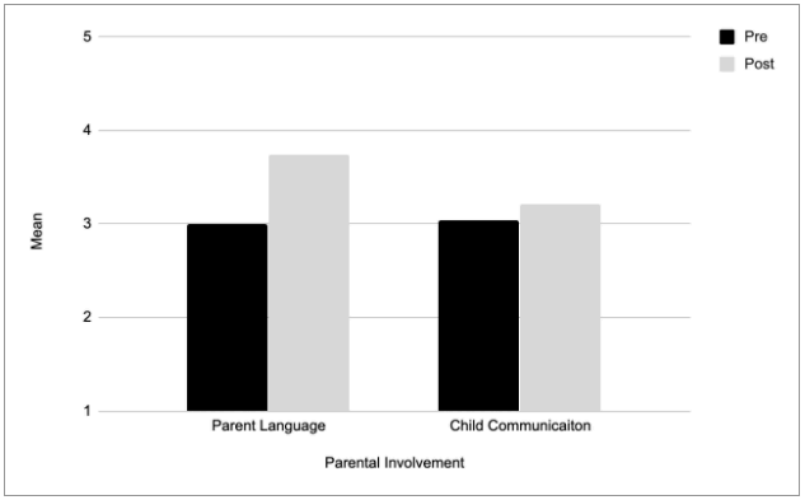

Figure 1. Mean response for parental involvement (*N*=7).

Overall, the data in Figure 1 suggests that parents increased their usage of growth mindset language at home, and their child's verbal expression also increased in regard to their performance and learning in physical education as it relates to running.

As shown, parental language increased from a mean of 3.00 to 3.73, and child's communication increased from 3.04 to 3.21. These results suggest that children shared more with their parent regarding their performance in running and learning. It is notable that parental involvement increased with their child at home through language as defined through praise, feedback, and questions. These results are further broken down in Figure 2.

Figure 2 shows the mean for each response to all 11 questions in the parent involvement survey. As organized in Figure 2, the first five statements relate to the parental involvement of language at home; the next four statements represent their child's expression of performance and learning; and the last two represent parents' observations of child's attitude towards running.

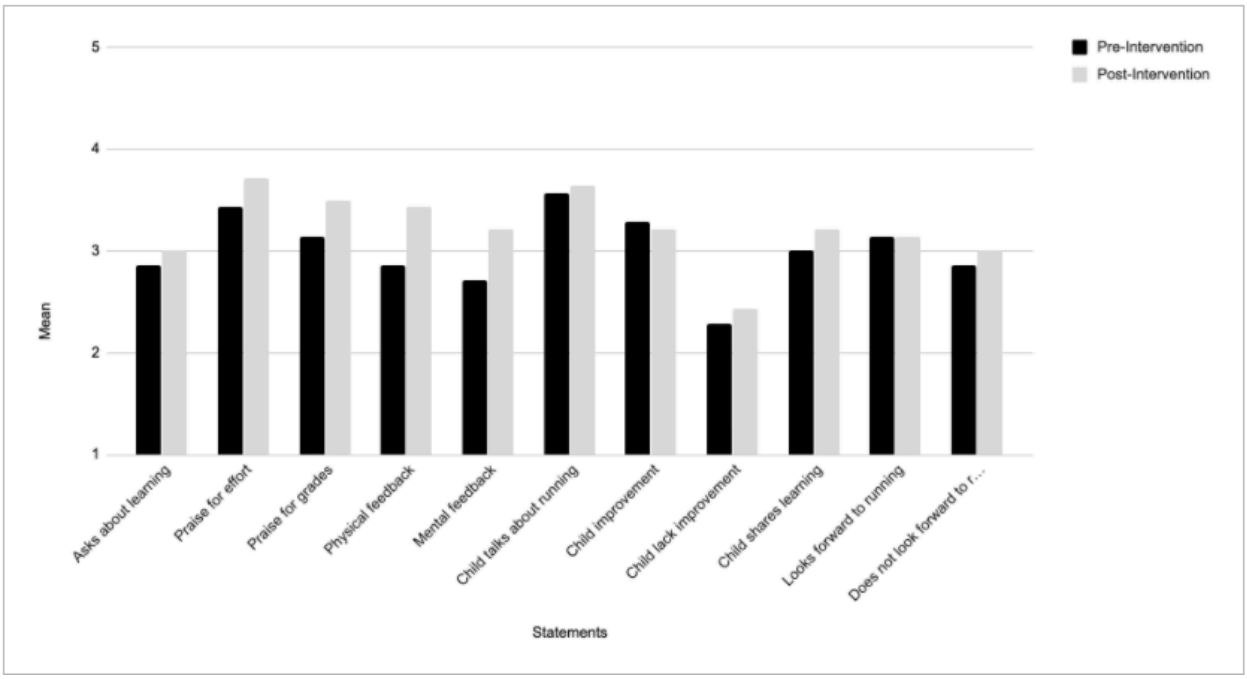

Figure 2. Parent pre/post intervention mean responses (*N*=7).

A comparison of pre- and post-intervention results in Figure 2 shows that parents increased their language, most notably towards feedback for their child's physical performance 2.86 to 3.43 and in their feedback to help their child improve mentally 2.71 to 3.21. The next most notable increase was parental praise in two forms: effort increased from 3.43 to 3.71 and grades increased from 3.14 to 3.5.

At home, the data suggest children talked more about running in physical education, with the mean increasing slightly from 3.57 to 3.64, and children also showed an increase in sharing about what they learned in physical education, as the mean grew from 3 to 3.21. When comparing pre- and post-intervention results, children showed a small decrease in talking about

their improvement in running from 3.29 to 3.21 and an increase in talking about their lack of improvement in running from 2.29 to 2.43. In addition, parents observed an increase in their child not looking forward to running in physical education from 2.86 to 3; and on average, they observed that their child did not show a change in looking forward to running in physical education, the mean staying consistent at 3.14.

Overall, these data show an increase in parental language which includes both growth and fixed mindset praise and feedback. With four of five questions centered around praise for effort, physical improvement, and mental improvement, Figure 2 illustrates the mean of involvement parents had with incorporating more language with their son/daughter's learning and development in physical education. The participants' mean for involvement with their child and running increased, and the mean related to children's communication also increased. Parents' observations of their child's attitude toward running showed only a change with their child not looking forward to running in physical education while looking forward to running stayed the same.

Parent bi-monthly intervention survey. The Parent Bi-Monthly Intervention survey (Appendix B) was used to assess the connectedness of parental involvement with their child's mindset development. Parents completed this survey three times: at the end of week 2, 4 and 6. The 5-point Likert-type scale used the ranges of "every day" (5 points) to "never" (1 point) to help obtain an understanding of the use of modeling language at home by parents and language used by students that would help to describe their mindset as fixed or growth. The results were analyzed in three ways. Figure 3 illustrates the average results for parent participants' responses (N=7) to all three bi-monthly surveys as grouped by weeks 1 and 2, weeks 3 and 4, and weeks 5 and 6.

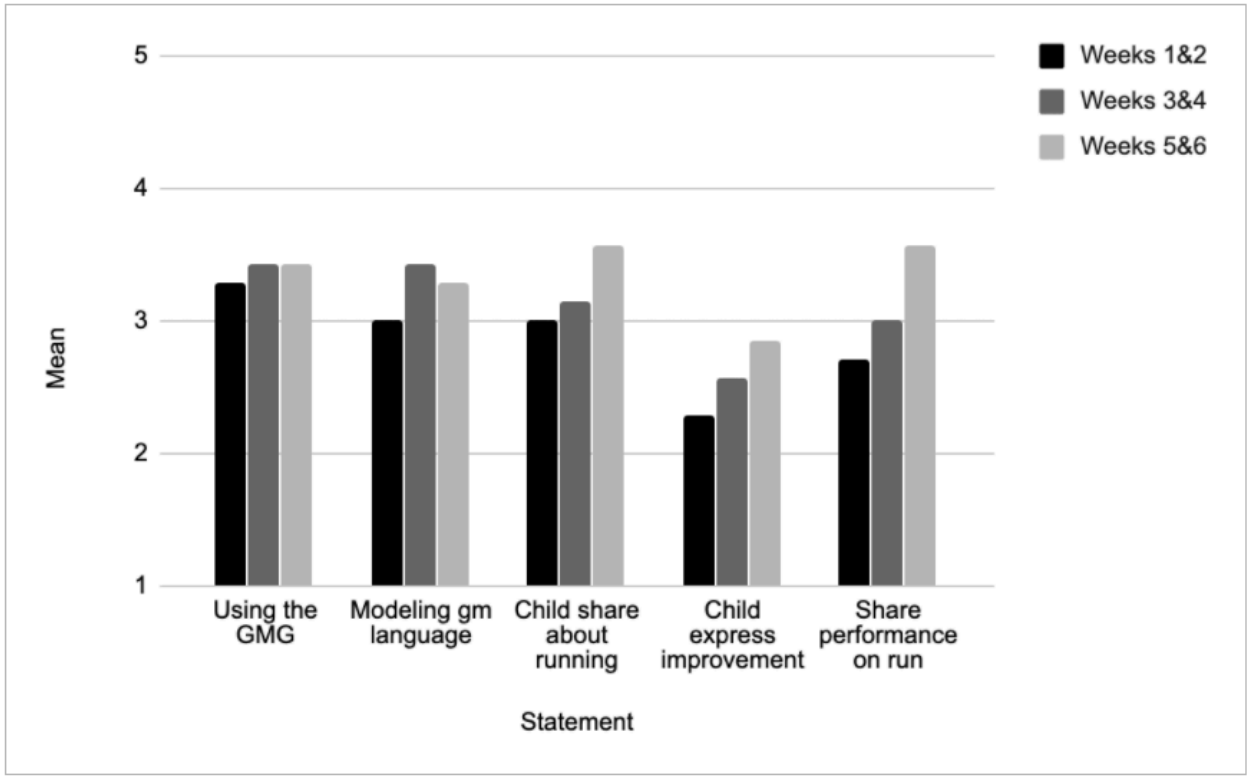

Figure 3. Mean parental response for all three bi-monthly surveys (*N*=7).

The data depicted in Figure 3 show an increase in children's communication with their parents specific to their performance and improvement in running. In addition, there was a slight decrease in modeling growth mindset language by the end of week 6, and lastly there was no change from week 3 to 6 in terms of how often parents used the Growth Mindset Guide.

The mean of parental responses regarding their use of the growth mindset guide increased from 3.29 to 3.42, while modeling growth mindset language increased from 3 to 3.43 and then decreased weeks 5 and 6 to 3.23. Overall, the average parent reported that their child's communication increased over the six weeks. More children shared their feelings about running starting week 2 with an average response of 3, to the end of week 4 at 3.14, to the end of week six at 3.57. The average number of children slightly increased in their expression of their improvement in running from 2.29, to the end of week four at 2.57, to the end of week 6 at 2.86. The biggest change in response is shown in the child's expression to their parent in how they did

on their weekly training run. The data show that there was an increase from 2.71, to 3 at the end of week four, to 3.57 at the end of week 6.

Figure 4 illustrates the results of each parent participant's response for the three bi-monthly surveys completed: weeks 1 and 2 (first survey), weeks 3 and 4 (second survey), and weeks 5 and 6 (third survey). Each parent is represented by a letter, followed by the bi-monthly survey number. Parent participants completed all questions in each survey, and each bar represents one answer to one question. There were five total questions on each bi-monthly survey, with three total surveys provided.

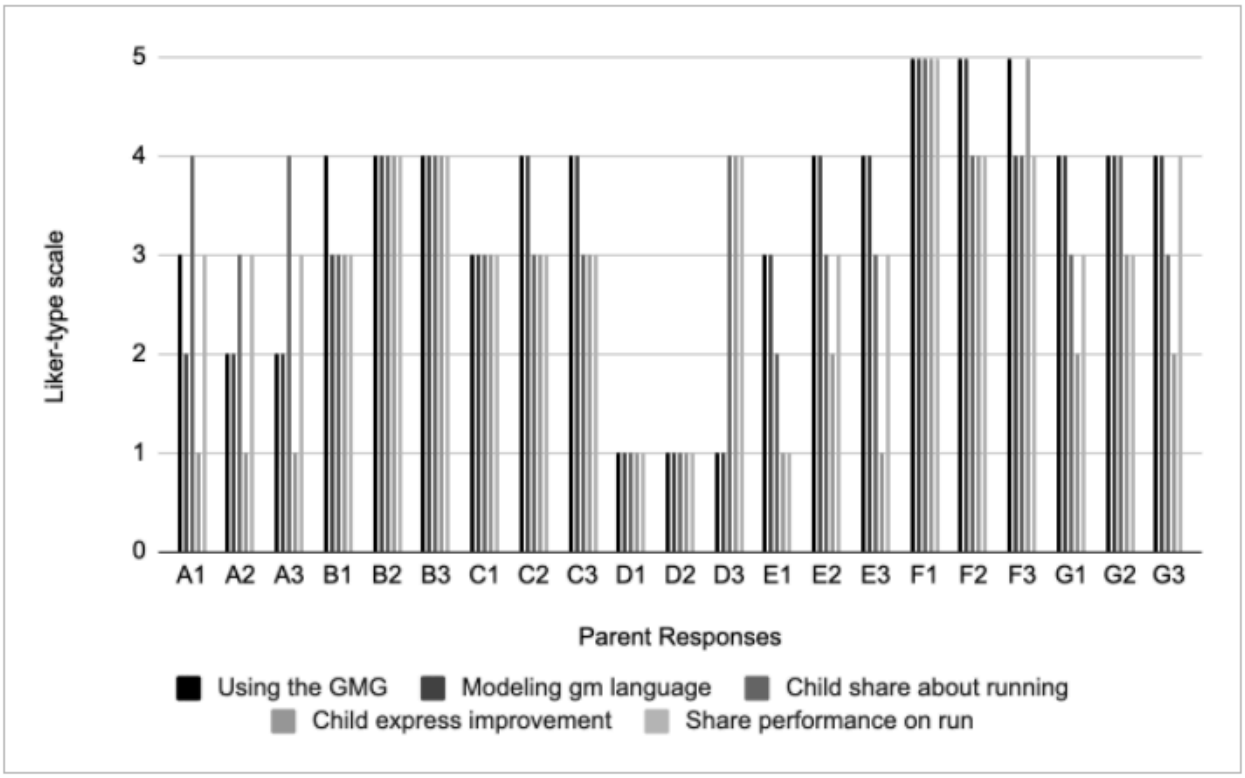

Figure 4. Parent responses for each bi-monthly survey (*N*=7). (1) Bi-monthly survey for weeks 1&2; (2) Bi-monthly survey for weeks 3&4; (3) Bi-monthly survey for weeks 5&6.

Figure 4 suggests that four of seven parents showed no change in growth mindset language at home from weeks 2 through 5, five parents increased their usage of growth mindset language by more than one third during weeks 2 through 6, and two parents decreased their use

of growth mindset language by a seventh during weeks 3 through 6. The data suggest that each individual parent has unique data as they relate to their involvement at home with their child. In addition, six of seven parents reported that their child showed a change in attitude towards running. One child remained the same over the six weeks, two children increased their level of talking to their parent during weeks 3 through 6, one child showed an increased only during week 3 and 4, and one child showed an increase later during weeks 5 and 6. There were two children that decreased their expression of attitude towards running, one child only during weeks 3 and 4, and one child from weeks 3 through 6. These data demonstrate that children showed a change in expressing how they felt towards running with four children showing an increase in communication with their parents over the course of the six weeks.

Next, the data demonstrate the connection of how often children talk about their weekly run in relation to their performance, and their improvement in running. Overall, children talk about running at home more often towards the middle to end of the six weeks. Two children showed an increase during weeks 3 through 6, one increased only during weeks 3 and 4, and two showed an increase only during weeks 5 and 6. Two children did not show a change over the six weeks and one showed a decrease during weeks 3 and 4, and one during weeks 3 through 6. These data show how parent participants' involvement with growth mindset language increased overall, and how there was also an increase in children's expression of feelings, improvement, and weekly performance towards running.

Amongst the data, there was an outlier. Figure 5 represents one parent's responses to each statement regarding their implementation of growth mindset language, and their child's communication with them.

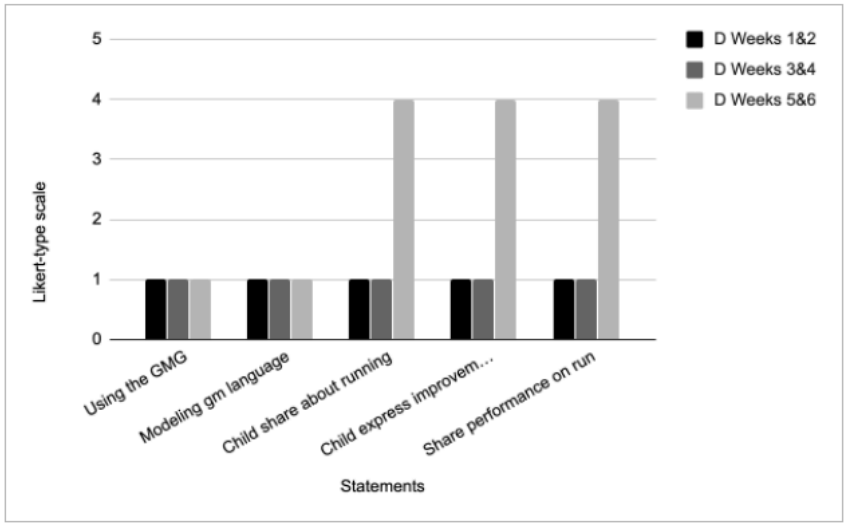

Figure 5. Parent D responses for all three bi-monthly surveys (n = 1).

The data demonstrate that this participant, Parent D, did not implement the growth mindset guide or use growth mindset language at home with their child over the course of the six weeks. It also shows that until weeks 5 and 6, their child was not communicating about their feelings towards running in physical education, improvement in performance, and overall outcome of their weekly training run. Weeks 5 and 6 show a spike from in responses from "never" (1) to "two or three days a week" (4) that their child shared more with their parent about their feelings, improvement, and performances.

The data from the two surveys reveal an overall increase in two language components. First, parents were more involved at home using growth mindset language with their child. Second, their children showed more expression of their feelings, performance, and learning towards running in physical education. In the following section, student reflections and student journals are analyzed to provide qualitative data.

Analysis of Student Perspectives

Data were collected from the seven students whose parents consented to participate. The first of two qualitative sources for students was from a pre-/ post-intervention Student Reflection

(Appendix C). This reflection helped to measure students' attitudes towards running in physical education. The second qualitative source for students was their weekly journal (Appendix D), recorded right after their training run. These weekly journals qualitatively measured students' personal reflections of how they felt mentally and physically pre/post running, what motivated them, and how they viewed and approached running in class. Table 1 shows the six themes for all three qualitative data sources which includes student reflections, student journals and researcher field notes.

Table 1

Themes from Qualitative Data Sources

Theme	*Data Source*	*Data Source*	*Data Source*
Approach of students' motivation for running.	Teacher Fieldnotes	Student Journals	Student Reflections
Increase in instructional strategies for students learning.	Teacher Fieldnotes	Student Journals	-
Students' experience with running in contrasting weather conditions.	Teacher Fieldnotes	Student Journals	Student Reflections
Students' experiences of preparedness for running days.	Student Journals	Student Reflections	Researcher Fieldnotes
Impact of physical wellness with students' attitude towards running.	Student Journals	Researcher Fieldnotes	-
Students' connections with running and the feeling of accomplishment.	Student Journals	Student Reflections	Researcher Fieldnotes

Pre- /post-intervention student reflections. Students completed the pre- /post-intervention student reflection via our private Google Classroom using a Google Form. Students answered seven questions. Each question was coded for key words so that the data could be used to measure my action research question. Table 2 shows that from the 14 student reflection responses, four themes were revealed: (1) Approach of students' motivation for running; (2) Students' experiences of preparedness for running days; (3) Students' connections with running

and the feeling of accomplishment; (4) Student-teacher and student-student relationships impact how a student mentally approaches running.

Table 2

Excerpts from Student Reflections

Theme	*Example*	*Example*	*Example*
Approach of students' motivation for running	Student B: "Friends and self"	Student D: "The fact that I get to go home and play video games."	Student A: "Grades, friends, self, teacher, and parent."
Students' experiences of preparedness for running days	Student G: "I don't do anything."	Student E: "I think to myself that I will be able to complete the run."	Student D: "I stress out and feel anxious."
Students' connections with running and the feeling of accomplishment	Student F: "It feels good after you finish to make the time."	Student A: "I feel better after run that I accomplished something hard"	Student D: "Yes, I feel better."
Student-teacher and student-student relationships impact how a student mentally approaches running	Student A: "Not running on Mondays because there is no warning, and not running on Fridays, because when we get to Friday, I am exhausted from the rest of the week."	Student C: "To know in advance."	Student F: Less harder goals to get easier times."

In Table 2, the student responses are examples and quotes from their reflections that illuminate how students feel prior to a run, how they approach running through preparation, and what motivates them to run. The data support the action research question of how students' mentality effects their run. For example, students reported different forms of motivation. Three were motivated by friends, two were self-motivated, and one was motivated by grades. One student shared that they were motivated by, "The fact that I get to go home and play video games." This is an external motivation, of which friends, grades, teacher and parent fall under. Self-motivation is the only intrinsic motivation recorded.

Students' mentality varied as they shared how they prepared for running in physical education. By the end of the eight weeks, two students reported that they set a goal to try to beat, one student talked with their friends about how they wanted to do well on the run, one stressed out and felt anxious, one did not do anything to prepare because they do not like running, and

one student did self-talk. Responses showed improvement from feeling anxious and stressed to setting a goal, to talking with friends. After a run, students shared how they felt physically and mentally. One student shared, "I feel better after a run that I accomplished something hard." However, by the end of the five weeks, four students reported that running was not challenging for them. The number of students had decreased from five students who originally said running was not challenging for them. At the end of eight weeks, only three students reported that running was challenging for them.

The last theme that emerged was the dichotomy of the teacher and student relationship. As part of the class, students were given the opportunity to candidly express their ideas about how to better prepare mentally and physically for running days. The feedback from students in the pre-intervention student reflection was useful in adapting my instructional strategies. The data showed that students did not want to run on Fridays, and they wanted more advanced notice about when a training run was planned for the week. For example, one student shared, "Not running on Mondays because there is no warning, and not running on Fridays, because when we get to Friday, I am exhausted from the rest of the week." In the post-intervention reflections, students continued to share that they wanted to know more in advance when the run would be.

Journal prompts. Students completed one journal per week, at the end of the class period, on a running day. Paper copies of the journal prompts were given to students and returned to me face down into a folder. It should be noted that for one training run day, due to the longer distance, we ran out of class time and students completed their journal the following day. Next, I separated the seven students whose parents were involved in the study, and then read through and coded for key words, which later developed into categories and themes. In Table 1 above, these six themes are consistent with the seven themes that also emerged from my

researcher field notes. The data from student journals measures students' mentality towards running through their motivation for running, external factors like weather and sickness, preparedness for running, the student-teacher relationship, challenges, and daily lessons. Lastly, these data suggest the perspectives students had towards gender during running in physical education. Students shared that running with their peers of the opposite gender did not influence their running performance or mentality towards running. Some students shared that it was the individual person that motivated them to run.

Table 3 demonstrates the student responses to journal questions and the factors that shape students' attitudes towards running. Each question from the student journal prompts are represented in the chart. There are three student responses shared for each question.

When students were asked questions to describe how they felt and how it related to their mental and physical well-being, they tended to write more and provide more details. For example, when students were asked how they felt mentally and physically before and after a run, one student responded: "I felt stressed but confident because it is cold outside. I felt relieved and happy that I got a good time." However, when asked a question that had them describe what they thought, answered were less detailed. For example, the question what do you think helped you run the whole time? One student answered, "Music." Although I asked for two sentences, many students did not write in full sentences or more than a few words. Nevertheless, students' responses were very meaningful and helped demonstrate how they approached running in physical education and why they ran. Depending on the type of run and the weather outside, students approached each run separately.

Table 3

Excerpts from Student Journals

Question	*Example*	*Example*	*Example*
Q: Did you have a running goal? What was it, did you meet it? If not, why did you choose not to set a goal and what goal would you set for next time?	Student A: "Yes. I am a really bad runner, so my goal is always to just make the time limit, which I did by 46 seconds."	Student D: "No. I don't like goals. Maybe hit the time limit."	Student G: "No. I wasn't having a goal because it was too hot and I wasn't thinking of the 4 lapper at all."
Q: Describe how you feel mentally before and after the run?	Student B: "I was anxious because I had a cough and was tired. I didn't think I would beat my time. I felt tired after the run."	Student C: "I felt motivated because it was a fast run. So I wouldn't have to feel tired and painful for too long. I felt ok about my time, and I felt very tired. I also felt that I wanted to go home."	Student E: "I felt stressed but confident because it is cold outside. I felt relieved and happy that I got a good time."
Q: Did you feel prepared to run today?	Student F: "No, I was very nervous about the part that you had to beat your time. Other classes don't have to do this."	Student B: "No, I was hungry and tired that day. I also stepped on my foot weirdly."	Student G: "I felt great for the run. I thought anywhere below 50 is perfect temp."
Q: What motivated you to run?	Student E: "A friend and a grade."	Student C: "My last time limit (to beat it), and my friends that were in front of me."	Student A: "I feel motivated to run by grades. However, I feel pretty discouraged to run because I have always been a terrible athlete."
Q: If you identify as a girl, how do you feel about running with boys? If you identify as a boy, how do you feel about running with girls?	Student E: "I feel normal when I run with girls and I am not intimidated by them either. I am talked to positively and when I am talked to it is motivating."	Student D: "No I don't feel anything, they (girls) are just people in a crowd."	Student B: "I really don't mind. It depends on the person."
Q: What do you think helped you run the whole time?	Student G: "I felt motivated after I heard there was six minutes on my last lap."	Student F: "Because stopping running makes it harder to keep going."	Student D: "Music."
Q: What do you think made you stop to walk during your run?	Student B: "I was tired and my legs hurt."	Student C: "What made me stop to walk was that I was tired and my legs hurt from running."	Student A: "I am extremely physically unfit, and the duration of the run along with my cramps, thirst, and the heat made me walk. I do not know how people can possibly run the whole time."

Students shared what motived them to run, and overall students shared how friends were inspirational to help push them to accomplish the run. In addition to, students responded that they were not impacted by running with boy- or girl-identified learners, but that it was the individual person that impacted their running in a positive way. For example, one student responded by writing, "I feel normal when I run with girls and I am not intimidated by them

either. I am talked to positively and when I am talked to it is motivating." With a sense of gender equity when it comes to running, my students' responses in how they approach running did not illustrate a negative view of gender and running. The themes for qualitative data also emerged from my researcher field notes. In the next section, I analyze the data from my notes, which also include whole class data. These data helped to adapt my instructional strategies. Additionally, there are specific data for the seven students whose parents consented to participate in the study.

Analysis of Researcher Field Notes

The researcher field notes were recorded for the first four weeks in a Google Document on a Google Drive; and during the second four weeks, notes were handwritten in a spiral notebook (Appendix E). Notes were recorded daily for every day we had class and I was present. The notes included student absences and participation, as well as students' behavior before, during, and after running activities and training runs. Examples of tracked behavior were levels of engagement, following directions, cooperation with peers, asking for help, etc. In addition, I tracked students' expression of language. Such as, were students making positive or negative comments about class activities, or saying they wanted or did not want to participate. There were 25 total entries. Each entry was coded and categorized, and the seven themes emerged from this qualitative data. Table 1 shows these themes for all three qualitative data sources.

Table 4 illustrates the seven themes pertaining to motivation, instructional strategies, weather, preparation, physical wellness, accomplishment, and student-teacher relationship. The examples shared are representative of run days and non-run days. They provide an overall understanding of observations made during the eight weeks of data collection.

Table 4

Summary of Themes from the Researcher's Field Notes

Theme	*Example 1*	*Example 2*
Approach of students' motivation for running.	Student G and Student E pushed each other to run harder and tried to beat each other. 2/11/2020 - Run Day	Students ran in one group to push each other more to improve. I heard students talking about their time and where they should be by when. 2/20/2020 - Run Day (mile)
Increase in instructional strategies for students learning.	Spoke to class about music as motivation, as expressed in their journals and reflections. Can now listen to music during class on run days. Students cheered and were happy. 1/29/2020 - Run Day	At the end of class, the last 5 minutes talked about goal setting. From previous journals it's clear students need help setting goals for defining what a goal could be. Walked about the goals the day before their run to help motivate them. Asked a student to share their goal for tomorrow...Goals were also shared as i.e. to run more, talk less, not run with a friend or push your friends more and yourself. 1/22/2020
Students' experience with running in contrasting weather conditions.	Sunny, nice day outside. Very little talking or chit chat during warm up. 2/20/2020 - Run Day	72°F hotter day, end of day hard to run 4 or 6 laps. Side aches. 2/25/2020 - Run Day
Students' experiences of preparedness for running days.	Student F ran the 5k challenge even though he was sick, brought a water bottle, kept to himself. 1/24/2020 - Run Day	Student D didn't know it was a Run Day, admitted to not listening and talking during instruction. But still beat his time. 2/25/2020 - Run Day
Impact of physical wellness with students' attitude towards running.	Student D - Was jogging at the end. Not sure if he ran too fast at the beginning and ran out of gas, or if he didn't feel good from being sick the past 3 days. 2/16/2020 - Run Day	Student A - headache, said he felt like he's getting sick. Didn't look well, struggled to run. 2/20/2020 - Run Day
Students' connections with running and the feeling of accomplishment.	Student C - Was so happy she made it when I said she just got under the time. She was smiling and sitting with her friends after. 1/24/2020 - Run Day	Student F - First in class, beat his time, really tried hard and beat his time. No one near him as he runs. Self-motivated. 2/20/2020 - Run Day
Student-teacher and student-student relationships impact how a student mentally approaches running.	Progressing and improving. "When you make a mistake, which you most likely will because you are learning something new, go to home position. Listen for the next command and start again. Work as a team, don't blame someone but help them with non-verbal's." 1/30/2020 - Square Dancing	"Good job [student name] keep pushing." "You're on pace." "Push each other." Student E said "Thank you" when I said he was doing well. 2/25/2020 -Run Day

Within Table 4, the examples shared demonstrate the factors that impact students' feelings, attitudes, and overall mindset towards running in PE. For example, I adapted my instructional strategies based on the feedback provided by students and allowed students to use their phones or musical devices to listen to music during their training runs class (not normally allowed during school hours but since our class was after school, no other classes were around). This added a level of motivation for students for the last four training runs, from week 4 to 8. Additionally, I noted the weather for run days; and on the hot days, students looked like they

struggled more. For example, I wrote that students had side aches on February 25, 2020 during a long distance run on a hotter day. This demonstrates how external factors may have had an impact on students' mentality towards running that day and that each run day may not have been approached the same way by all students because of the weather.

Summary

The purpose of this action research project was to study the effects of parental involvement using growth mindset language at home and the effects it had with students' way of thinking towards running in physical education and what motivated them. Prior to the intervention, parents completed a Pre-Intervention survey (Appendix A) and students completed an in-class Pre-Intervention Student Reflection (Appendix C). The intervention took place over the course of eight weeks. During this time, parents were provided a growth mindset guide (Appendix F) to implement at home to support their language modeling with their child as it pertains to running. Every two weeks, parents completed a Bi-Monthly survey (Appendix B) that measured their level of involvement and their child's communication with their parents. Once a week, students had a training run and completed their in-class journal (Appendix D) after their run. At the end of the intervention, parents completed the Post-Intervention survey (Appendix A) and students completed an in-class Post-Intervention Student Reflection (Appendix C). Lastly, researcher field notes were kept daily.

The four data collection instruments were used to examine the effect of parental involvement at home with their child's cognitive development, the effect on students' mentality towards running, and the factors that motivated students to run. Qualitative data were collected through the students' pre- /post-intervention student reflections, student journals, and researcher field notes. These data illustrated that students approach each running day separately because

outside factors of weather and illness have an impact on their physical and mental well-being. Additionally, students' motivation changed when they were provided the opportunity to listen to music while they ran. Teacher instructional strategies were adapted to listen to students' responses of how to better prepare them for running days in class. This strengthened the student and teacher relationship. Lastly, students demonstrated that when runs were challenging, they felt a sense of accomplishment.

Quantitative data were collected using the pre-/ post-parent intervention surveys and the three bi-monthly surveys. When synthesizing these data, I found that overall parents' usage of growth mindset language at home increased and application of the growth mindset guide slightly increased from the first two weeks. This finding suggests how parental involvement increased over the course of the eight weeks. Next, parents reported that their child's communication regarding their learning, performance, and improvement in running increased. Lastly, parents reported observing their child's attitude towards running. These results point to that the level of involvement parents had at home not just through their modeling of the growth mindset language but also through active listening. With an increase in child to parent communication, it shows that children were sharing more with their more involved parents.

In the following chapter, interpretation of these results will be discussed in greater depth. This includes comparing and contrasting implications of this action research study with the studies from the literature review. Chapter V will then conclude with my plan for future action as a transformative teacher leader.

Chapter V

Conclusions

Anxiety can have an adverse effect on student performance, as such the California Department of Education created the Student Mental Health Initiative to bolster student mental health across grades K-12 ("Student Mental Health Plan", 2010). I encountered student anxiety last year during my physical education class. Students shared how they felt anxious and stressed about running each week in physical education. Additionally, a handful of parents emailed to express concern about their child's anxiety about running. Although the school reports show that only 1% of the population struggles with mental health disorders like anxiety, unofficially there are more students experiencing anxiety in specific scenarios like running in physical education. Since the Anxiety and Depression Association of America (2018) reports that girls from puberty to age 50 are twice as likely than men to have an anxiety disorder, exploring positive approaches to lessen anxiety in physical education among girl-identified learners supports gender equity in physical education. This was an influential problem to explore because of my role as a physical education teacher. It was important for me to understand how to support my students' mental, as well as physical, health.

My action research project sought to provide an opportunity for girl-identified learners to be involved in daily physical education (Topeorek, 2015) while developing a growth mindset (Dweck, 2006). Research has shown that students with a growth mindset have fewer mental health problems (Schleider, Abel, & Weisz, 2015). Further research supports the findings that parents' involvement in their child's learning can increase communication, contribute to future school success, and scaffold independence (Hill, Whitherspoon, & Bartz, 2018). Teachers and parents can support the development of students' view about their ability to be more malleable

by modeling messages of growth mindset (Dweck, 2006). My goal was that by increasing the development of a more growth mindset approach to running in physical education through teaching strategies, parent involvement, and growth mindset language by parent and teacher, my students would demonstrate more of a growth mindset towards running in physical education. Therefore, my action research question for this study was: *How does parental modeling of growth mindset language affect seventh-grade students' mentality towards running for self-improvement?*

The action research project was conducted over a period of eight weeks. Every week parents were provided with a growth mindset guide (Appendix F). Next, parent participants were completed two types of surveys. The first was a Parent PE Involvement survey (pre- and-post survey) and the second were three Parent Bi-Monthly Intervention surveys. Student participants completed a Student Reflection - December/February (Appendix C) and open-ended journal prompts (Appendix D) after their weekly run. Lastly, data were collected from my researcher field notes (Appendix E). Triangulation of the data resources was used to draw conclusions for the research study.

This chapter begins with a summary of key findings, broken down by quantitative data and qualitative methods for data collection. This summary is followed by the interpretation of findings about parent involvement with modeling growth mindset language at home, parent involvement with their child's learning in physical education, students' motivation and students' mentality towards running. The chapter concludes with the limitations of this study, a summary of the findings, and my plan for future action as a teacher leader.

Summary of Findings

This research study used a mixed-methods approach to data collection and analyses to understand how parental modeling of growth mindset language at home affected students' feelings and attitudes towards running in physical education. This project measured parental involvement, child to parent communication, and student's motivation for mentality towards running. This project used four data collection instruments to make these measurements. The quantitative instruments were a Parent PE Involvement survey (pre- post-intervention) (Appendix A) and three Parent Bi-Monthly Intervention surveys (Appendix B). The qualitative instruments were student reflections (pre- post-intervention) (Appendix C), weekly student journals (Appendix D), and daily researcher field notes (Appendix E). The intervention took place over an eight-week period. All parents in my z-period class were invited to participate, with seven ($N = 7$) parents consenting to participate. These parent participants' children were then also part of the study, totaling seven parent-student partnerships.

Parent PE Involvement survey. Analysis of the pre- /post-intervention Parent PE Involvement survey showed two results. First, that nearly all parents increased their parental involvement at home by modeling growth mindset language. Only one parent did not use or model growth mindset language at home. Second, all seven children increased communication with their parents. The data propose that parents increased their language modeling over two weeks from an average of 3.00 to 3.73 over two weeks (Figure 1). It is noteworthy that before the study, parents were using a growth mindset language an average of 2.96 times per week. After the study, parents were using a growth mindset language on average of 3.34 times per week. Parental praise for their child's physical performance in running increased more than any other metric, from 2.86 to 3.43. Additionally, parents' praise for their child's mental well-being

increased from 2.71 to 3.21. Overall, parental modeling of growth mindset language with their child at home increased over the course of the eight-week study.

Furthermore, children's communication with their parents slightly increased from 3.04 to 3.21. These data include children sharing three things: their improvement in running, their lack of improvement, and what they were learning in physical education. Most notably was that children increased their communication with their parents about their lack of improvement in running, from a mean of 2.29 to 2.43, and showed a decrease sharing about their improvement in running from 3.29 to 3.21. This finding suggests that although more students shared about not performing as well as they had previously on training runs, they were still sharing more with their parents during the study compared to prior to the study. Children's communication with their parents is important because it demonstrates a correlation with parental involvement at home. This confirms previous research (Jaekwon, 2015) that parents are aware of their child's grade in physical education and involved in their learning at school. Overall, my students shared more with their parents about how they were doing in running during physical education.

Parent Bi-Monthly Intervention survey. Analysis of the data from the three Parent Bi-Monthly Intervention surveys revealed that overall parents were using growth mindset language at home but not showing much of an increase from weeks 4 through 6. However, their children showed an increase from weeks 2 through 6 in their communication with their parents regarding running in physical education (Figure 3). During this time period, children increased sharing their feelings about running from 3 to 3.57, on average. Additionally, there was an increase in children sharing their improvement on a training run from 2.29 to 2.86. Lastly, the biggest increase was in students reporting how they did on their weekly training run, increasing from

2.71 to 3.57. This is notable since the Parent PE Involvement surveys study also showed an increase in children's communication at home.

Next, the data were analyzed for parents' use of growth mindset language. Parent responses demonstrate that four parents showed no change in growth mindset language at home from weeks 2 through 6, five parents increased their usage of growth mindset language by more than one third during weeks 2 through 6, and two parents decreased their use of growth mindset language by a seventh during weeks 3 through 6. What this suggests is that although, on average, parents increased their growth mindset language at home, individual parents were actually modeling this growth mindset language less during the first six weeks. According to the study by Haimovitz and Dweck (2017), parents who use growth mindset language at home help to develop their child's mindset which increases their belief in learning and improvement rather than belief in a fixed ability.

Within these data, there was one parent's responses that did not fit this similar pattern. The outlier (Parent D) demonstrated only an increase in their child's sharing about running, their improvement, and their performance on runs from weeks 5 and 6, from a "never" to "two or three days a week" in the Likert-type scale. From weeks 2 through 4, both parent and student showed no change, reporting "never" for all statements regarding growth mindset language and communication. These data indicate that there was another factor beyond parental involvement that had an effect on their child's expression and communication at home.

Student reflections. Analysis of the students' student reflections revealed four major themes. These include the *approach of students' motivation for running, students' experiences of preparedness for running days, students' connections with running and the feeling of*

accomplishment, and student-teacher and student-student relationships impact how a student mentally approaches running (Table 2).

These reflections reveal that students appeared to be more motivated by external factors – their peers, friends, grades, and music – than by self-motivation. Two students who reported self-motivation also completed the training runs each week under specified/goal time and did not run in a group as most students in this class did (as noted in my researcher field notes). Angela Duckworth (2016) theorized that intrinsic motivation was related to grit. She found that students who learned from their prior performance could improve their efforts and expectations for the future. Analyzing my students' extrinsic motivation and connecting it to Duckworth's research, my students may not be developing grit and growth mindset attributes.

Additionally, by the end of the eight weeks, there was a decrease in the number of students who indicated that running was challenging. This changed from five students to four students. Most responses showed that students felt accomplished when they completed a run because it was challenging. Depending on the distance, students may have found particular runs more challenging than others. Generally, students showed different levels of mental preparedness for running. Two students reported that they set goals, one student spoke with their friend, one performed self-talk, one reported feeling stressed out and felt anxious, and two did nothing to prepare.

Lastly, I adjusted my teaching strategies after listening to my students' feedback from the pre-intervention reflections, student journals, and in-class feedback. I began to reflect more about what would help my students approach running more for self-improvement and to help reduce anxiety and stress about the run. I started implementing instructional strategies to help engage my students more in preparing mentally and physically for running. The post reflections

responses show that students wanted more advance notice of which day a run would be held, they were motivated extrinsically, and there was a difference in preparedness to run. More information is needed to understand and explain why students felt the way they did. Some of the students' views and personal explanations were reflected in their student journals.

Student journals. Student journals were coded into six themes (Table 1) that helped to support this action research question. Students' attitudes towards running were further explained by their responses to journal prompts during the eight weeks (Table 3). The main two themes to emerge from the seven themes are external factors like weather and sickness and students' motivation for running.

The data show that each student's motivation and approach to running is specific and unique to that individual. Students' mental approach to running was dependent on how they felt physically that day (e.g., sick, tired, etc.). Similarly, students reported that they enjoyed completing shorter distance runs more than long-distance runs, which also effected their mental approach. Also, on a hot day, students were less motivated to run reporting that they were more tired and dehydrated.

Students' responses illustrate what motivated them consistently over the eight weeks despite any outside factors that may have impacted their approach to a specific run. Generally, students were more motivated by their friends and class grade, rather than from self-improvement. This could mean that students were using performance goals, concern with others views about their ability, rather than learning goals, learning from their performance and growing (Dweck & Leggett, 1988). The data propose that students were not self-motivated to run on run days and that their motivation was more extrinsic and varied depending on the type of run and how they were physically feeling.

Researcher field notes. The six themes that emerged from student journal responses were also coded from my researcher field notes. These include: *the approach of students' motivation for running, increase in instructional strategies for students learning, students' experience with running in contrasting weather conditions, students' experiences of preparedness for running days, the impact of physical wellness with students' attitude towards running, and students' connections with running and the feeling of accomplishment* (Table 1).

Overall, the two prevailing themes from the field notes were students' motivation and attitude towards running. A review of the 25 field note entries (including non-run days), I recorded 15 instances where students were performing peer-to-peer teaching, running with their friends, and performing independent work. These notes suggest that students work together often, and the class culture promotes multiple forms of teaching and learning. It is notable that when compared with students' reflections and journal responses, students also generally mention the importance of their friends and peers with regards to their learning and well-being in physical education.

It was notable that of the 25 field note entries, 20 entries reported that students worked hard while doing something challenging. Hard work was demonstrated as part of the current unit or weekly training run. I also found during these same instances the use of teacher growth mindset language and teacher feedback. This observation connects with the themes: *increase of instructional strategies for student learning* and *students' connections with running and the feeling of accomplishment*. It was important to my teaching that I use student feedback to help adapt my lessons during the study to foster students' growth mindset. Dweck (2006) suggests that praise feedback and messages of success are one way to develop a growth mindset. These

changes helped students to continue to be in an environment that promoted a growth mindset approach to learning and running.

Student feedback resulted in minor changes to student practices in physical education. For example, I incorporated music into our run days because of student feedback. Although the implementation of music started halfway through the study, I noted that students were prepared to run by bringing their music devices with them to class on run days. These data show that teacher growth mindset language was present on most days, most especially on days with challenging activities like running, and external factors shaped students' views of approach to running. Having these high standards and using growth mindset language can help my students learn and think for themselves, providing the tools they need to approach challenging runs independently (Dweck, 2016, p. 202).

Interpretation of Findings

Through my mixed methods data gathering strategies, the findings suggest that increased parental involvement with growth mindset language modeling at home increases the amount of communication their child shares with them regarding their learning in physical education. I was not able to conclude if parent language modeling had an effect on their child's mindset. There were multiple factors that may have changed students' mindsets towards running, including teacher instructional strategies, weather, length of run, and physical well-being. I was able to conclude that most students were motivated to run for extrinsic, rather than intrinsic, motivation. Although I was not able to support my hypothesis as a whole, the two students who reported running for self-improvement did have strong athletic ability.

Parent involvement with modeling growth mindset language at home. Parent participants strengthened their use of modeling growth mindset language at home. Data from the

pre- and post-intervention showed that their feedback for physical praise increased from 2.86 to 3.43 and feedback to help their child improve mentally increased from 2.71 to 3.21. Additionally, according to the Parent Bi-Monthly survey parents modeling growth mindset language increased from 3 to 3.23. Although this appears to be a small measured improvement from a small sample size, the impact one parent can have with their child is significant. Carol Dweck's (2006) mindset theory connects this idea with students' development. She believed that praise feedback using a growth mindset message shows the child that their parent believes in them as a developing person. This action leads to a child developing their mindset to believing their ability can change over time.

Haimovitz and Dweck's (2017) study found that parents who modeled growth mindset language saw their child develop the same mindset. The reverse was true. Parents who modeled more of a fixed mindset (e.g., that mistakes are harmful) saw that reflected in their child's mindset. The study concluded that even though a parent has a growth mindset, it does not mean that their child will have a growth mindset. Therefore, the purpose of parents modeling growth mindset language in this research study held more importance than measuring their mindset. This research study aligns with Haimovitz and Dweck, emphasizing the impact of increased involvement at home with growth mindset language.

Additionally, both Dweck's (2006) and Duckworth's (2016) research show that messages through parents' language can help develop a child's mindset towards one of growth. Dweck refers to a study in which math teachers framed mathematicians' success coming from their commitment and effort and the students learned to view math with a growth mindset (Mueller and Kamins (1998), as cited in Dweck, 2006). Also, when students that were taught that mathematicians were geniuses, students formed this fixed mindset. Duckworth's (2016) research

on grit and parenting found that parents who use a growth mindset at home help their child develop more of a growth mindset and grit.

Although this research study did not measure students' mindsets, measurement of their mentality towards running was valuable in interpreting any change in their approach to physical activity. If this study were conducted for a longer period of time, more data would help to show the impact parental language modeling had on their child's cognitive development. Duckworth (2016) points out that cognitive development is a process that takes time.

Parent involvement with their child's learning in physical education. Previous research shows that parental involvement has a positive influence on students' learning and academic achievement (Freehold et al. 2017; George & Curtner-Smith, 2018; Hill et al., 2018). In this research study, data collected from parents and students showed an increase in parental and child communication. Parent communication increased from a mean of 3.00 to 3.73 and child communication increased from 3.04 to 3.21 between the pre- and post-intervention surveys. Although both results show slight increases, it is notable that in just eight weeks, both parents and children demonstrated more involvement with each other at home. It would be more significant over a longer period of time to record the lasting effect of parental language modeling with children's communication.

George and Curtner-Smith (2018) pointed out that parents view physical education through the lens of their own experience, including their participation in sports as a child, influence from family and friends, and from the media. Since parents may view the level of their son or daughter's participation in sport and physical activity, parents could have an inequitable view of their son or daughter's performance in running in physical education. The current research study, involving parents in their child's learning in physical education was one way to

demonstrate the progressive teaching of the subject, the overall importance of mental and physical well-being, and how to support both boy- and girl-identified learners' approach to physical activity.

Frauenholtz et al. (2017) further report that supporting students has a positive effect on their mental health and academic achievement. In the student pre-/ post-reflections, students showed a decrease in stress and anxiety in preparation for running. Although this conclusion is not extensive because of the small sample size, and possibilities for other variables to influence mental well-being throughout the study, a change in just one student's mental health is important and significant. Hill and colleagues (2018) affirm this conclusion that parent involvement is important during the middle school years because it supports student success in communicating. Further research is needed to explore more of how parental involvement and child's communication has a positive influence on a child's cognitive development over time.

Students' motivation. Blackwell, Trzesniewski, and Dweck (2007) found that middle school students who believed their attributes could not be changed struggled with challenges and failures. He also found that students who believed they could be changed responded with more growth in challenges and failures. In this research study, the hope was that incorporating parent involvement using growth mindset language with their child's learning in physical education would help develop the child's growth mindset approach to running and therefore lead to running for self-improvement. However, there is little data to connect all variables. Also, the data revealed that generally students were motivated by extrinsic factors such as friends, grades, and music.

Potgieter and Steyn (2010) report that students with a growth mindset have a more constructive reaction to success and failure during sports. My researcher field notes, however,

showed that students' reactions when they did complete a run within the goal time were not constructive. One student said, "It's too hot" as they completed their run over the time limit. A student does not receive full credit for the class when they do not run in the time limit. A constructive response might have been, "I tried my hardest" or "I walked more than normal, I should push myself to walk less next time." In addition to student's motivation being shaped through parental involvement, it can also be shaped by the teacher.

Carol Ames (1992) points out that teachers should optimize a motivational climate in their classroom using structure, strategies, and curriculum. In addition, students should be treated as individuals to help view their abilities through a lens uninhibited by gender discrimination. Since this research study had a small sample size, I was able to analyze each parent's response and compare it with their child's qualitative data. For example, parent D, whose responses were distinct from the other parent participants, showed that although they did not use growth mindset language at home, towards the end of the study, their child's communication increased. It increased the same time I implemented music into running; and student D was very excited to listen to music while they ran as expressed by "cheering" when I announced they could listen to music. For this reason, student D's motivation was defined by the use of extrinsic motivation of music, which increased their communication at home with regards to running performance.

Students' mentality towards running. Appleby and Foster (2013) show found that through participation in physical activity, girls can be encouraged to build their self-efficacy, confidence, and improve anxiety. In this research study, no girl-identified learners expressed in the student journals that they felt stressed out and anxious before a run. From the post-intervention reflection, one male-identified learner showed that he stressed out and felt anxious before a run. However, in the student journals more boy- and girl-identified learners expressed

feeling anxious before the run. These reflections support my conclusion that depending on the type of run (e.g., the distance), students expressed different levels of feeling prepared mentally and preparation is specific to the week and run. Generally, students did not share an overall concern about being anxious or stressed about running in physical education.

A further explanation for why students may feel this way can be analyzed through John G. Nichols's (1984) achievement goal theory. Nichols theorized that when students are task-involved they are more intrinsically motivated to participate in challenging activities, self-reflect, and strive to reach their highest potential. Additionally, students who are ego-involved do not want to expose their weaknesses or failures. So, if a physical activity is easier with a high expectation, students will not view failure as a way to expose low ability or high ability, which leaves others to believe achievement is possible (Nicholls, 1984). Since task- and ego-involved approaches can vary from activity to activity, this may also be applied to the level of each specific run in physical education. For example, the two-lap training run is a shorter distance with a lenient time limit and viewed by students as an "easier" run because they don't have to beat their previous time and the distance is shorter than half the other types of training runs. Therefore, my students may have expressed an ego ego-involved approach to one training run and a task-involved approach to a different training run.

From the analysis of both qualitative and quantitative data, students were generally extrinsically motivated by friends and grades. Parents showed an increase in praise feedback for grades with the mean responses growing from 3.14 to 3.50 in the pre- and post-intervention surveys. Two students reported in their journals that they were motivated by grades, while three reported that they were motivated by friends. As demonstrated through Dweck and Leggett's (1988) work with implicit intelligence theory, students may be struggling to adjust to middle

school grading and viewing performance goals (e.g., positive judgment of competence) as more important than learning goals (e.g., students want to improve their competence).

It is important to note that learning is a process that takes time. According to Dweck's (2006) mindset theory, praise feedback and modeling growth mindset language are two ways to develop students' mindsets. In order for students to view their ability in running as malleable, that they can improve in their performance and change their mindset towards running, they need to make a commitment to growth. This does not happen in a short amount of time. It cannot be concluded that students permanently changed their mindset towards running or that their physical ability and mindset lead to success in self-improvement in physical education. Further research would need to be conducted in the detailed amount of growth mindset language used at home by parents to help understand the specific language used that describes praise feedback and learning from failures and challenges.

Reflection on Limitations

The short length of eight weeks for this action research project was a limitation because cognitive development and implementation of the growth mindset language take a long time to set in (Duckworth, 2016). A longitudinal study would provide more conclusive results to measure and collect data on mindset development, motivation, and the impact of learning. Students only completed eight training runs, a small number compared to the amount of running they do in one school year, and overall in their three middle school years. Another significant limitation is having a small participant pool, with seven parent-child pairs, which does not generalize for other populations or grade levels.

Additionally, the study took place after winter break when students are less active. The study took place during two physical education units that were not cardio- or fitness-based. This

was likely to have impacted students' approach to running since they were not dressing or running on the other days of class. During all other units, students dress and run a short distance every day, and students are more conditioned and in shape for running. Also, I had previously taught most of the students in this class period in the previous school year. However, three of the seven students in the study I had not taught before. This may have impacted the amount of growth mindset language instruction students were previously exposed to. Also, I returned from parental leave at the beginning of this study. I did not know the teaching pedagogy and philosophy of my substitute teacher; therefore, impacting my instructional strategies for teaching with a growth mindset during the first semester. It also may have affected my rapport with the class and individual students.

In addition, it is hard to quantify the specific amount of growth mindset language used at home by parents on a daily basis, in conversations, and how they geared language towards running in physical education. Some parents may have qualified praise feedback differently than other parents; therefore, the praise feedback might not have been truly beneficial for growth mindset development.

Furthermore, as a researcher and teacher, my role may have impacted my biases towards the seven students whose parents were participating in the study, giving them more or less attention than the rest of my class. Lastly, at the beginning, students completed their journals with minimal effort and attention. Depending on the day, students turned in one word or scribbled answers. Students' academic language did not transfer to their written work in physical education. I had to address this issue with my students during week 2 of the study. Student writing may have impacted the critical reflecting response that I was seeking from students in

their written responses. It might have depended on whether students took writing seriously in a traditionally "non-writing" class such as physical education.

Plan for Future Action

Overall, the results of this action research project show three things that guide my work as a physical education teacher. First, I confirmed more parent involvement was a positive experience for both parent and child. There was more communication from parent to child and child to parent. Second, I discovered that students' approach to running changed based on external factors such as: how they felt, the weather, and the type of run. Lastly, I learned that more students run for extrinsic motivation rather than for self-improvement.

This action research project was conducted during state school closures due to the pandemic, Covid-19. Rather than presenting my findings in person, I will share my link for my Action Research Conference Presentation with all school staff. At the beginning of the next school year, I plan on presenting my findings about the importance of parental involvement in students' learning and the tenuous nature of intrinsic motivation with fellow teachers during one of our professional development days. As a teacher leader, I would like to further my discussions with other teachers about involving parents in their child's learning. The results of this action research project demonstrated that parental involvement had a more positive effect on communication at home and teacher-parent communication increased.

It is imperative to involve parents in their child's learning to help promote gender equity and support for mental health issues (Appleby & Foster, 2013; Toporek, 2015). It is also vital to engage more teachers in a discussion about my results and experience with parent involvement and growth mindset language modeling at home. This can open the doors to more parents becoming involved with their child's learning in physical education and in other curricular areas.

I believe there is a better way to get more parents involved and to be active in their child's learning for the length of a school year. These include a short presentation at back-to-school night, starting a growth mindset workshop for parents that meets throughout the year, and a club centered for students promoting physical activity, gender equity and health awareness. I believe that involving teachers, parents, and students to engage more development around the growth mindset, students will become more empowered through the support and their engagement in learning in physical education.

I plan on continuing to teach with a growth mindset and using growth mindset language in my class. I will continue to work towards helping students change the view they may have of themselves in physical education (Dweck, 2006). I will continue to employ cooperative learning and differentiated teaching techniques to create learning environments that promote group work towards a goal (Dyson, 2012) and support skill readiness, interest, and individual learning (Colquitt, Pritchard, Johnson, & McCollum, 2017, p. 47).

I have learned about the importance of being a consistent teacher. Consistent teaching can help create a safe space for students to learn. The results found that students varied their approach to running based on external factors. However, students may have more success in approaching running with a growth mindset with consistent teaching strategies and messages of the growth mindset from me as the teacher (Dweck, 2006; Duckworth, 2017). I was absent from their learning and cognitive development for the first semester because I was on parental leave; it is my hope that in the future my continued presence will contribute to a greater development of growth mindset about running and in physical health.

I would like to convey to other physical education teachers the importance of using growth mindset language in class and praising effort over results or athletic ability. As a physical

education teacher, we are models of physical activity and healthy life choices. Although like any subject, not all teachers may fit this model; but all physical education teachers *can* lead with a growth mindset in developing their students' view of their athletic ability. Some physical education teachers may be former athletes with a fixed mindset who believe athletic ability demonstrates success by students. It is important for educators to check their own mindsets. Learning about and implementing language that treats each student as a unique individual could help with gender equity issues and the overall health and well-being of students.

Summary

Physical education teaches lifelong habits contributing to students' well-being. During my tenure as a physical education teacher, I heard students communicate their dislike towards running, the stress and anxiety around running, and the desire to run for a grade. My literature review pointed out two problems. The first was that mental health disorders start in youth and can continue into adulthood (Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015). The second problem was about the inequity that girl-identified learners experience in sports and the impact this has on their mental health and academic success (National College Athletic Association, n.d.; Toporek, 2015). Researchers Frauenholtz, Mendenhall, and Moon (2017) propose that it is a community of teachers, staff, and parents working together that impacts on a student's mental health and academic achievement.

The theories that composed the theoretical framework of this study were Dweck's implicit theory of intelligence and mindset theory (2000, 2006, 2014), and Nicholls achievement goal theory (1984). These theories provided foundational support to connect parents' modeling of growth mindset language and students' views of their involvement in running in physical education. I hoped that by encouraging more parental support in children's learning about growth

mindset, students could develop a mindset of self-belief. The belief in ability as being malleable and that we learn from their failures, might lead students to be more likely to address social barriers of gender discrimination and racism in their community (or other systemic obstacles).

The triangulation of data sources and the data analyzed led me to conclude from this study, that parent involvement with their child's learning in physical education increased through the use of modeling growth mindset language at home and that, children's communication with their parents also increased. I was not able to determine if parents' growth mindset language had an effect on their child's approach to running. There were many external factors that may have influenced students' mentality towards running and their motivation to running. Such factors were found to be friends, grades, weather, physical and mental well-being.

These results support the related literature that parent and school community are critically important in supporting students' learning. The data validated that parental involvement in their child's learning mattered. In physical education, parental involvement increased communication from both parents and child. This was a small step towards developing students' growth mindsets and boy- and girl-identified learners considering participation in sports as an equitable form of physical ability. Further research needs to be done around the effects of growth mindset learning in physical education and students' success as it relates to physical performance and participation in varied sports and physical activities.

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Appendices

Appendix A

Parent PE Involvement Survey (pre- / post-)

Parent PE Involvement Survey

Please complete the following questions by checking the corresponding box in relation to the answer that best describes your experience.
For the short answer question, please share your thoughts and opinions honestly and clearly.

1. **Email address** *

2. **First and Last Name**

3. **Language Modeling**
Mark only one oval per row.

	always	most of the time	sometimes	rarely	never
How often do you speak with your child about what they learn in PE?					
How often does your child talk about running in PE?					
I praise my child for their effort and improvement in PE.					
I praise my child for their grades in PE.					
I provide feedback for my child to improve physically in activities for PE.					
I provide feedback for my child to improve mentally for activities in PE.					

4. **Observations**
Mark only one oval per row.

	always	most of the time	sometimes	rarely	never
My child looks forward to running.					
My child does not look forward to running.					
My child talks about their improvement in running.					
My child talks about their lack of improvement in running.					
My child shares what they learn in PE with me.					

5. **Please provide any additional comments or thoughts you would like to share.**

A copy of your responses will be emailed to the address you provided

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Appendix B

Parent Bi-Monthly Intervention Survey

Parent Bi-Monthly Intervention Survey

Please answer all questions as it relates to your participation the past 2 weeks and your child in PE.
Please complete the following questions by checking the corresponding box in relation to your experience.

* Required

1. **Email address** *

2. **First and Last Name** *

3. **Modeling Language**
Mark only one oval per row.

	every day	two or three days a week	once a week	once every two weeks	never
How often are you using the Growth Mindset Guide to model the language in your home?					
How often are you modeling growth mindset language specific to running?					
How often does your child share how they feel about running?					
How often does your child express improvement in running?					
How often does your child share how they did in their weekly training run?					

4. **Please provide any additional comments or thoughts you would like to share.**

Send me a copy of my responses.

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Appendix C

Student Reflection (pre- / post-intervention)

Pre/Post Student Reflection

Complete the following questions with honesty. The more honest you are, the more helpful it will be for teaching and lesson planning. Thank you, Mrs. Navarro

Your email address (**snavarro@moraga.k12.ca.us**) will be recorded when you submit this form. Not **snavarro**? Sign out

1. **Last Name, First Name**

2. **Is running challenging for you?**
   Mark only one oval.
   - ◯ Yes
   - ◯ No
   - ◯ Other: _____

3. **If running is challenging for you, do you feel better after your run that you accomplished something hard?**
   Mark only one oval.
   - ◯ Yes
   - ◯ No
   - ◯ Running is not challenging for me
   - ◯ Other: _____

4. **What motivates you to run?**
   Mark only one oval.
   - ◯ Grade
   - ◯ Friends
   - ◯ Self
   - ◯ Teacher
   - ◯ Parent
   - ◯ Other: _____

5. **How do you prepare yourself mentally to run?**
   Mark only one oval.
   - ◯ I set a goal and try to beat it
   - ◯ I talk with my friends about how I want to do well on the run
   - ◯ I don't, I stress out and feel anxious
   - ◯ I don't, I don't like running and don't want to run
   - ◯ Other: _____

6. **Do you worry about running the days leading up to the run?**
   Mark only one oval.
   - ◯ Yes
   - ◯ No

7. **What would help make your preparation for running better?**

8. **Anything else you would like to share about running and how you feel?**

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Appendix D

Journal Prompts

Week of January 6th & February 10th
Run day _____

Name: _____

Describe how you felt mentally before the run? (motivated, anxious, stressed etc.)

Describe how you feel mentally after the run? (relieved, happy, excited, anxious, stressed etc.)

Week of January 13th & Week of February 24th
Run day _____

Name: _____

Did you have a running goal? (Circle one) Yes/No

If yes, what was your running goal and did you meet it?

If not, why did you choose not to set a goal and what goal would you set for next time?

Week of January 20th & Week of February 17th
Run day _____

Name: _____

Did you feel prepared to run today? Why or why not? Explain in at least 2 sentences.
What motivated you to run? (a friend, teacher, self, parent, grade, improvement, etc.

Appendix D (continued)

Journal Prompts

Week of January 27th
Run day _____

Name: _____

If you identify as a girl, how do you feel about running with boys? Are you intimidated, talked to negatively/positively, is it motivating?

If you identify as a boy, how do you feel about running with girls? Are you intimidated, talked to negatively/positively, is it motivating?

Week of February 3rd
Run day _____

Name: _____

Answer the following if you ran the whole time:

What do you think helped you continue to run?

Answer the following if you stopped at some point:

What do you think made you stop to walk during your run

Appendix E

Researcher Field Notes

Seven themes that emerged from data:

1. Approach of students' motivation for running.
2. Increase in instructional strategies for students learning.
3. Students' experience with running in contrasting weather conditions.
4. Students' experiences of preparedness for running days.
5. Impact of physical wellness with students' attitude towards running.
6. Students' connections with running and the feeling of accomplishment.
7. Student-teacher and student-student relationships impact how a student mentally approaches running.

Appendix F

Growth Mindset Language for Parents

Week 1: Praising Effort

"Every word and action can send a message. It tells children how to think about themselves. It can be a fixed-mindset message that says: *You have permanent traits and I'm judging them*. **Or it can be a growth-mindset message that says: *You are a developing person and I am interested in your development*"**(Dweck, 2006, p. 173).

Directions: (1) Refer to column 1 for your child's situation.
(2) Provide appropriate growth mindset language using columns 2 and 3 for guidance in how to frame your language.

Running Situation for Child	Growth Mindset Language, Option 1	Growth Mindset Language, Option 2
Improved: Popped their time	You're a learner! I love that.	You really worked hard all week to improve. You performed all the exercises to build strength, you applied it, and you invested in your improvement. Your effort worked!
Same performance, did not show improvement or failure	That run was long/intense or short/intense. I really admire the way you are focused on trying your best and finished the run.	Great job! What's one thing you could have done better during the week to help your running?
Did not improve: ran slower or the same, not seeing time increase	Running is hard. Don't feel bad if you can't do it yet.	You put a lot of effort into this run. Tell me how we can work together to figure out ways for you to improve and what it is you don't like about running?

Dweck, C. S. (2006). *Mindset: The new psychology of success.* New York, NY: Random House.

Appendix F (continued)

Growth Mindset Language for Parents

Week 2: Praising Effort

"We can praise [children] as much as we want for the growth-oriented process- what they accomplished through practice, study, persistence, and good strategies. And we can ask them about their work in a way that admires and appreciates their efforts and choices" (Dweck, 2006, p. 177).

Directions: (1) Refer to column 1 for your child's situation.
(2) Provide appropriate growth mindset language using columns 2 and 3 for guidance in how to frame your language.

Running Situation for Child	Growth Mindset Language, Option 1	Growth Mindset Language, Option 2
Improved: Popped their time	The effort and hard work you put into that run gives me a real feeling of joy. How do you feel when you get your personal best time?	I like how you tried learning pacing/motivating/running strategies until you finally beat your time! You tried different ways to improve and found the one that works!
Same performance, did not show improvement or failure	I know PE and running used to be easy for you and you used to feel like the stronger/faster kid all the time. But the truth is you weren't always applying yourself to your fullest. I'm really excited about how you are stretching yourself now and working at something hard and challenging.	I have high standards for you to be challenged and improve over time. I'm holding you to them because I know we can reach them together.
Did not improve: ran slower or the same, not seeing time increase	We all have different learning curves and physical ability. It may take more time for you to show improvement and be comfortable with these runs, but if you keep at it like this you will.	Everyone learns in a different way and has different physical abilities. Let's keep trying to find a way that works for you.

Appendix F (continued)

Growth Mindset Language for Parents

Week 3: Ideals for Children

"Isn't it natural for parents to set goals and have ideals for their children? Yes, but some ideals are helpful and others are not (Dweck, 2006, p. 191)."

"When parents help their children construct growth-minded ideals, they are giving them something they can strive for. They are also giving their children growing room, room to grow into full human beings who will make their contribution to society in a way that excites them (Dweck, 2006, p. 193)."

Directions: (1) Refer to column 1 for your child's situation.
(2) Provide appropriate growth mindset language using columns 2 and 3 for guidance in how to frame your language.

Ideals for learning	Growth Mindset Language, Option 1	Growth Mindset Language, Option 2
Moving beyond grades	"It takes effort to improve. Your grades will reflect your growth over time. Your personal challenge to improve will be reflective at the end of the semester."	"Learning takes time and I don't expect you to get a perfect score on every run. I would love to see you applying what you're learning in class to improve your running ability."
Moving beyond athletic ability	"Naturally ability alone does not help you succeed at running. Incorporating exercises/running strategies from class and learning from bad runs will help you to improve."	"Since you were young you always worked hard at sports and built up your athletic ability to your strength today. You are going to be amazed at how much you can continue to improve with your continued hard work and effort."

Appendix F (continued)

Growth Mindset Language for Parents

Week 4: Ideals for Children

"When parents give their children a fixed-mindset ideal, they are asking them to fit the mold of the brilliant, talented child, or be deemed unworthy. There is no room for error. And there is no room for children's individuality - their interests, their quirks, their desire and values" (Dweck, 2006, p. 192).

Directions: (1) Refer to column 1 for your child's situation.
(2) Provide appropriate growth mindset language using columns 2 and 3 for guidance in how to frame your language.

Ideals for learning	Growth Mindset Language, Option 1	Growth Mindset Language, Option 2
Boy identified child: Moving beyond gender	"Your effort comes from you dedicating yourself to wanting to do better and learn from past runs. Focus on your individual performance and improving."	"Your friends may ask you to run with them. Let them know you want to help challenge them and they can try to stay with your pace but you want to achieve the goal you set for the run and may run ahead of them."
Girl identified child: Moving beyond gender	"You can be a leader in class with your effort and focus in how you've been improving in running. You are a strong female for rising up to challenges and learning from them."	"Your friends may ask you to run with them. Let them know you want to help challenge them and they can try to stay with your pace but you want to achieve the goal you set for the run and may run ahead of them."

Appendix F (continued)

Growth Mindset Language for Parents

Week 5: Constructive Criticism - Failure messages

"*Constructive* means helping the child to fix something, build a better product, or do a better job (Dweck, 2006, p. 182)."

Directions: You can use the following sentences word-for-word or adjust to fit your communication with your child. Structure your feedback language focusing on your child's effort, progress, and/or ways in their control to improve. See if you can make it a conversation.

Growth Mindset Language Modeling Examples:

1. [Son/daughter/name], feel sad when you miss your chance to learn from your run. "Can you think of a way to respond to your failed run that would help you learn from it?"

2. "[Son/daughter/name], remember how we talked about running as something you can improve on over time? This run was a real challenge. This will really take all you focus and effort to improve on. Let's see if we can list a few ideas that can help you on your next run."

3. "[Son/daughter/name], you responded to your run as a success by saying you got full-credit. Is there a way you could respond that shows your effort and the process of improving rather than focusing just on your grade?"

Appendix F (continued)

Growth Mindset Language for Parents

Week 6: Constructive Criticism - Failure messages

"Sometimes children will judge and label themselves (Dweck, 2006, p. 183)."

Directions: You can use the following examples of situations to help develop your growth mindset language in context of a conversation. Structure your feedback language focusing on your child's effort, progress, and/or ways in their control to improve.

Failure - Growth Mindset Language to Model

Growth Mindset Feedback - Child runs slower than the time provided	Growth Mindset Feedback - Child does not beat their previous running time
Child: I'm slow. Parent: That's not what we say when we don't succeed. Child: What do you say? Parent: You say, I didn't beat the time this run - I will try again next time! Child: Really? Parent: Yes, every run is a new challenge and difficulty to try to improve.	Child: I beat the time but was 30 seconds off my best time. I suck. Parent: That's not how we speak about ourselves. Child: How do we speak? Parent: I succeed at my teachers goal but came up short from my personal goal. I'm putting in the effort and today's run is something to learn from. I can continue to work hard to see improvement next time. Child: Will that work? Parent: Getting better takes time. You're doing great.

Success - Growth Mindset Language to Model

Growth Mindset Feedback - Child runs under the time provided	Growth Mindset Feedback - Child runs their best time
Child: I did it! I got an A today and full credit on my run! Parent: What did running under the time make you feel? It sounds like you gave some great effort today. Child: I did.	Child: I finally got full credit running the mile! I beat my last time and popped! Parent: That's wonderful! Your effort is helping you improve. Child: I didn't run as fast at the beginning and picked up my speed.

Appendix F (continued)

Growth Mindset Language for Parents

Parent: What can we do to keep this feeling of success for your next run, and to not focus on the outcome of the grade? Child: I can look back at what I did today and try to replicate my pace next time. Parent: That sounds like a great plan!	Parent: Wow, great job implementing what you're learning in class with you training runs! Child: Thank you!

Appendix F (continued)

Growth Mindset Language for Parents

Week 7: The Power of Yet

"Just the word yet gives kids greater confidence. Give them a path into the future that creates greater persistence and we can actually change [childrens] mindsets. In one study we taught them that every time they push out of their comfort zone to learn something new and difficult, the neurons in their brain can form new stronger connections and over time they can get smarter (The Power of Yet, Carol Dweck Ted Talk)."

Directions: Continue with your growth mindset language modeling by adding "yet" to the end of a sentence that is negative and static. Below are examples of how to develop a more positive and changing mindset with language.

Child: Fixed mindset language	**Parent: Growth mindset language that bridges the gap to yet** **Rephrase for child to:**
I'm not good at running.	I'm not good at running yet.
I can't run.	I don't run outside of PE so I'm not going to be a good runner yet. It will take time.
I can never be as fast as the boys.	I'm not as fast as I want to be yet. The faster boys can help me with my pacing and increase my speed.
I'm not athletic.	I am a unique individual with the ability to always improve. I'm not where I want to be yet but I will get there.

Appendix F (continued)

Growth Mindset Language for Parents

Week 8: The Power of Yet - Transforming effort and difficulty

Helping to teach children that they are not just learning and running in Physical Education for their grades but for their future success. The power of yet demonstrates that getting better is a process (improving running time), not an end outcome (grade).

Directions: Continue with your growth mindset language modeling by adding "yet" to the end of a sentence that is negative and static. Below are examples of how to develop a more positive and changing mindset with language.

Child: Fixed mindset language	**Parent: Growth mindset language that bridges the gap to yet** **Rephrase for child to:**
I'm not strong enough to be a runner.	I am not strong enough yet. I'll be growing more each year and get to see my improvement over time.
I don't have a runner's body.	I am an individual with my own strengths. No one's body is the same. I may not have the body I want yet but I'll keep being healthy and work on my running techniques.
I don't want to run, I get made fun of for my running technique/style.	What works for me may not work for someone else. My running style is unique to me and shows my strength. I may not be the runner I want to be yet but I will get there.
I'm never going to be great at anything athletic.	I am not where I want to be yet but will keep working hard to achieve my goals.

Appendix G

Parent Consent to Participate

Completing this form means that you acknowledge that you have read and understood the information in the letter and that you give permission for your participation and data to be included in the project.

1. **Email address** *

2. **I will be participating in Mrs. Navarro's action research project.**
Mark only one oval.
Yes

3. **First and Last Name**

4. **Child's First and Last Name**

Send me a copy of my responses.

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Appendix H

Parent Google Classroom