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A Comparison Study of Beliefs and Perceptions of Growth Mindsets Between P-12 Teachers and Parents

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A COMPARISON STUDY OF BELIEFS AND PERCEPTIONS OF

GROWTH MINDSETS BETWEEN P-12 TEACHERS AND PARENTS

by Jadedra Lauren Gilmore

This dissertation has been read and approved as fulfilling the partial requirement for the Degree of Doctor of Education in Curriculum and Leadership.

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DEDICATION

I would like to dedicate this dissertation to my father and mother, Raymond and Barbara Gilmore. Thank you so much for your love, guidance, and continuous words of encouragement. As I write this dedication, the song "Wind Beneath My Wings" comes to mind because that is what you are. Words cannot explain the amount of support you both have provided. The sacrifices you made for both me and my brother are greatly appreciated and encourages me to continue to "Keep my eyes on the prize." I could not have asked for better parents than the two God blessed me with. I love you both and pray this accomplishment lends credence to the positive impact love, support, and sacrifices from parents, such as yourselves, can have on their child. I would also like to dedicate this page to my brother, Victor. Your educational journey is the basis for my topic interest, and I appreciate you always teaching me the importance of being confident in who I am and my own dreams. Humbly, I would like to say, "We did it!"

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ABSTRACT

Efforts in educational settings are increasing towards building cultures of growth mindsets that promote positive outcomes for all stakeholders. Nevertheless, a continuous cycle of false growth mindsets continues to spread among educational entities and parenting practices worldwide. Dweck suggests that many educators, students, and parents have been misguided regarding the mindset theory due to the spread of false growth mindsets. The purpose of this explanatory, sequential mixed methods research study was to compare beliefs and perceptions of growth mindset between P-12 teachers and parents. The theoretical framework of this study was the mindset theory, previously termed as the implicit theories of intelligence. In the quantitative phase, all P-12 teachers and parents from a rural, South Georgia school district were invited to complete a survey. Survey data were collected from the 54 teachers and 32 parents and were analyzed using descriptive statistics. The findings from the quantitative phase were used to select a purposive sample of participants and to develop focus group questions in the qualitative phase. The focus group participants included three teachers from the elementary levels and three parents with students who were enrolled in the elementary and high school levels. After transcribing the data, themes and subthemes were identified using pattern coding. One of the key findings of this study included the high usage of practices that did not foster growth mindsets by teachers and parents. The findings from this study could provide a basis for teacher professional development and parent workshops that are focused on proper growth mindset practices for students at school and at home.

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CHAPTER I

INTRODUCTION

Background of the Study

The mindset theory (Dweck, 2006) has played a profound role in a variety of settings around the world. Dweck's mindset theory suggests that individuals with growth mindsets embody the belief that their skills can be developed through good strategies, hard work, and instruction from others (Dweck & Haimovitz, 2017). Individuals with fixed mindsets believe not much can be done to change the certain amount of ability they have. A notable amount of scientific evidence has indicated that the distinction between individuals who succeed and individuals who fail to succeed is not the brains they had when they were born. Alternately, individuals' approaches to life, the messages they receive about their potential, and the opportunities they have to learn determine their success (Boaler & Dweck, 2016).

Studies related to the mindset theory have been conducted in ministries, P-12 school districts, post-secondary institutions, community colleges, homeschool learning environments, coaching, and several organizations worldwide. Most of the findings indicated that, when embodied and used properly, growth mindset theory-based strategies can increase achievement significantly (Dweck, Paunesku, Walton, & Yeager, 2013). Nevertheless, the improper use of growth mindset strategies, termed as *false growth mindsets*, continue to spread amongst educational entities, organizations, and parenting styles around the world (Stanford MCHRI, 2018).

The effects of the spread of false growth mindsets mislead many educators, students, and parents regarding the mindset theory. The possible negative consequences associated with the spread of false growth mindset are barrier development and fixed mindset triggers, causing the success individuals could have academically and career based to be impeded. Carol Dweck discussed the use of false growth mindsets in a presentation at Stanford University. She believed the origin of false growth mindsets, although unintentional, began with a lack of understanding by individuals utilizing growth mindset strategies for the purpose of encouraging individuals to face challenges with a growth mindset (Stanford MCHRI, 2018). Dweck suggests that schools and entire school systems have transformed and revolutionized student achievement due to educators' proper implementation of growth mindsets in their classrooms and schools (Stanford MCHRI, 2018). When interventions focused on teaching a growth mindset were directly taught over time, students' achievement tended to improve (Blackwell, Trzesniewski, & Dweck, 2007). Current brain research evidence has revealed that, with the right teaching and messages, every student can be successful academically and achieve at the highest levels in school (Boaler & Dweck, 2016). Nevertheless, some educators use false growth mindsets strategies as a result of their unfamiliarity with mindsets. Additionally, because a growth mindset is considered good, many educators feel that they have one.

Some educators feel that growth mindset is only about praising students when they try hard, which can actually convey a fixed mindset (Stanford MCHRI, 2018). According to Dweck, an example of conveying a fixed mindset is when students are praised for trying really hard, they may begin to wonder why other students are not

having to try as hard to understand concepts. When growth mindset is conveyed as only praising students when they try hard, a fixed mindset can be triggered (Stanford MCHRI, 2018). In addition to praise when working hard, Dweck suggests that some educators post mindset anchor charts in rooms and criticize students who do not show all growth mindset attributes. Observations have been made in classrooms where students have been sorted in fixed and growth mindset groups (Stanford MCHRI, 2018). During parent-teacher conferences, teachers have told parents that their children cannot be taught because they have a fixed mindset. Furthermore, many earnest educators teach growth mindset in the classroom but do not embody growth mindset in their practice (Stanford MCHRI, 2018). Several studies suggest that, when teachers have taught growth mindset but did not embody the mindset in their practice, students did not grasp the concept being taught (Dweck & Haimovitz, 2017). In addition to growth mindset in schools, organizations have been studied by Dweck and her colleagues. They have found some organizations had employees who felt that their supervisors thought everyone was capable of growth as opposed to supervisors who only looked for the "superstars*"* and did not care about the remaining employees (Stanford MCHRI, 2018).

This study attempted to address the gap in literature focused on the exposure levels and usage associated with growth mindset theory and practices by teachers and parents. The rationale of this study was to locate barriers associated with individuals developing a growth mindset in educational settings that consists of a variety of domains that students face daily in school, at home, and in the workplace.

Statement of Problem

False growth mindsets have been a problem in education and continue to be spread amongst educational entities and organizations worldwide (Stanford MCHRI, 2018). A plethora of research pertaining to fixed and growth mindsets exists in educational entities and organizations around the world (Dweck, 1999). In addition to research, many efforts, such as creating a growth-mindset curriculum, are in the process of being created by Dweck's colleagues. The efforts were initiated for the purposes of helping teachers develop growth mindset cultures in their classrooms and schools because they are unable to create the cultures by themselves (Stanford MCHRI, 2018). A gap in literature exists with studies that focus on the level of experience and beliefs teachers have related to fixed and growth mindsets compared to parents. The significance of the study was to contribute to students, educational leaders, educators, parents, and educational literature regarding the equal opportunity for all students to be educated based on their mindsets merged with the proper use of strategies, ideologies, theories, and practices to support student diversity in the continuous changing world of education. This study will provide a basis for educational leaders to plan growth mindset professional development sessions and parent workshops.

Purpose of the Study

This explanatory, sequential mixed methods research study compared beliefs and perceptions of growth mindset between P-12 teachers and parents in a rural, South Georgia Title 1 school district. A descriptive research design was used to summarize the beliefs about growth mindset between P-12 teachers and parents. This study utilized the research of Dweck (2006) and the Education Week Research Center (2016) to examine the following variables: 1) Factors Affecting Student Achievement, 2) Teacher/Parent

Perceptions of Students, 3) Important of Student Beliefs, 4) Familiarity with Growth Mindset, 5) Fostering a Growth Mindset, and 6) Outcomes Linked to Growth Mindset. The multiple-case study explored and compared P-12 teacher and parent perceptions of growth mindset using a sample of the quantitative participants. In this study, both qualitative and quantitative data were collected and integrated with the use of mindset theory theoretical framework (Creswell & Creswell, 2018). Additionally, the integration of the two methods added insight beyond the qualitative and quantitative information provided by data collected in isolation.

Research Questions

The research questions guiding this study are as follows:

1. (Quantitative) What are the beliefs of teachers related to growth mindsets?
2. (Quantitative) What are the beliefs of parents related to growth mindsets?
3. (Qualitative) How do teacher perceptions of their knowledge of growth mindsets compare to parent perceptions of their knowledge of growth mindsets?

Theoretical Framework

The theoretical framework used to frame this study was mindset theory (Dweck, 2006). Dweck's mindset theory suggests that individuals with growth mindsets embody the belief that their knowledge and skills can be developed through good strategies, hard work, and instruction from others (Dweck & Haimovitz, 2017). Individuals with fixed mindsets believe that they cannot do much to change the certain amount of ability they have. The mindset theory relates to the problem of this study and research questions due

to the attention growth mindset has increasingly obtained over the past 10 years regarding student development and leadership (Duckworth, 2016).

The implicit theories of intelligence are the foundation of what is now referred to as the mindset theory (Mercer et al., 2012). Like the mindset theory, the implicit theories of intelligence are associated with the belief concerning the nature of ability (Dweck & Leggett, 1988). The incremental theory of intelligence (i.e., growth mindset) is associated with individuals who have the belief that intelligence is malleable, controllable, and able to be increased (Dweck & Leggett, 1988). Alternately, an entity theory of intelligence (i.e., fixed mindset) is associated with individuals who have the belief that intelligence is a fixed trait and uncontrollable. Dweck (2006) began to use the mindset theory terms, growth and fixed mindsets, to correspond equivocally with the previous terms, incremental and entity theories of intelligence (Mercer et al., 2012).

Methodology Overview

The researcher utilized an explanatory, sequential mixed methods research design. Morse and Niehaus (2009) stated that a mixed methods research design, when conducted with purposeful care, can be a stronger design versus a single research method design because validity and understanding is enhanced, enriched, and expanded by verifying results from another perspective with the supplemental component.

The study took place in a rural, South Georgia Title 1 school district where each student received 100% free lunch. Surveys and focus groups were used for data collection. Sequential reasoning was utilized to further explain findings from the quantitative survey data with qualitative data collected during the focus groups. From grade levels (i.e., P-12), all teachers and parents in the school district were invited to

participate in the survey. Purposive sampling was used to select teachers and parents from the elementary, middle, and high schools to participate in four focus group sessions based on their descriptive survey scores. The SPSS statistical program was utilized to conduct descriptive statistics in the quantitative phase. Pattern coding was used to identify themes and subthemes after transcribing the data that were collected from the focus groups in the qualitative phase. The data from the quantitative and qualitative phases were integrated by using the same participant pool for both phases and merging the data into tables.

Delimitations and Limitations

The set of choices that a researcher makes regarding a study is termed as delimitations (Simon & Goes, 2011). The delimitation of this study was the location of the study, which took place in the researcher's Title 1 school district. Previous growth mindset studies' results indicated that achievement levels increased substantially with growth mindset strategies for students from high poverty backgrounds (Claro, Paunesku, & Dweck, 2016).

A study's limitations are methodology or design characteristics that could influence or impact the interpretation of the research findings (Price & Murnan, 2004). Potential limitations include a lack of generalizability regarding teachers' and parents' beliefs and perceptions of mindsets in locations other than the South Georgia Title 1 school district. Additionally, teacher and parent attrition between phases is a possible limitation. With a small sample size of teachers and parents, the study may not be generalized to the population. To address this issue, all teachers and parents in the district were asked to participate in the study using a series of three recruitment emails.

Additionally, incentives were provided to survey participants with the use of two $50 gift card drawings. One gift card was for a randomly selected teacher survey participant, and one gift card was for a randomly selected parent survey participant. Two $50 gift card drawings were also used as incentives for focus group participants. One gift card was for a randomly selected teacher focus group participant, and one gift card was for a randomly selected parent focus group participant.

Definition of Terms

To provide clarity and understanding pertaining to the terms used in this study, the following terms have been defined briefly:

Achievement Gap - the disparities in standardized test scores between a wide range of cultures (Ladson-Billings, 2006).

Educational Leaders - highly successful individuals who are recruited to lead with a focus on the aims of education, on a theory of motivation, and on what constitutes ethical practices (Noddings, 2007).

Entity Theory - the belief that an individual can learn new things, but his or her level of intelligence stays pretty much the same (Bandura & Dweck, 1985).

False Growth Mindsets - a lack of understanding by individuals utilizing growth mindset strategies for the purpose of encouraging individuals to face challenges with a growth mindset (Stanford MCHRI, 2018).

Fixed Mindsets - Individuals with fixed mindsets believe that they cannot do much to change the certain amount of ability they have (Dweck & Haimovitz, 2017).

Growth Mindsets - Individuals with growth mindsets embody the belief that their skills can be developed through good strategies, hard work, and instruction from others (Dweck & Haimovitz, 2017).

Incremental Theory - the belief that intelligence can increase and is malleable (Bandura & Dweck, 1985).

Public Education - a school maintained at public expense to educate and meet the needs of all students who are enrolled in a community or district (National Coalition for Public Education, 2018).

Purposive Sampling - a purposeful choice of a participant due to qualities that the participant possesses (Etikan, Musa, & Alkassim, 2016).

Self-systems - two forms of self-concept with two different sources of self-esteem (Dweck & Leggett, 1988).

Significance of the Study

The basis for this study was the substantial body of empirical research that has shown that students' socioeconomic background and beliefs about their abilities influenced student achievement (Claro et al., 2016). Furthermore, research has shown that, when compared to their peers from other socioeconomic backgrounds, students from lower-income families are less likely to hold a growth mindset; however, students who have a growth mindset could be buffered against the deleterious effects that poverty has on student achievement. The data for this study were collected from a sample of P-12 teachers and parents from a rural, South Georgia school district where P-12 students received 100% free lunch due to the high poverty level of the community. Parents (who are often referred to as students' first teachers) and teachers may be haphazardly teaching

false growth mindsets due to a variety of barriers, such as lack of proper training, lack of familiarity, and/or perceptions, which may impede student achievement.

The findings of this study could contribute to students, educational leaders, educators, parents, and educational literature regarding the equal opportunity for all students to be educated based on their mindsets merged with the proper use of strategies, ideologies, theories, and practices to support student diversity in the continuously changing world of education. After determining the familiarity teachers and parents have regarding growth mindset practices, educational leaders could determine how false growth mindsets have been created and work towards building a growth mindset culture where growth mindset practices are implemented effectively. By acquiring an understanding of teacher and parent perspectives pertaining to the mindset theory, educational leaders could develop effective plans, such as professional development opportunities for teachers and workshops for parents, to assist with efforts tailored to increase student achievement.

Summary

The spread of false growth amongst educational entities and organizations worldwide is a continuous problem. The purpose of this explanatory, sequential mixed methods research study was to compare beliefs and perceptions of growth mindset between P-12 teachers and parents. The findings of this study could make contributions to students, educational leaders, educators, parents, and educational literature regarding the equal opportunity for all students to be educated based on their mindsets merged with the proper use of strategies, ideologies, theories, and practices to support student diversity in the continuously changing world of education.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Researchers and practitioners could use research related to mindsets to affect large-scale changes in education if significant investments were made in the areas of principles, practices, and assessments (Dweck et al., 2013). A notable amount of scientific evidence suggests that the distinction between individuals who succeed in tasks, challenges, and goals and individuals who do not succeed is not the brains that they were born with. Alternately, their approach to life, the messages they receive about their potential, and the opportunities that they have to learn determines success (Boaler & Dweck, 2016). Each comment an educator makes should grant a message of possibility and positively influence perception of his or her students' capabilities while fostering tenacity and optimism (Chapman & Gregory, 2012). Students' efforts and successes should receive feedback and response. By receiving this feedback and response during learning experiences, all students could acquire the message that they can continue to get better (Chapman & Gregory, 2012).

Problems manifest themselves in educational institutions when all students are served the same way. Gardner (1997) suggests that an education that treats all students the same way is an absolutely unfair education. Educators should place a large emphasis on ensuring students are given an equal opportunity to learn subject matter using daily experiences that keep students eager to learn and committed to growth (Dweck &

Haimovitz, 2017). For educational outcomes to become more equitable, a focus should be put on reducing achievement gaps, making school more enjoyable by placing emphasis on improving and learning versus demonstrating raw intelligence, and creating a more efficient school by affording students with the opportunity to take better advantage of learning resources that are available to them (Dweck et al., 2013).

Instruction has been centered on teaching a lesson to a class of students; although teachers were cognizant of that fact, they were boring some students and losing others due to students being over or underequipped for the learning experience. Nevertheless, students are expected to adjust to the learning when the learning should be adjusted to the students (Chapman & Gregory, 2012).

Research-based practices are vital for immediate changes to occur and be sustained. Practices that are based on the knowledge of research, such as the mindset theory (Dweck, 2006), have been shared across a variety of public elementary educational institutions. Teaching students with fixed and growth mindsets strategies that are related to the process of learning continues to evolve (Dweck, 2006).

Theoretical Framework

The mindset theory, which was the theoretical framework of this study, is foundationally based in the implicit theories of intelligence (Mercer et al., 2012). The implicit theories of intelligence are associated with beliefs related to the nature of ability (Dweck & Leggett, 1988). Individuals with more of an incremental theory of intelligence (i.e., growth mindset) have the belief that intelligence is malleable, controllable, and able to be increased (Dweck & Leggett, 1988). Alternately, individuals with more of an entity theory of intelligence (i.e., fixed mindset) have the belief that intelligence is a fixed trait

and uncontrollable. Dweck (2006) began to use the mindset terms, growth and fixed, to correspond equivocally with the previous terms, incremental and entity theories of intelligence (Mercer et al., 2012).

Prior to the development of the current terms, fixed and growth mindset, Diener and Dweck (1978) associated the nature of ability with the major patterns of adaptive and maladaptive behaviors, known as mastery-oriented and helpless-oriented patterns. Individuals with more of a mastery-oriented pattern (i.e., growth mindset) seek tasks that are challenging and maintain the ability to strive for improvement when faced with failure. Individuals with helpless-oriented patterns (i.e., fixed mindsets) avoid challenges and their performance in the face of challenges deteriorates (Diener & Dweck, 1978).

Dweck (2000) suggests that individuals' beliefs about themselves (i.e., self-theories) can develop different psychological worlds. The creation of the psychological worlds due to individuals' self-theories can lead individuals to feel, think, and act differently in identical situations. A series of studies was conducted by Diener and Dweck (1978) to focus on cognitive, behavioral, and affective components in individuals with mastery-oriented patterns and helpless-oriented patterns. One study consisted of late grade-school aged students as participants. Each participant was identified by an attributional measure as more likely to display more mastery-oriented patterns (i.e., growth mindset traits) or helpless-oriented patterns (i.e., fixed mindset traits; Diener & Dweck, 1978). The students worked towards completion of a concept formation task by successfully solving the first eight problems, but they failed to solve the remaining four problems identified as difficult to solve due to the participants' age and trial number allotment. The researchers were interested in the changes in behavior, cognition, and

affect as the participants transitioned from success to failure (Diener & Dweck, 1978). For the purpose of capturing the nature and timing of the changes, the participants were asked to verbalize aloud their thoughts and feelings as they worked on the rigorous problems. The helpless-oriented participants rapidly began to verbalize negative self-cognitions and pronounced negative affect (Diener & Dweck, 1978). In addition, more than two-thirds of the helpless-oriented participants verbalized task-irrelevant comments that were largely self-aggrandizing or diversionary in nature. Furthermore, more than two-thirds of the helpless-oriented participants displayed a transparent decline in their level of problem-solving strategy usage when faced with failure (Diener & Dweck, 1978). Moreover, more than 60% of the helpless-oriented participants utilized ineffective strategies characterized as strategies that would never yield a solution even if participants were provided sufficient trials on the problems assigned (Diener & Dweck, 1978). In contrast to the helpless-oriented participants, the mastery-oriented participants viewed the problems unsolved as challenges that could be mastered through effort. Specifically, the mastery-oriented participants verbalized extensive self-monitoring, self-instruction, and solution-oriented processes (Diener & Dweck, 1978). The mastery-oriented participants remained optimistic and instructed themselves to apply more effort and concentration to the difficult problems. Eighty percent of the mastery-oriented participants maintained their problem-solving strategies successfully at or above pre-failure levels (Diener & Dweck, 1978). Twenty-five percent of the mastery-oriented students increased their strategy levels over the four failure trials by actually teaching themselves more sophisticated hypothesis-testing strategies. Although mastery-oriented patterns and

helpless-oriented patterns were identified first in children, the patterns continue into adulthood (Diener & Dweck, 1978).

Bandura and Dweck (1985) conducted a study with late grade-school-aged students and found that participants with an incremental theory of intelligence were significantly more likely to adopt learning goals during an experimental task than participants with an entity theory of intelligence. Similarly, Dweck and Bempechat (1983) indicated that incremental theorists, when compared to entity theorists, were significantly more likely to report a preference for classroom tasks that embodied challenging learning goals, which were difficult and new, versus performance goals, which were simple to complete and ensured an individual would not have to worry about making mistakes.

Leggett (1985) conducted a study by revising the theories of intelligence assessment. Leggett examined the relationship between goal selection in junior high school students and the theories of intelligence and found that children's theories of intelligence were reliable predictors pertaining to their goal selection. Dweck, Tenney, and Dinces (1982) conducted a study that manipulated children's theories of intelligence experimentally and assessed their goal choice on a preceding task. In the study, the participants were categorized toward an entity or incremental theory by reading passages that portrayed the intelligence of notable individuals (e.g., Albert Einstein, Helen Keller, and the child Rubik's Cube champion) as either an inborn trait or an acquirable quality. The content, tone, structure, and interest value of both passages were similar, except they illustrated and presented different definitions of smartness. The researchers carefully avoided attaching any goals to the theories for the purpose of avoiding any mention or

implication of learning versus performance goals. The results indicated that the experimental manipulation of theory affected participants' goal choices. Participants who read the incremental passage were significantly more likely to select learning goals for the upcoming task than the participants who read the entity passage. These findings indicated that an incremental theory of intelligence was more consistently associated with adaptive motivational patterns. Additionally, Alfred Binet, the inventor of the IQ test, was noted as an incremental theorist. His beliefs aligned with basic capacity for learning and were enhanced through his training procedures. Binet stated the following:

> It is in this practical sense, the only one accessible to us, that we say that the intelligence of these children has been increased. We have increased what constitutes the intelligence of a pupil: the capacity to learn and to assimilate instruction. (Binet 1909/1973, p. 104)

Alfred Binet and Theodore Simon developed the first widely utilized intelligence test, the Binet-Simon Intelligence Scale (i.e., IQ Test). The IQ test, which was based in the incremental theory and learning goal framework, has been widely interpreted as an entity theory and performance goal framework. Dweck and Elliott (1983) found that the more applicable view represents a merge of both entity and incremental theories that focuses on individuals' current differences regarding their relative ability but emphasizes their individual growth in ability. Nicholls (1984) also found similar findings. Olshefsky et al. (1987) and Benenson (1987) conducted studies that tested the hypothesis that social goals were predicted by children's implicit theories of their social attributes. Olshefsky et al. (1987) and Benenson (1987) developed questionnaires that assessed the beliefs that children had pertaining to whether they felt their personality, or their likeability, was

malleable or fixed. In the Olshefsky et al. (1987) study, children were asked to indicate the degree to which they agreed with statements, such as "You have a certain personality and there isn't much you can do to change it" (Dweck & Leggett, 1988, p. 265). In both studies, the results indicated transparent individual differences in whether children subscribe to the incremental or entity theory of their social attributes in achievements situations. Olshefsky et al. (1987) and Benenson (1987) hypothesized that, synonymous to achievement situations, the theories could predict the goals that the children adopt. Proceeding the assessment of their theories of intelligence, children were asked to describe when they felt smart in school. The children were told "Sometimes kids feel smart in school, sometimes not. When do you feel smart?" As predicted, children who were categorized as having more of an entity theory stated that they felt smart when their schoolwork had no errors, when their work was better than their peers, or when the task was simple for them (Dweck & Leggett, 1988). In contrast, children categorized as having more of an incremental theory stated that they felt smart when they worked on difficult tasks and mastered the challenges. The results indicated that children with different theories, incremental and entity, reported experiencing high self-esteem in essentially opposite conditions, although the conditions were represented by the goals accompanied by their theories (Dweck & Leggett, 1988). The researchers concluded that the theories and their allied goals can be viewed as two distinct self-systems. Self-systems are defined as "two forms of self-concept with two different sources of self-esteem" (Dweck & Leggett, 1988, p. 266).

Erdley and Dweck (1987) found that an entity theory about others' traits, the belief that individuals or groups of individuals have unchangeable positive or negative

qualities, may lie at the center of stereotypes and prejudices. Additionally, Erdley and Dweck predicted that individuals with entity theories of others would be more susceptible to acting on stereotypes, forming stereotypes of others, maintaining stereotypes in the face of counter information, and distorting information pertaining to stereotypes. Erdley and Dweck also predicted that individuals with an incremental theory of others should progressively be more sensitive to situational factors that can account for individuals' negative behavior (Jones & Nisbett, 1972). Furthermore, individuals with an incremental theory of others should be more likely to consider subsequent behavior that contradicts the initial negative behavior and be more willing to engage in behavior that will promote desired changes other individuals.

John Hattie, a prominent researcher, exchanged views during a conversation held with Carol Dweck in a blog titled, *Misinterpreting the Growth Mindset: Why We're Doing Students a Disservice* (Dewitt & Hattie, 2017). Hattie discussed the disappointment that they both shared regarding the haphazard manner growth mindsets had been applied by a variety of individuals. Dweck concurred with Hattie concerning individuals, such as educators, researchers, and pundits, who have been participants in the spread of false growth mindsets (Dewitt & Hattie, 2017). Dweck never intended individuals to perceive a growth mindset as a state of being. Alternately, she wanted growth mindsets to be viewed as a coping strategy in particular circumstances (Dewitt & Hattie, 2017). For example, Dweck stated the following:

- "Growth mindset leads to expending more empathetic effort in contexts where empathy is challenging (e.g., when they disagree with someone or some other they do not know is suffering)" (Schumann, Zaki, & Dweck, 2014, p. 487).

- "In situations when students are overconfident, they allocated less time to difficult problems" (Dweck, Ehrlinger, & Mitchum, 2016, p. 94).
- "The triggers for when growth matters: When we face challenge; Receive criticism, or fare poorly compared with others; When threatened or defensive" (Dweck & Gross-Loh, 2016, p. 1).
- "Peer conflict and peer exclusion" (Yeager & Dweck, 2012, p. 309).
- "When individuals make mistakes, make an effort to hide mistakes, reveal deficiencies, or feel they do not have the needed abilities" (Dweck, 2007, p. 35).
- "Those [individuals] who see -failure-is-debilitating' as opposed to those [individuals] who see failure-is-enhancing" (Haimoitz & Dweck, 2016, p. 866).

Collectively, Dweck suggests that growth mindsets should be used as a coping strategy when individuals are anxious, make errors, are not familiar with answers, and experience failure (Dewitt & Hattie, 2017). Nevertheless, individuals continue to misuse the mindset theory by categorizing people as having fixed or growth mindsets. Furthermore, some individuals have been misled to assume growth mindset is about using rewards for effort and praise for feedback.

Dweck's work focuses on two core ideas, the belief that intelligence is malleable or the belief that intelligence is fixed (Dewitt & Hattie, 2017). If false growth mindsets continue to spread, individuals will fail to notice the astounding value that previous research has suggested, such as when to use, how to use, with which students, and to what ends growth mindsets should be applied (Dewitt & Hattie, 2017).

Due to evolutionary work of Dweck and her colleagues, significant gains have been made in a variety of settings (e.g., schools, businesses, and homes) where

individuals understand the mindset theory and how to utilize mindset interventions effectively. Nevertheless, false growth mindsets have been and continue to spread amongst educational settings as well as in other domains possibly due to a lack of exposure to the mindset theory and/or insufficient mindset training (Stanford MCHRI, 2018). The overall intent of this study was to compare beliefs and perceptions of growth mindset between P-12 teachers and parents. By utilizing the mindset theory as a theoretical framework, transparency regarding the effects, needs, implications, and future research recommendations related to mindset theory training could be provided for educational leaders as well as stakeholders focused on increasing achievement levels.

Fixed and Growth Mindsets

Dweck (2006) suggests that utilizing feedback with students that focuses on their growth towards mastering a particular skill rather than praising them for being smart. Dweck developed a mindset assessment tool for the purpose of categorizing individuals as having a growth or fixed mindset. The growth mindset is comprised of the idea and desire for continuous learning, challenges, and feedback. The growth mindset is defined as the mindset of students who care about learning and feel education will increase their intellectual abilities (Dweck, 2006). Although students with growth mindsets are considered life-long learners, students with fixed mindsets tend to shy away from learning opportunities that they feel will impede upon their intellectual personas. Challenge avoidance, looking smart, and unwillingness to change are attributed to individuals with a fixed mindset. A fixed mindset is defined as the mindset of students who focus on if they will be judged as smart or not (Dweck, 2006).

Randomized experimental studies have found even brief interventions used where a growth mindset was conveyed can have significant, lasting effects on student learning and performance (Dweck et al., 2013). For example, in an experiment with over 250,000 students who were learning mathematical concepts on the Khan Academy website, growth mindset encouragement that was presented at the top of the screen (e.g., "When you learn a new kind of math problem, you grow your math brain!") increased the rate at which students successfully solved math problems even months after students no longer saw the message, compared to students who did not see this message (Dweck et al., 2013).

Although an abundance of research has been conducted suggesting the importance of praising effort versus intelligence in learning environments and organizations, students continue to be judged as whether they are smart or not. Creating an engaging and positive learning environment is one of the most powerful tools educators can utilize to encourage learning (Conroy, Al-Hendawi, Snyder, Sutherland, & Vo, 2009). The brain synapses fire each second of the day, and students with growth mindsets who dwell in stimulating environments are capable of anything (Boaler & Dweck, 2016). Einstein, presumably the most renowned of individuals perceived to be a genius, did not learn to read until he was 9-years-old. He attributed his achievements to the number of mistakes he made and the persistence that he exhibited (Boaler & Dweck, 2016). Einstein put forth a tremendous amount of effort in his work. When he made mistakes, he intensely tried harder. Einstein's approach to work and life is characterized as an individual with a growth mindset (Boaler & Dweck, 2016).

Individuals who hold entity theories of personalities can cause increases in social adversity negative reactions. Three studies were conducted to examine whether the effects of implicit theories of personalities could be generalized beyond social adversity reactions and extend to adjustment in multiple functioning domains (Dweck et al., 2014). In Study 1, 158 ninth-grade students from Northern California participated. Surveys that assessed students' implicit theories of personality, characteristics of their backgrounds, global psychological stress, and physical health were administered. In addition, each student's end-of-the-semester grades were collected. Study 1 results indicated that having an entity theory personality predicted more immediate negative reactions to social adversity and predicted a greater number of lower grades, stress, and poor health at the end of the year (Dweck et al., 2014). In Study 2, all 82 ninth-grade students who enrolled in Algebra 1 participated. Baselines surveys, similar to those in Study 1, were used to collect data (Dweck et al., 2014). In Study 3, 150 ninth-grade students who attended a low-performing high school in California participated. The data collection measures were similar to those in Study 1 and Study 2. Studies 2 and 3 investigated brief interventions that taught an incremental theory of personality. The students in the incremental theory group displayed fewer negative reactions to an immediate experience of social adversity and also had lower physical illnesses and stress (Dweck et al., 2014). Students in the incremental theory group also had higher levels of achievement. Future research suggestions included examining the temporal relationship between changes in achievement, stress, and health (Dweck et al., 2014).

Initially, the idea that adult mindsets directly influence the mindsets of children has been suggested by a number of findings. For example, an extensive amount of

research related to expectancy effects that showed that parents' and teachers' perceptions of an individual student's level of competence was aligned with the student's perception of his or her own competence (Frome & Eccles, 1998). Furthermore, results from previous studies have linked practices that could have an effect on students' own mindsets, teachers' mindsets, and parents' mindsets (Jose & Bellamy, 2012). For example, Moorman and Pomerantz (2010) assigned a challenging task to U.S. children. The mothers of the children participating in the task were told that the ability related to the task could grow with time or that the task gave a measurement of their child's fixed ability. When a positive emphasis was put on the growth mindset, mothers tended to respond more constructively in response to the struggles of their child, potentially communicating a growth mindset. Nevertheless, other researchers found that no relationship existed between the mindsets of students and their socializers' (i.e., parents or teachers) supported mindset (Dweck & Haimovitz, 2017).

Parents' and their children's mindsets that related to intelligence were not significantly correlated in studies conducted with a group of U.S. parents and their 7- to 8-year-old children (Gunderson et al., 2013) and a study of U.S. parents and their 9- to 12-year-old children (Haimovitz & Dweck, 2016). Similarly, in many studies of U.S. teachers and students, no prediction could be made if the students' mindsets were based on their teachers' fixed or growth mindsets. Researchers, such as Park, Gunderson, Tsukayama, Levine, and Beilock (2016) and Sun (2015), found that teachers' mindsets could not be used to predict students' mindsets. The best opportunities to learn transpire when students believe in their own abilities (Boaler & Dweck, 2016).

Researchers and practitioners could use research related to mindsets to affect large-scale changes (i.e., reforms) in education if significant investments were made in the areas of principles, practices, and assessments (Dweck et al., 2013). Teaching and learning strategy reforms are evolving constantly. Although change is constant, the continuous waves of reform rarely penetrate into the classroom to bring about systemic improvements in instruction (Fullan, Hill, & Cr'evola, 2006). Fullan (2002) and Mehta et al. (2012) found that most reforms were on too small of a scale, too limited in their scope, underconceptualized, too fragmented, underresourced, and without a rigorous research foundation.

Educators' and students' role in the learning process is tantamount, regarding the effectiveness of taught and learned subject matter. To promote effective educational reforms, teachers' capacity to deal with change, learn from change, and help students learn from change will be critical for the future development of societies (Fullan, 1993). A new mindset to enable educators to become agents of change, rather than being compelled to accept change, is needed for educational reforms to be effective.

Student Mindset Theory Studies

Positive effects on student motivation and academic performance have been shown in empirical studies related to growth mindsets (Blackwell et al., 2007; Dweck, 2009; Ng, 2018). Additionally, other researchers (e.g., Ng, 2018; Vedder-Weiss & Fortus, 2013; Yeager et al., 2012) have suggested that student behaviors and outcomes, which consisted of academic achievement, engagement, and willingness to attempt new challenges, were related to mindsets. Claro and colleagues (2016) conducted a study with 10th-grade students in Chile. The results from the study indicated that students with more

of a growth mindset performed better on national standardized tests. Additionally, the results indicated that students from low income families with growth mindsets were substantially buffered from the unfavorable effects that poverty has on achievement (Claro et al., 2016).

Growth Mindset Interventions

The effects of growth mindset interventions on students' achievement at all ages have been shown in a variety of studies. For example, an increase in academic achievement and motivation was a result of growth mindsets interventions with a group of 99 seventh-grade students (Blackwell et al., 2007; Ng, 2018). According to the findings, students in the growth mindset intervention group performed better than the students in the control group. The results of the study indicated an improvement in the learning process and a desire to work hard for students who received the growth mindset interventions (Blackwell et al., 2007; Ng, 2018).

Growth mindset interventions have greatly impacted student outcomes in subject areas, such as science and mathematics (Grant & Dweck, 2003; Ng, 2018). Research from an analysis of 10 studies in the journal, *Trends in Neuroscience and Education*, has suggested that, when students were taught the science of how their brains changed over time, they understood that intelligence can be developed, rather than remaining unchangeable (Sparks, 2018). Teaching students about the brains' ability to make new neural connections based on previous experience is a commonly employed strategy when helping students to develop a growth mindset rather than a fixed mindset. Researchers from the Canada-based Laboratory for Research in Neuroeducation found a moderate benefit from the interventions for each of the students in the study (Sparks, 2018).

Additionally, the researchers found stronger effects when the interventions were used for improving growth mindset in mathematics or with students who were afraid of the stereotypes that they would receive based on poor performance.

Student Achievement

Leggett (2016) conducted a study to determine if a relationship existed between the mindsets and achievement of eighth-grade female students. The sample in the study consisted of archival data from 5,164 eighth-grade female students in the United States (Leggett, 2016). The archival data were utilized from the Trends in International Mathematics and Science Study dataset. Quantitative methods, such as Pearson *r* correlation coefficients, were utilized to determine if statistically significant relationships existed between the variables (Leggett, 2016). The results from the study indicated that statistically significant relationships were found between the students' mindsets and achievement in the mathematics content domains. Recommendations of the study included the importance of teachers, policy makers, and educational stakeholders incorporating the teaching and learning of mindsets to empower students' attitudes and beliefs as well as positively impacting mathematics learning and achievement (Leggett, 2016). Additionally, the findings indicated the importance of educators seeking to share information pertaining to mindsets and cultivate mindset implementation daily in their classrooms. Future research recommendations included the need to examine relationships between teacher mindsets and their students' mindsets (Leggett, 2016). Leggett (2016) also indicated that parents' and families' mindsets could play a role in the mindset that a student develops and utilizes when learning.

Teaching and Learning

Fraser (2018) conducted a study in a primary school to identify strengths of the application and implementation of growth mindset approaches to teaching and learning. The sample of participants consisted of one head teacher, five teachers, and 28 students. The study took place in Scotland. Data collection methods included student focus groups, observations, and staff member semi-structured interviews (Fraser, 2018). An inductive approach was used to analyze the data thematically. The results indicated the existence of four overarching themes, including embarking on the process, classroom culture and teaching, outside the classroom, and student approach to learning (Fraser, 2018). Strengths of the study included the collaborative approach utilized by the school. Furthermore, the staff's understanding of the growth mindset evidence related to teaching and learning was a strength (Fraser, 2018). A participant in the study indicated that one of the major factors that attributed to the success of the growth mindset approach was parents' understanding of why the new approach was implemented and working at the school. Furthermore, participants in the study discussed the school's involvement of the parents in the growth mindset approach (Fraser, 2018). Participants noted that parents' participation in informational sessions and collaborative opportunities related to growth mindsets. Research has suggested that the wider community around a school can have a positive role in the sustainability and success of interventions (Meyers et al., 2012). Fraser (2018) felt that schools should consider the research concerning community involvement in interventions because of the possible support or hindrance of learning that takes place outside of the school day could have on the development of growth mindsets.

Self-Efficacy and Motivation

A study was conducted to examine whether self-efficacy and motivation would improve in adolescent students who were served by special education after a mindset intervention (Rhew, Cosentino, Goolkasian, & Piro, 2018). Sixth-, seventh-, and eighth-grade students who received learning disability services in the subject of reading (n = 126) were included in the sample. Three teachers participated in the study and administered the pre- and post-assessments. The quasi-experimental design was used in the study, which included a treatment and comparison group (Rhew et al., 2018). Brainology, a growth mindset intervention, was used in the treatment group. A perception scale (i.e., Reader Self-Perception Scale - 2nd Edition) and a questionnaire (i.e., Motivation for Reading Questionnaire) were utilized in the study to assess whether possible differences existed in the mean scores for motivation and self-efficacy in reading (Rhew et al., 2018). Rhew et al. (2018) found a significant difference in the motivation, but not self-efficacy, of adolescent students who were served by special education and participated in the growth mindset intervention.

College Students

Another study was conducted to examine the prediction of college students' persistence when solving difficult mathematics problems based on academic mindsets (Chen, Miele, & Vasilyeva, 2016). An experimental manipulation was included in the study in which participants first received either an easy or a challenging arithmetic task. After the manipulation, each participant solved two target mathematics problems that consisted of one solvable, but very difficult problem and another unsolvable problem. The time that the participants spent solving each problem served as a persistence measure. (Chen et al., 2016). The results indicated that for the difficult, but solvable

problems, participants with more of a fixed mindset had less persistence after completing a challenging arithmetic task than after completing a simple arithmetic task. The results also indicated that students' persistence levels may vary as a function of academic mindset and previous experiences of success or failure for certain types of mathematics problems (Chen et al., 2016).

Gender

Gender stereotypes have potential to influence career and academic choices (Bosak & Sczesny, 2008). Women are underrepresented continuously in the most prestigious areas in higher education, including STEM, and remain a minority in the highest academic positions (Canadian Association of University Teachers, 2008). Previous research has suggested that, when compared to males, females were more likely to hold an entity theory of intelligence and if an entity theory of intelligence was endorsed, students' academic trajectories were affected negatively (Martinot & Verniers, 2015). An entity theory of intelligence is synonymous with a fixed view of intelligence (Dweck, 1999). Students who endorse more of an entity theory of intelligence often avoid challenging tasks or blame themselves when failure is faced (Yeager & Dweck, 2012). A study was conducted to examine the possibility of a gender stereotype basis regarding beliefs that focused on students' personal theories of intelligences (Martinot & Verniers, 2015). More specifically, the purpose of the study was to examine secondary students' knowledge regarding the belief of others describing female students' intelligences as less malleable than male students. Eighty-five French ninth-grade students were used as the participants. The students in the sample volunteered to participate in the study, and parent consent was obtained for each participant (Martinot & Verniers, 2015). Twenty-six

males and 17 females rated the intelligence of female targets, and 24 males and 18 females rated the intelligence of male targets using a seven-point Likert scale. Using the Implicit Theories of Intelligence Scale (Dweck et al., 1995), the students were asked to rate the extent to which others perceived male or female students' intelligence as malleable and fixed, male or female students making efforts regarding their current achievement, and male or female students' future success potential (Martinot & Verniers, 2015). The scale used was a validated and adapted French version by Da Fonseca et al. (2007). The researchers conducted two (target's gender) * two (participants' gender) ANOVAs on the three dependent variables measured in the first section of the questionnaire (i.e., fixed intelligence of the target, malleable intelligence of the target, and equation of intelligence). Students were assigned randomly to complete a section of the two-part questionnaire (Martinot & Verniers, 2015). The results of the study indicated that, when compared to males, others perceived female intelligence as less malleable. Current efforts and potential relationships for future achievement were contingent upon the target's gender (Martinot & Verniers, 2015). In addition, females who worked harder in school were described as having less potential to succeed in the future, but male students had no link. In support of these findings, Smith, Lewis, Hawthorne, and Hodges (2013) found that females, who perceived that they needed to exert more efforts than their counterparts in a field, reported less motivation in regard to the pursuit of a field. Future studies could explore the extent to which females' knowledge of the unfavorable gender stereotype regarding the poor malleability of their gender's intelligence is linked to their choice to enter challenging domains (Martinot & Verniers, 2015).

In summary, several studies have shown the positive effects of growth mindsets on individuals when facing challenges. Figure 1 lists key studies that support the benefits of utilizing growth mindset strategies with students in areas, such as achievement, motivation, and persistence. Blackwell et al. (2007) conducted a study to examine academic achievement and motivation after growth mindsets interventions and found improvements in students' process of learning and motivation after growth mindset interventions. In the domains of mathematics, Leggett (2016) and Chen et al. (2016) found statistically significant relationships in achievement and motivation when utilizing growth mindset interventions during challenging experiences. Furthermore, the results from the Rhew et al. (2018) found a significant difference in the motivation of students after the growth mindset intervention.

Student Concept Analysis Chart

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
Blackwell et al. (2007)	Examined effects on academic achievement and motivation after growth mindsets interventions.	99 seventh-grade students	mediational analysis ANOVA	Improvement occurred in the learning process with students who received the growth mindset interventions.
Leggett (2016)	Determined if a correlation exist among the mindsets and achievement of eighth-grade female students.	5,164 eighth-grade female students	Pearson *r* correlation coefficients	Statistically significant relationships were found among the students' mindsets and achievement in the mathematical content domains.

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
Fraser (2018)	Identified strengths of the application and implementation of growth mindset approaches to teaching and learning.	one head teacher, five teachers, and 28 students	inductive approach was used to thematically analyze the data	Strengths of the study included the collaborative approach utilized by the school and the staff's understanding of the growth mindset evidence related to teaching and learning.
Rhew et al. (2018)	Examined whether students' self-efficacy and motivation would improve in adolescent students who were served by special education after a mindset intervention.	126 students and three teachers	quasi-experimental design	The results included a significant difference in the motivation, but not self-efficacy, of adolescent special education participants who participated in the growth mindset intervention.
Chen et al. (2016)	Predicted college students' persistence when solving difficult mathematics problems based on the academic mindsets.	college students	ANCOVA Mediation analysis	The results indicated that for the difficult, but solvable problem, participants with more of a fixed mindset had less persistence after completing a challenging arithmetic task than after completing a simple arithmetic task.

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
Martinot & Verniers (2015)	Examined the possibility of a gender stereotype basis regarding beliefs focused on students' personal theories of intelligences.	85 French ninth-grade students	ANOVA	The results of the study indicated that, when compared to males, others perceived female intelligence as less malleable.

Figure 1. A concept analysis for the key student mindset theory studies.

Educational Leaders Mindset Theory Studies

A variety of studies have been conducted by researchers that focused educational leaders' experiences with mindset theory practices. Miles (2018) conducted a study that focused on the mindset of educational leaders. The research questions that guided the study were developed to understand the educational leaders' experience regarding mindsets, specifically growth mindset training for faculty and staff (Miles, 2018). Miles (2018) used purposive sampling in a large suburban district to select 11 educational leaders. The participants consisted of superintendents, assistant superintendents, principals, and department leaders in the district. Face-to-face interviews, personal narratives, and member checking sessions were used as data collection methods in this qualitative study. Data were collected from member checking sessions and interviews during the study. Miles used an inductive analysis model. Emergent themes were identified with the use of initial coding and pattern coding. Based on the findings, participants viewed the evaluation and measurement of the growth mindset as a major factor pertaining to implementation support. The participants suggested passionate, resilient, and risk-taking transformational leaders were needed in schools. Miles found

that participants in the study understood the connection that was shared between the attributes of core leadership and how the attributes enrich organizations' culture regarding the implementation of growth mindset initiatives. Limitations of the study included the small sample size of educational leaders in the study. Miles recommended future research could include natural setting observations of participants as a data collection method. In addition, longer interview and observation periods with more participants were recommended. Different frameworks, such as an interpretive framework (Hatch, 2002), were recommended to unveil supporting themes that never emerged when the inductive analysis framework was utilized (Miles, 2018). Miles (2018) provided additional recommendations, such as utilizing a quantitative survey for teachers, parents, and students to examine the difference in experience compared to educational leaders.

Guidera (2014) conducted a study that used Dweck's (1999) growth mindset research to address four destructive learning threats, which could contribute to the achievement gaps for students in low income, high-minority schools. The four destructive learning threats consisted of fixed mindsets, the Pygmalion effect, negative school culture norms, and stereotype threat (Guidera, 2014). The participants in the study were seven school leaders. Data were collected with the use of document review (i.e., reflective journals and action plans), focus groups, interviews, pre- and post-site visits (Guidera, 2014). The data were analyzed using qualitative coding. Results from the study indicated that coaching and training were key components for norm changes and norm changes were possible in educational settings when actions were intentional and coordinated (Guidera, 2014). The limitations included the study's framework, the limited time to

conduct the study, and the implementation of the norms in low-income, high-minority schools within only one large urban school (Guidera, 2014). Future research suggestions included examining the impact and implementation experience when extended to child care, online schools, preschools, adult education, higher education, and in the home environment.

Through the implementation of their key roles, principals establish the culture of their building (Wallace Foundation, 2013). The principal also establishes a vision regarding academic success for all students, thus creating an environment for learning and the improvement of instruction. Wagner (2014) conducted a study to examine the types of practices that principals approve in their respective building and ascertain the self-reported mindset of building level principals. Participants in the study consisted of 142 principals from western Pennsylvania (Wagner, 2014). Surveys were used to collect the data. Inferential statistics, including *t*-test and Pearson *r*, were used to analyze the data (Wagner, 2014). The results of the study indicated that 77% of the building-level leaders self-reported a growth mindset of ability and 4% self-reported a fixed mindset. The remaining 17% fell between growth and fixed on the mindset spectrum (Wagner, 2014). The correlation calculations indicated that a significant relationship did not exist between the self-reported theories of intelligence and the principals' practices.

A study was conducted to explore the relationships between principals on the evaluation tool, Pennsylvania Framework for Leadership, and the principals' corresponding self-reported growth mindset and degree of self-efficacy (Silbaugh, 2016). The data were collected using an electronic survey that consisted of mindset scales, demographic questions, principal efficacy scales, and performance evaluation data

(Silbaugh, 2016). The data were analyzed using a linear regression and correlation matrices. The results of the study indicated a positive relationship between principals' overall performance evaluation and their instructional self-efficacy reports. No relationship was found between growth mindset and the self-efficacy sub-scale measures (Silbaugh, 2016). The recommendations comprised of educating principals on the mindsets and requiring them to confront and share their beliefs to help eliminate false growth mindset notions. Moreover, professional development opportunities and principal preparation programs that yielded the strongest influence on principal levels of performance were suggested based on the findings of the study (Silbaugh, 2016).

In summary, when educational leaders provide effective growth mindset training and allow teachers to implement mindset interventions with their students, many studies have shown positive results in norm changes, self-efficacy, and student anxiety. Studies conducted by Guidera (2014), Silbaugh (2016), and Miles (2018) found positive effects that were associated with educational leaders who participated in and provided professional development opportunities for teachers, which could aid in the possible elimination of false growth mindset notions. Future study recommendations by Guidera (2014) included examining the impact and implementation experience when extended to child care, online schools, preschools, adult education, higher education, and in the home environment. Figure 2 lists key studies to support the benefits of educational leaders providing training and evaluations focused on growth mindset strategies.

Educational Leader Concept Analysis Chart

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
Miles (2018)	Explored educational leaders' experience regarding mindsets.	11 educational leaders	-inductive analysis model -Emergent themes were identified with the use of initial coding and pattern coding.	The evaluation and measurement of the growth mindset was viewed as a major factor pertaining to implementation support.
Guidera (2014)	Addressed four destructive learning threats that possibly contributes to the achievement gaps for students in low income, high-minority schools.	seven school leaders	coding	Results from the study indicated that coaching and training were key components for norm changes.
Wagner (2014)	Examined the types of practices principals approve in their respective building and ascertain the self-reported mindset of building level principals.	142 principals from western Pennsylvania	Inferential statistics were used to analyze the data.	The correlation calculations indicated that no significant relationship existed between the self-reported theories of intelligence and the principals' practices.
Silbaugh (2016)	Examined relationships between principals on the evaluation tool,	Pennsylvania principals	linear regression and correlation matrices	The results indicated a positive relationship between principals'

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
	Pennsylvania Framework for Leadership, and the principals' corresponding self-reported growth mindset and degree of self-efficacy.			overall performance evaluation and their instructional self-efficacy reports on the students' level of anxiety.

Figure 2. A concept analysis chart for the key educational leader mindset theory studies.

Teacher Mindset Theory Studies

Although educators have increasingly become knowledgeable of growth mindsets, a lack of research pertaining to teacher experience with the theory exists in educational literature (Education Week Research Center, 2016). The Education Week Research Center (2016) conducted a study to examine teacher experience, professional development, and training with growth mindset. The study was developed to answer questions derived from experts concerning growth mindsets in education (Education Week Research Center, 2016). Questions, such as whether or not teachers may have misconceptions pertaining to growth mindset, were posed.

In 2016, a survey was created by the Education Week Research Center and administered to a national sample of more than 600 K-12 teachers. The survey participants were not a representative sample of U.S. teachers (Education Week Research Center, 2016). Nevertheless, the participants included a diverse group of teachers with a wide variety of teaching experience from various grade levels. Results from the study indicated that 85% of the participants wanted more growth mindset professional development, although almost half of the teachers had received prior training on the topic

(Education Week Research Center, 2016). Only 20% of the participants felt confident in fostering a growth mindset in their students, and 1 in 5 of the participants responded that they integrated growth mindset deeply into their teaching practice. Additional findings in the study included teaching practices utilized on a daily basis that they thought would foster a growth mindset. For example, teachers consistently praised student effort and encouraged them to focus on developing their areas of strength daily (Education Week Research Center, 2016). Carol Dweck, prominent growth mindset scholar, shared a concern focused on the possibility of teachers' emphasis towards student effort rather than learning strategies. Dweck suggests that the result of possible teacher misconceptions regarding growth mindset may cause a lack of focus on growth mindset's purpose of helping students develop processes that can increase their learning (Education Week Research Center, 2016).

Other key findings of the study were that over 90% of the teachers in the study attributed a growth mindset to determination, learning excitement, high levels of participation, and high levels of effort (Education Week Research Center, 2016). Furthermore, 98% of the teachers agreed that growth mindset utilization in the classroom could lead to a higher level of student learning achievement.

Rosenthal and Jacobson (1968) conducted a study to examine how teacher beliefs affected student achievement. The students at an elementary school where the research was conducted were given an intelligence pretest (Rosenthal & Jacobson, 1968). Afterwards, the teachers in the study were given 20% of the student names in the school that showed a high level of potential for intellectual growth. The teachers were unaware that the students were selected randomly with no relation to the intelligence pretest

(Rosenthal & Jacobson, 1968). The results indicated that teacher beliefs regarding students' level of intelligence at the beginning of the year affected the IQ score of the students over time. In addition, Rosenthal and Jacobson (1968) found that, if the teachers in the study believed students were smart based on the IQ test, the teachers seemingly and unconsciously taught the students in a manner that substantially increased the students' IQ.

Williams (2012) conducted a study that explored the Dweck and Leggett (1988) model of implicit theories in the context of teaching. The purpose of the study was to establish the use of the model as a means to describe teachers' beliefs about students' ability and social behavior. In addition, the study sought to explain connections between teachers' efficacy for classroom management, instruction, and their implicit beliefs and teachers' positive and negative emotional experiences (Williams, 2012). The study consisted of 183 participants, who completed online surveys or paper and pencil questionnaires. The data were analyzed using factor mixture models. The results of the study indicated that the implicit theories, which were associated with efficacy regarding tendencies toward incremental beliefs, correlated with higher efficacy in well-fitting models (Williams, 2012). In addition, Williams (2012) found that, when compared to the implicit theory, efficacy was a superior predicator of positive emotional outcomes. Moreover, the Williams found that teachers' beliefs of malleability regarding students' academic abilities and social behavior could predict improved practice and teaching motivation, but the relationship should be demonstrated with further study that accounts for teachers' efficacy as well (Williams, 2012).

School Improvement

Although a significant amount of resources has been provided to school districts across the United States for improving professional and hiring practices, measurable gains have ranged from inconsistent to negligible (Spiess, 2017). Spiess (2017) conducted a study to determine to what magnitude beliefs about mindset and beliefs about knowledge predict cultural development for public school teachers. Due to the enhanced understanding related to the importance of cultural proficiency development of P-12 public school teachers, the development of more effective ways to support and predict cultural proficiency development was an imperative step to take in the efforts to improve outcomes for all students. The study included 853 K-12 public school teachers from school districts in a state located in central United States. Surveys were used to collect data, and the data were analyzed using a hierarchal multiple regression, a correlational analysis, a one-way ANOVA analysis, and an independent samples *t*-test (Spiess, 2017). Results from the study indicated that the mindset of others could be a predictor of cultural proficiency development. Moreover, Spiess (2017) found that each of the five construct variables (i.e., mindset of self, mindset of others, simple knowledge, certain knowledge, and source of knowledge) were statistically significant predictors of cultural proficiency development. Implications from the study included the importance of teachers developing a growth mindset. Limitations included students who participated in the study were from one state located in central United States, which had a lower percentage of teachers and non-Caucasian students in comparison to the national average (Spiess, 2017).

Currently, in the context of student populations who are diverse, the identification of factors could be useful to support school improvement efforts in areas, such as school culture and culturally responsive teaching practices (Bangert, Hanson, & Ruff, 2016). A study by Bangert et al. (2016) examined content validity of a school's growth mindset construct. The research question focused on whether there was a relationship between principal openness to change, faculty openness to change, work locus of control, and school growth mindset. The quantitative research design included a convenience sample of 64 high school teachers and five administrators (Bangert et al., 2016). The study was conducted in four middle and high schools located in mostly a rural and northwestern state. A paper and pencil Likert-type scale was utilized to collect data (Bangert et al., 2016). A correlation analysis and regression analysis were used to analyze the data. The results of the study indicated that a significant relationship existed between organizational learning variables and a growth mindset culture (Bangert et al., 2016). Results from the study included positive implications for providing administrators in school with a method to assess their school's culture. Moreover, implications included providing teachers with feedback that could change their beliefs and inform improvements in culturally responsive teaching practices (Bangert et al., 2016). A limitation in the study was the convenience sample, which affected the size of the participant pool and the number of available participants. Future studies were suggested based on the research; for example, a qualitative study could be used to determine the epistemological factors that influence the perceptions of individuals and orientations to the embracement of change and growth mindset (Bangert et al., 2016). In addition, a rich area for study was suggested in regard to a quantitative study that could identify

organizational factors included in school mindset with school outcomes. The researcher felt that the study could provide empirical evidence and contribute to the body of research literature pertaining to psychosocial factors that contribute to improved school outcomes.

Professional Development

Hatcher (2018) conducted a qualitative case study to explore how professional development on the topics of mathematics anxiety and incremental theories of intelligence affected the instruction and planning of mathematics by classroom teachers (Hatcher, 2018). The study also explored changes in student mindset and grit as perceived by teachers. The study took place in the northeast region of the United States in a suburban elementary school over a 6-week period (Hatcher, 2018). The study's sample size consisted of six teachers in Grades 3 through 5. Data sources included observations interviews and observations (Hatcher, 2018). Coding was used in the grounded theory of constant comparison to analyze data. The coding resulted in the five major themes that were outlined as embracing mistakes, shifting mindset, developing grit, developing a growth mindset, and preparing for mathematics mentally (Hatcher, 2018). Triangulation of data was used to ensure creditability of the results. The researcher found that the findings of the study supported current research on growth mindset and mathematics anxiety (Hatcher, 2018). An increase in student motivation and confidence after the growth mindset interventions were implemented were identified by the participants in the study. The results of the study indicated that teachers should consider utilizing growth mindset interventions for the purpose of helping their students develop a positive mindset in their classroom, thus reducing anxious feelings in the mathematics classroom (Hatcher, 2018). Future study suggestions were provided, such as a study to compare the number of

students in kindergarten with mathematics anxiety to the number of students with mathematics anxiety in second grade. The study could possibly provide knowledge pertaining to when mathematics anxiety begins in elementary-aged students (Hatcher, 2018).

Teachers' skills are the most important factor in influencing student achievement, yet the daily demands are placed endlessly upon teachers (Stenzel, 2015). Regardless of the type of mindset possessed by the teacher, academic coaches are needed to support all teachers (Stenzel, 2015). Stenzel (2015) conducted a quantitative study to examine the relationship between the mindset of teachers and their beliefs regarding coaching, improved instructional practices, and feedback. The research questions were directed toward discovering the influence that mindsets of teachers had on their beliefs pertaining to the process of coaching and feedback. The study consisted of 68 participants (Stenzel, 2015). Data were collected with the utilization of paper and pencil surveys. The data were analyzed by *t*-test, descriptive statistics, Pearson *r*, one-way ANOVA, and Tukey's post hoc test (Stenzel, 2015). The results of the study indicated that coaches and leaders possessed a slightly greater mean in mindsets and beliefs when compared to teachers. Furthermore, a statistically significant difference was found regarding beliefs towards the feedback and coaching process among individuals who served in leadership positions (Stenzel, 2015). In regard to classroom teachers, a relationship existed between the feedback process based on years of experience and beliefs about coaching. Future research recommendations included the need for further exploration with beliefs and mindsets to understand how coaching may impact student achievement positively or negatively (Stenzel, 2015).

Charette (2016) conducted a study that examined the relationship between the development of a growth mindset in teachers and their engagement in professional learning community (PLC) practices. Research has suggested that, when teachers and students possessed a growth mindset, their capacity for learning was enhanced (Charette, 2016). The mixed methods research study consisted of 153 participants. Surveys were used to collect data. The results from the study indicated that 83% of the participants reported moderate to high level of PLC practices; however, that finding did not correlate with 27% of the participants who possessed a growth mindset (Charette, 2016). Fixed mindsets were high in proportion, 90%, among novice teachers. The high proportion indicated initiatives, regarding promoting growth mindsets, should begin prior to PLC practices in the school environments (Charette, 2016). Recommendations included teacher preparation programs placing a larger emphasis on research that demonstrates positive social, academic, and neurological outcomes associated with growth mindsets (Charette, 2016). Moreover, recommendations emphasized the importance of providing new teachers with support because they may lack the understanding of the importance of mentoring programs led by veteran teachers as a means of promoting a systematic development of growth mindsets (Charette, 2016). Future research suggestions included exploring the magnitude to which PLC practices increased the self-confidence of teachers, thereby shifting teacher beliefs to growth mindsets.

Pedagogical Practices

Due to the emphasis in education today on student talk, learning ownership, and collaboration, the choice of words that teachers utilize during their interactions with students and during instruction have become more crucial (Rau, 2016). A study by Rau

(2016) was conducted to explore students' mindset shifts within a learning environment that was rich in process-oriented language with a focus on inevitable problems while learning. The research questions focused on teacher language impacts, the manner students reacted to challenging situations, student language shifts, and mindset self-perceptions as learners (Rau, 2016). The sample size in the study consisted of fourth-grade students, two males and one female, in a midwestern rural community in the United States. The data sources included interviews, student mindset surveys, written responses to scenarios, videotaped classroom instruction, and daily written reflections. To analyze the data, a constant comparative method of analysis was used during the study with an open coding process (Rau, 2016). Results from the study indicated that student mindsets shifted from speed- to content-focused after the students learned in a process-oriented language-rich learning environment. In addition, language was incorporated in students' written reflections and classroom interactions that focused on growth and problem-solving strategies (Rau, 2016). A future research suggestion was exploring teacher language pertaining to students' mindsets and academic achievement, as well as parent involvement implications.

Research has suggested that, depending on the type of feedback used with individuals, feedback can promote motivation or have negative consequences (Henderlong & Lepper, 2002). Beach and Jonsson (2012) conducted a study that investigated the integration of teachers' choice feedback with their implicit theories of intelligence and beliefs. The research questions focused on whether individuals who preferred to use person-focused praise tended to have entity theories of intelligence and had more tolerance for accepting the use of stereotypes. Moreover, the researchers also

wanted to determine if individuals, who preferred to utilize process-focused praise, held incremental theories while also having a small amount of tolerance for accepting the use of stereotypes (Beach & Jonsson, 2012). The participants included 176 pre-service teachers. The data sources included questionnaires and scales, such as a Swedish translation of Dweck's (1999) Theories of Intelligence Scale. The results of the study indicated that individuals who had the belief that intelligence is fixed were more likely to contribute success and failure to natural capabilities; however, Beach and Jonsson (2012) found that process praise was more likely if individuals had a stronger belief in incremental theories. A regression analysis also confirmed that pre-service teachers who preferred to utilize process praise tended to have strong incremental theories of intelligence (i.e., growth mindsets). Future research suggestions included using a larger sample to determine if an indirect relationship existed between feedback praise, acceptance of stereotypes, and implicit theories (Beach & Jonsson, 2012).

A study was conducted to examine the beliefs of preservice and in-service teacher beliefs concerning factors that influence the academic performance of students (Chen-Bouck, Kelly, Kravchenko, & Patterson, 2016). The participants in the study were 73 pre-service teachers and 53 in-service teachers. The data were collected through the use of questionnaires and surveys. The data were analyzed using a repeated measures ANOVA. The results of the study indicated that pre-service and in-service teachers viewed teacher factors as a more important determinant of academic performance when compared to family or student factors (Chen-Bouck et al., 2016). Teachers with a stronger entity theory view of students considered teachers less responsible for the academic performance of students. Future research suggestions included the need for research in

the area of teacher characteristics, including professional and demographic factors, due to the possible influence that the factors have on teacher beliefs of students and teacher interaction with students (Chen-Bouck et al., 2016).

A study was conducted by Dweck, Good, and Rattan (2012) to explore how comfort-oriented feedback affected students versus strategy-oriented feedback. The participants included 54 students who attended a private university on the West Coast of the United States. Each participant completed an online study that asked participants to imagine that they were enrolled in a calculus course at their university and their first grade assigned by their professor was a 65 (Dweck, Good, & Rattan, 2012). In the scenario, the professor noticed that the participants were disappointed and proceeded with either comfort-oriented feedback or strategy-oriented feedback. The manipulated feedback caused the participants to have strikingly different perceptions regarding their professors' beliefs regarding developing growth mindsets in mathematics (Dweck et al., 2012). The participants who received comfort-oriented feedback felt that the professor had a fixed mindset and low expectations. In addition, the participants who received comfort-oriented feedback held a significantly lower motivational level and lowered expectations pertaining to their performance than students who received strategy-oriented feedback (Dweck et al., 2012). Implications of the study included gaining knowledge of how pedagogical practices can affect students by locking them into a low achievement level.

Teachers are able to influence the motivation and achievement of students when subtle cues are delivered through the language they use (Kacker-Cam, Shumow, & Schidmidt, 2015). Teachers with entity theories (i.e., fixed mindsets) praise their

students' qualities or comfort students' limited abilities when they are failing; however, the perseverance and motivation of the students may be affected negatively (Mueller & Dweck, 1998). Furthermore, teachers' responsibilities for students can be predicted by their mindsets. Teachers may be less responsive to pedagogical education and see themselves as less responsible for students' academic performance when they have fixed mindsets (Hanhimaki, Kuusisto, Rissanen, & Tirri, 2018).

Although previous conducted research has focused on interventions, teachers' everyday general pedagogical practices and mindset actualization in the classroom remain understudied (Kuusisto, Rissanen, Tirri, & Tuominen, 2019). No systematic efforts to describe precisely the core principles of what could be called a growth mindset pedagogy have been found. A growth mindset pedagogy could be defined as a science of teaching that likely will develop a growth mindset in students while also being associated with the growth mindset of the teacher (Kuusisto et al., 2019).

Three exploratory cases studies were conducted in a school, which included classroom observations and stimulated recall interviews. The purpose of the case studies was to explore how teachers with more of a growth or fixed mindset made sense of their students' learning, behaviors, and achievements. The case studies also focused on how the meaning systems could influence teachers' general classroom practices and their knowledge regarding the process of teaching, studying, and learning (Hanhimaki et al., 2018). Meaning systems are defined as ideas that individuals form around their beliefs of human quality malleability. The results from the study indicated that the implicit meaning systems of teachers influenced the manner that they interpret students' behavior, learning, and achievements (Hanhimaki et al., 2018). The teachers' implicit meaning systems

guided their pedagogical thinking and student motivational practices that they implemented. However, the implicit theories that the Finnish teachers embodied appeared to connect with their culture-bound assumptions, and the implementation in the classroom of these theories varied situationally when observed (Hanhimaki et al., 2018).

Mindset Interventions

A study was conducted to examine teacher-related variances associated with the effects of classroom interventions on student beliefs regarding their abilities in science as fixed or malleable growth (Kacker-Cam & Schmidt, 2015). The data were drawn from a larger study that was conducted in 14 diverse public middle school science classrooms and consisted of 363 seventh-grade students and four teachers. Two of the four teachers participated in a mindset intervention and were the focal point of the study (Kacker-Cam & Schmidt, 2015). In addition, 160 of the 363 seventh–grade students participated in the mindset training. The remaining two teachers received another intervention and were not included in the analysis of the study. Rating scales and observations were used in this study as data sources (Kacker-Cam & Schmidt, 2015). The results of the study indicated that, when teachers emphasize growth mindset development, conceptual development, mastery of goals, and learning strategies in their daily interactions with their students, their students had better outcomes compared to the other teachers in the study. Suggestions were provided in the study, such as program developers should develop and examine methods to impact practices of teachers for maximizing and sustaining program impact (Kacker-Cam & Schmidt, 2015).

Higher Education

College professor beliefs concerning fixed abilities is a possible barrier for stigmatized students (Canning, Green, Muenks, & Murphy, 2019). Although federal initiatives aimed at gaining knowledge regarding the underrepresentation of diverse individuals in science, technology, engineering, and mathematics (STEM) have been on-going for decades and have costed millions of dollars, underrepresented racial/ethnic minorities continue to underperform their Caucasian peers academically. A longitudinal study was conducted at a university to examine STEM college professors' views concerning the malleability or fixedness of ability and researched whether the faculty members' views correlated with the student's academic achievement and motivation in the college professors' STEM courses (Canning et al., 2019). Students' beliefs pertaining to faculty beliefs had been previously examined, but the researchers were unaware of a study that examined STEM faculty self-reported mindset beliefs and used as a predictor for student performance. A combination of a university wide-sample of STEM faculty mindset beliefs and student records were used to test the researchers' hypothesis (Canning et al., 2019). The researchers hypothesized that the fixed beliefs of the STEM professors concerning ability and intelligence would be a leading factor related to the students' underperformance relative to their non-stereotyped peers and lower levels of motivation. Using a validated two-item measure regarding implicit theory beliefs about intelligence, STEM professors at a large public university were surveyed (Canning et al., 2019). The university records were used to access students' course grades. A multilevel regression model included confounding factors, which consisted of previous test scores (e.g., SAT) and faculty characteristics (Canning et al., 2019). The multi-level regression

also accounted for the nested nature of the data. Partially crossed random effects were added to the model because students were given the option to enroll in the same professor's class for multiple courses or in courses taught by different professor across seven terms (Bates, 2010). A theoretical framework was utilized from classic studies that included threatening situational cues in a learning environment that were typically manipulated (Aronson & Steele, 1995). Examples of situational cues are gender, ethnicity, and race. Results from the study indicated that, on average, each student taught by a professor who endorsed more of a fixed mindset performed more poorly in STEM courses (Canning et al., 2019). Moreover, the findings of this study indicated that students' experiences in their STEM courses were predicted by their professors' mindset beliefs. The immensity of the racial achievement gaps in courses taught by professors with a more fixed mindset was twice as large compared to courses taught by professors with more of a growth mindset. Furthermore, consistent with the stereotype threat and cues hypothesis, professors with more fixed mindset beliefs tended to be related strongly with a lower course performance among African American, Latino, and Native American students than Caucasian and Asian students (Canning et al., 2019). Limitations of the study included a lack of an assessment that focused on student stereotype threat experiences.

Like students, teachers have mindsets as well as understanding their mindset perceptions with regard to their students is vital (Oduwole, 2016). Oduwole (2016) conducted a qualitative study to gain insights into the perceptions of faculty members in community colleges and their projections of students' academic outcomes. The participants in the study consisted on 10 community college faculty members (Oduwole,

2016). Data for the study were collected through the utilization of open-ended, semi-structured verbal interviews. The data were analyzed with the use of the identification of themes (Oduwole, 2016). The findings from the study supported studies previously conducted pertaining to fixed and growth mindset theories. For example, a study was conducted with more than 1,500 students who attended 13 high schools across the country. When compared to the control group, low achieving students' percentage of courses failed decreased by nearly 7% after learning the growth mindset for one classroom session over the internet (Dweck et al., 2013). Additionally, an experiment was conducted that consisted of over 7,500 students at a state university with high dropout rates. When compared to the control group, a growth mindset web-based intervention completed the summer before their freshman year increased the percentage of students earning 12 or more credits in the first term by 3-4%. Furthermore, the percentage of African American students increased 10% (Dweck et al., 2013). All participants in the study shared the belief that intelligence is a vital aspect of education. However, majority of the participants in the study did not equate a high level of intelligence to successful academic outcomes and achievement. Moreover, the findings indicated that gaining understanding with regard to faculty members' mindsets could strongly enhance each college students' quality of educational experiences and contribute to scholastic experiences that may foster successful academic outcomes (Oduwole, 2016). Recommendations for future research included a continued qualitative inquiry regarding the phenomenon of faculty members at community colleges (Oduwole, 2016).

Despite the positive findings related to growth mindsets, sometimes the theory is refuted by conditions of classrooms or not reinforced. Auten (2013) conducted a case

study to explore the manner that community college professors fostered growth mindsets in their classrooms. The study included 14 participants. Data were collected through the use of interviews and were analyzed through coding, identifying themes, and categorizing. The results from the study indicated that the student mindset and the teacher played a vital role in the academic success of students at the community college (Auten, 2013). Moreover, the community college professors requested training tools and strategies to promote classroom environments that fostered growth mindsets. Implications of the study included that, when educators became knowledgeable of growth mindsets, one of the first comments that they made was that the theory had affected their parenting and not only the work with their students (Auten, 2013). One recommendation for future research included a quantitative study to examine the mindsets of community college professors using a pre- and post-assessment with a treatment group who experienced a mindset professional development (Auten, 2013).

In summary, when teachers are exposed to the positive benefits associated with implementing growth mindset interventions, results indicated that teachers wanted more growth mindset professional development opportunities aligned with implementing growth mindset interventions effectively. Teachers have been exposed to benefits, such as an increase in student motivation and confidence after growth mindset interventions were implemented (Hatcher, 2018). Furthermore, Williams (2012) found that teachers' beliefs of malleability regarding students' academic abilities and social behavior could predict improved practice and teaching motivation. The proper praise language provided to students, by teachers who used a growth mindset intervention, has also been associated

with increases in achievement (Rau, 2016). Figure 3 lists key studies that support the benefits of providing growth mindset training for teachers.

Teacher Concept Analysis Chart

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
Education Week Research Center (2016)	Focused on teacher experience, professional development, and training with growth mindset.	600 K-12 teachers	Descriptives	The results indicated that 85% of the participants in the study wanted more growth mindset professional development, although almost half of the participants received prior training on the topic.
Williams (2012)	Developed a model as a means to describe teachers' beliefs about students' ability and social behavior.	183 participants	factor mixture models	The findings indicated that the implicit theories were associated with efficacy regarding tendencies toward incremental beliefs correlated with higher efficacy in well-fitting models.
Spiess (2017)	Determined to what magnitude beliefs about mindset and beliefs about	853 K-12 public school teachers	hierarchal multiple regression, a correlational analysis, a one-way ANOVA analysis, and an	The results indicated that the mindset of others as a predictor of cultural

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
	knowledge predict cultural development for public school teachers		independent samples *t*-test	proficiency development.
Hatcher (2018)	- Explored how professional development on the topics of mathematics anxiety and incremental theories of intelligence affect the instruction and planning of mathematics by classroom teachers - Examined changes in student mindset and grit as perceived by teachers.	six teachers from Grades 3 through 5	Coding was used in the grounded theory of constant comparison to analyze data	An increase in student motivation and confidence after growth mindset interventions were implemented were identified by the participants in the study.
Charette (2016)	Examined the relationship between the development of a growth mindset in teachers and their engagement	153 participants	Correlation coefficient	The results indicated that 83% of the participants reported moderate to high level of PLC practices, but the findings did

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
	in PLC practices.			not correlate with 27% of participants who possessed a growth mindset.
Bangert et al. (2016)	Examined content validity of a school's growth mindset construct	64 high school teachers and five administrators	correlation analysis/regression analysis	Results from the study included positive implications for providing administrators in school a method to measure their school's culture.

Figure 3. A concept analysis chart for the key teacher mindset theory studies.

Parent Mindset Theory Studies

Empirical research suggests that the sustainability and success of interventions could be better employed when the wider community around a school plays a role in the implementation process (Meyers, Durlak, & Wandersman, 2012). The development of growth mindsets could be supported or hindered by the feedback and learning that takes place from members of the wider community, such as parents (Fraser, 2018). This study examined the notion that children's parent-oriented motivation underlies the benefits of parents' involvement regarding school engagement and achievement (Cheung & Pomerantz, 2012). Beginning in the fall of the academic school year, 825 U.S. and Chinese students in seventh grade reported. Until the end of eighth grade, the same 825 participants also reported multiple dimensions of their motivation in school every 6 months (Cheung & Pomerantz, 2012). Information regarding the participants' grades and

self-regulated learning strategies were collected. Results from the study indicated that, if parents were more involved in students' learning over time, the students were more motivated to do well in school for parent-oriented reasons and also contributed to students' enhanced self-regulated learning and thereby student achievement (Cheung & Pomerantz, 2012). In addition, findings from the study indicated that, although children's parent-oriented motivation correlated with their autonomous and controlled motivation in school, the correlation uniquely elucidated the positive effect of parents' involvement on children's grades.

Parents play a vital role in children's learning (Pomerantz et al., 2012). Two studies that were conducted by Cimpian, Pomerantz, Shah, and Tworek (2016) examined whether parents' mindsets concerning mathematical ability were a contributing factor to the language that they used regarding mathematical ability with their children and the negative consequences of parents' language associated with children mindsets, motivation, and achievement in mathematics. The research question leading Study 1 was focused on whether parents' process versus person language about performance was shaped by their growth versus fixed mindsets (Cimpian et al., 2016). Participants in Study 1 consisted of a sample size of 128 mothers as well as their children (Cimpian et al., 2016). In Study 1, mothers were given a mathematics brochure to read about fixed and growth mindsets. In the brochure, the growth mindset mathematical ability was defined as malleable by the environment, and the fixed mindset mathematical ability was defined as a stable entity that shows little change (Cimpian et al., 2016). Next, mothers read a storybook to their children in which two main characters failed or succeeded in mathematics. Throughout the story, discussion questions were embedded. Coding was

used to analyze each mothers' process versus person language in response to the discussions questions about the characters' success or failure (Cimpian et al., 2016). The results from Study 1 indicated that, by providing parents with information that mathematics ability is malleable, parents could be led to utilize more process versus person language in talking about story characters. Participants in Study 2 included 20 children. Study 2 focused on whether parents' process versus person language about another child's performance influenced children themselves. In Study 2, a research assistant read the story book from Study 1 to the children (Cimpian et al., 2016). Embedded in the storybook was process language about why each character succeeded or failed (Cimpian et al., 2016). Results from Study 2 indicated that language regarding a story character did not appear to contribute to children's mindsets, motivation, or achievement in mathematics. An implication from Study 2 was that children's mindsets possibly were not influenced due to the short amount of exposure or because the mindsets of the children were strongly growth-oriented already, which left little room for change (Cimpian et al., 2016).

Since the early 1960s, research has suggested that parenting styles could affect children as they grow up. Boswell (2012) indicated that previous research has shown how much unearned praise from parents and teachers, from an early age, could be linked to students' sense of academic entitlement. Jewell (2018) conducted a qualitative case study to explore the relationship between parenting styles and the influence that they had on adult children's attitudes toward academic entitlement. Jewell noted the extensive research previously conducted regarding the development of academic entitlement, but Jewell stated that a lack of research existed regarding how parenting styles could

influence the attitudes of adult children regarding academic entitlement. The participants in the study were freshman college students from Northern California Community College. Data were collected and triangulated through the use of interviews, online surveys, and classroom observations regarding Baumrind (1965) parenting styles. The data were analyzed with the use of coding. Jewell (2018) found that not one parenting style (i.e., authoritarian, authoritative, and permissive) had an effect on the attitudes of college students' levels of academic entitlement. Findings from the study also served as a benchmark for post-secondary institutions to gain more insight regarding students' entering college with implausible expectations pertaining to the amount of effort required to succeed found in collegiate classrooms with an elevated amount of rigor. Implications from the study included assisting students with understanding their personal academic entitlement beliefs and for students to be able to merge the attitudes with the manner in which parents raised them to open pathways for students to better understand how they learn. Future research suggestions included determining the root causes and the role that parents played in student's academic entitlement levels.

Barba (2019) conducted a study to explore the relationship between student mathematical experience and parent mathematical experience. The participants in the study included 14 high school seniors and their parent(s) or guardian(s). The qualitative study followed a hermeneutical phenomenological approach (Barba, 2019). Quantitative and qualitative data were collected to describe the phenomenon of the student mathematical experience and the internal consistency of mindsets as applied to general intelligence and mathematical intelligence (Barba, 2019). The findings of the study indicated that a relationship did not exist between parent mathematical mindset and

student mathematical mindset. Recommendations for further study included determining the reasons that inconsistencies were found when applying implicit theories of intelligence to specific subject areas (Barba, 2019). Other suggestions included that teachers should be more aware of their feedback that is communicated to their students with verbal or behavioral cues regarding failure.

Northrop (2014) conducted a quantitative study to determine if a relationship existed between the parents' mindset, their child's/student's mindset, and the student's level of anxiety as a high school senior in the college application process. Participants in the study included 26 parent and student pairs from four independent, private, college preparatory high schools in Southern California (Northrop, 2014). Surveys were used to collect data for the study. Findings from the study included that participants in the study predominately held growth mindsets that allowed for healthier responses to challenges and failures and promoted resilience, learning goals, effort, and hard work (Northrop, 2014). Based on the research findings, recommendations included schools providing parents and guardians with educational opportunities regarding mindsets. In addition, resources and strategies should be provided to parents to develop a growth mindset among their children (Northrop, 2014).

Particularly, praise for intelligence has played an important role in the perceptions of children concerning their ability and motivation to succeed (Dweck & Mueller, 1998). Gunderson et al. (2013) conducted a study by observing parent praise in natural, at home, interactions when the children were 1, 2, and 3 years of age. The results indicated that children who received a relatively high proportion of process praise (i.e., effort and strategy praise) displayed incremental motivational frameworks that were stronger,

including the belief that intelligence can be developed and larger desire for challenge when students were in Grade 2 or Grade 3. Dweck et al. (2017) conducted a study to examine the same children from the Gunderson et al. (2013) study in fourth grade. The participants in the study were 53 students. The results of the study indicated that toddlers with process praise predicted children's mathematics and reading academic achievement in elementary school 7 years later, according to their incremental motivational frameworks (Dweck et al., 2017). When data were further analyzed, motivational frameworks showed that process praise affected fourth-grade students' achievement through their trait beliefs (i.e., the belief intelligence is malleable versus fixed), rather than through learning goal the participants created (i.e., easy versus challenge preference). Implications in the study included the need for testing the relationship between academic achievement, process praise, and motivational frameworks more directly utilizing interventions with students in elementary grade levels and in interventions with parents and teachers of young children (Dweck et al., 2017).

Carlson (2018) conducted an exploratory mixed methods research study to explore the exposure, knowledge, and involvement of parents of gifted students with regard to growth mindset instruction. Moreover, the researcher explored how teachers could increase home school collaboration pertaining to growth mindset concepts (Carlson, 2018). The participants included parents and teachers who were selected using purposive sampling. The researcher used a survey questionnaire and a semi-structured interview through a focus group format. Descriptive statistics and constant comparison analysis were used to analyze the data (Carlson, 2018). Findings for the study indicated that parent participants demonstrated a relatively high knowledge base of growth mindset

concepts and a relatively high level of exposure to growth mindset concepts. Alternatively, parent participants had a moderate, but variable, level of involvement with the concepts (Carlson, 2018). Teachers in the study felt that the parent's role was to reinforce growth mindset concepts at home with the support of a classroom teacher. Future research recommendations were to examine the impact that school practices could have on increasing gifted students' growth mindsets (Carlson, 2018).

In summary, the development of growth mindsets could be supported or hindered by the feedback and learning that takes place from members of the wider community, such as parents (Fraser, 2018). Educators have expressed the importance of parents' reinforcement of growth mindset concepts at home with the support of a classroom teacher. Results from previous studies have indicated the positive effects of parents' awareness, reinforcement, and usage of growth mindset language with their children. Dweck et al. (2017) found that toddlers with process praise predicted students' mathematics and reading academic achievement in elementary school 7 years later. Additionally, motivational frameworks showed process praise affected fourth-grade students' achievement through their trait beliefs (i.e., the belief that intelligence is malleable versus fixed) rather than through the learning goal that the participants created (i.e., easy versus challenge preference). Based on the research findings, recommendations suggest that schools should provide parents and guardians with educational opportunities regarding mindsets. Providing parents with resources and strategies that help parents develop a growth mindset among their children was also suggested (Northrop, 2014). Figure 4 presents key studies to support the benefits of parents utilizing growth mindset strategies with their children.

Parent Concept Analysis Chart

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
Cheung & Pomerantz (2012)	Examined the belief children's parent-oriented motivation is the basis for the benefits of parents' involvement regarding children's engagement and achievement in school.	825 participants	N/A	Results indicated that the more involved parents were in children's learning over time, the more the children were motivated to do well in school.
Cimpian et al. (2016)	Examined whether parents' mindsets concerning mathematics ability was a contributing factor to the language they used regarding mathematics ability with their children and the negative consequences of parents language associated with children mindsets, motivation, and achievement in mathematics.	Study 1 consisted of a sample size of 128 mothers and their children. Participants in Study 2 consisted of 20 children.	Coding	Results of Study 1 indicated that, by providing parents with information that mathematics ability is malleable, parents could be led to utilize more process versus person language. Results of Study 2 indicated that language regarding a story character did not appear to contribute to children's mindsets, motivation, or achievement

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
				in mathematics.
Jewell (2018)	Explored the relationship between parenting styles and the influence they have on adult children's attitudes toward academic entitlement.	freshman college students from Northern California Community College	Coding	Not one parenting style had an effect on the attitudes of college students' levels of academic entitlement.
Barba (2019)	Explored the relationship between student mathematical experience and parent mathematical experience.	14 high school seniors and their parent(s) or guardian(s)	hermeneutical phenomenological approach	The results indicated that a relationship did not exist between parent mathematical mindset and student mathematical mindset.
Northrop (2014)	Determined if a relationship existed between the mindset of a parents, their child's/students' mindset, and the student's level of anxiety as high school seniors in the college application process.	26 parent and student pairs	N/A	Participants in the study predominately held growth mindsets that allowed for healthier responses to challenges and failures and promoted resilience, learning goals, effort, and hard work.

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
Dweck et al. (2017)	Examined the same children from the in Gunderson et al. (2013) study academic achievement in fourth grade.	53 students	N/A	The results of the study indicated that toddlers with process praise predicted children's mathematics and reading academic achievement in elementary school 7 years later.

Figure 4. A concept analysis chart for the key parent mindset theory studies.

Opposing Views Mindset Studies

Previous empirical research has shown that individuals with a fixed mindset (i.e., entity theorist) perform worse on subsequent tasks when compared to individuals with growth mindsets (i.e., incremental theorist; Park & Kim, 2015). Park and Kim (2015) conducted five studies to determine if individuals with growth mindsets performed better than individuals with fixed mindsets. In Study 1, 119 undergraduate students in a university located in Hong Kong participated in a task that was designed for each participant to fail (Park & Kim, 2015). After the participants received feedback, they were asked to choose a proceeding task. The students with the growth mindsets continued to persist on the initial task. The students with fixed mindsets moved on to a subsequent task (Park & Kim, 2015). A binary logistic regression was used to analyze the data. The results from the studies indicated that individuals with fixed mindsets performed worse than individuals with growth mindsets only when they believed that the subsequent task assessed an ability that was related to the previous failed task (Park & Kim, 2015).

However, individuals with growth mindsets performed worse than individuals with fixed mindsets when they believed that the next task assessed an ability that was not related to the previous failed task. Furthermore, results from the study indicated that individuals with fixed mindsets were more likely to choose a second task that required a different ability and performed better than on that task than individuals with growth mindsets (Park & Kim, 2015).

A study was conducted to examine the perception pertaining to the nature of talent development by school children and adolescents (Kuusisto, Laine, & Tirri, 2017). The 607 participants consisted of 200 elementary students, 256 lower secondary students, and 151 upper secondary school students. The purpose of the study was to investigate whether students perceive intelligence and giftedness as developing or as inherent (Kuusisto et al., 2017). In addition, the study's purpose was to determine how students' learning outcomes were related to their perspectives regarding talent development. The results indicated that students perceived the nature of giftedness as less malleable than the nature of intelligence. Furthermore, age and gender related differences existed in students' perceptions (Kuusisto et al., 2017). After the examination of the relationship between students' academic achievement and implicit beliefs, the results indicated that growth-oriented views concerning intelligence, but fixed views regarding giftedness, yielded higher mathematics grades. Furthermore, the relationship between mindset theory beliefs and academic outcomes may not be as direct as suggested by previous studies (Kuusisto et al., 2017). Schwartz, Cheng, Salehi, and Weiman (2016) found that the use of growth mindset may be understood and utilized differently by the lower and other groups.

Schwartz et al. (2016) indicated that students who were higher achieving and good at school had previously learned the responses that they should give on the mindset survey. Nevertheless, the higher achieving students treated the intervention message as just another thing to learn in school. In opposition to the higher achieving students, the lowest achieving students discovered a message of possible change to be powerful (Schwartz et al., 2016). Although their beliefs about intelligence did not change, they were driven forward by their boost of optimism.

A study by Wilkins (2014) examined the effectiveness of the growth mindset curriculum, Brainology. The development of the curriculum focused student achievement and motivational behaviors. The participants in the sample consisted of 684 seventh-grade students and their teachers from five middle schools in an urban school district in North Carolina (Wilkins, 2014). A variety of constructs were measured, such as effort beliefs, study skill strategies, mindsets, academic self-efficacy, and interest and engagement in science. Student motivational behavior was rated by the teachers and was used along with student mathematics and science achievement scores (Wilkins, 2014). The achievement scores were calculated by quarterly grades and mathematics assessments. The data were analyzed using ANCOVA and a path analysis prediction model (Wilkins, 2014). Wilkins found no significant changes in the constructs, except for a positive increase in science engagement and motivation in the full implementation treatment group. By the end of the program, the partial treatment group participants used significantly fewer rehearsal learning strategies (Wilkins, 2014). Over the course of the study, participants' quarter grades in science showed significant improvement.

Recommendations for future researchers included examining the effectiveness of interventions that could improve student achievement and motivation (Wilkins, 2014).

In summary, a variety of studies have been conducted to show the positive effects that growth mindsets have on individuals when facing challenges. Nevertheless, Kuusisto et al. (2017) found that individuals with growth mindsets did not perform better than individuals with fixed mindsets in every circumstance, and mindset theory beliefs and academic outcomes may not be directly related as suggested by previous studies. Park and Kim (2015) found that individuals with growth mindsets performed worse than individuals with fixed mindsets when they believed that the next task measured an ability that was not related to the ability needed for the previous failed task. Furthermore, results from the study indicated that individuals with fixed mindsets were more likely to choose a second task that required a different ability and performed better than on that task than individuals with growth mindsets. Growth mindset interventions could help the lowest achieving students (i.e., the bottom fifth) make improvements to their GPA, but these interventions showed little improvements with other students (Hattie, 2017). Figure 5 lists key studies where individuals with growth mindsets did not always perform better than individuals with fixed mindsets in challenging experiences.

Opposing Views Concept Analysis Chart

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
Park & Kim (2015)	Determined if individuals with growth mindsets will perform better than individuals with fixed mindsets.	119 undergraduate students	binary logistic regression analysis	Individuals with fixed mindsets were more likely to choose a task that required a different ability as a second task and performed

STUDY	PURPOSE	PARTICIPANTS	DESIGN/ ANALYSIS	OUTCOMES
				better than on that task than individuals with growth mindsets.
Kuusisto et al. (2017)	Examined the perception pertaining to the nature of talent development by school children and adolescents.	607 participants	Bivariate correlational analyses	Results indicated that growth-oriented views concerning intelligence, but fixed views regarding giftedness, yielded higher mathematics grades.
Wilkins (2014)	Examined the effectiveness of the growth mindset curriculum, Brainology.	684 seventh-grade students and their teachers	ANCOVA and a path analysis prediction model	The results found no significant changes in the constructs except for a positive increase in science engagement and motivation in the full implementation treatment group.

Figure 5. A concept analysis chart for the key opposing view mindset theory studies.

Summary

Woodbridge et al. (2014) found that those interventions that were successful and sustainable are foundationally built upon the strong beliefs regarding the effectiveness of the intervention by individuals implementing the intervention. After reviewing the literature, the positive effects of utilizing growth mindset interventions after proper

training during professional developments sessions, parent workshops, and other mindset training sessions were apparent. Although the revolutionary changes have been noted in a variety of studies involving educational entities, a large population of educational leaders, teachers, and community stakeholders who play a vital role in students' academic and career-based success lack mindset knowledge or implement false growth mindset strategies. The purpose of this study was to compare beliefs and perceptions of growth mindset between P-12 teachers and parents. The insight could provide a basis for educational leaders to create professional development experiences for their faculty and staff and workshops for parent and guardians focused on promoting a growth mindset.

CHAPTER III

METHODOLOGY

Introduction

Although a plethora of research pertaining to growth mindsets has been conducted (Dweck, 1999), false growth mindsets continue to be spread amongst educational entities and organizations around the world. (Stanford MCHRI, 2018). The purpose of this study was to compare beliefs and perceptions of growth mindset between P-12 teachers and parents. This chapter consists of the research design, the role of the researcher, participants, instrumentation, data collection, and data analysis information. The chapter concludes with a summary of key components.

Research Design

The researcher utilized an explanatory, sequential mixed methods research design. Morse and Niehaus (2009) stated a mixed methods research design, when conducted with purposeful care, can be a stronger design versus a single research method design because validity and understanding are enhanced, enriched, and expanded by verifying results from another perspective with the supplemental component. The mixed methods design was best for this study because both qualitative and quantitative data were collected and integrated with the use of a theoretical framework (Creswell & Creswell, 2018). Additionally, the integration of the two methods yielded insight beyond the qualitative and quantitative information that could be provided by collecting the data in isolation.

The research questions guiding this study are as follows:

1. (Quantitative) What are the beliefs of teachers related to growth mindsets?
2. (Quantitative) What are the beliefs of parents related to growth mindsets?
3. (Qualitative) How do teacher perceptions of their knowledge of growth mindsets compare to parent perceptions of their knowledge of growth mindsets?

The mixed methods research design was the most appropriate method for understanding the perspectives that teachers and parents have related to growth mindsets in their roles in educating students (Miles, 2018). A variety of qualitative and quantitative research designs were considered for this study. Phenomenology was considered as a useful method if the purpose of the study was to research individuals' experiences of a phenomenon. Phenomenology was not appropriate for this study because growth mindset was not considered a phenomenon (Creswell, 2007; Miles, 2018; Stake, 1995). Grounded theory was not selected because the method focuses on an abstract theory of a particular action or process. Ethnography was not selected for the study because the researcher was not seeking to understand the cultural concerns of teachers and parents in the study (Creswell, 2007; Miles, 2018; Stake, 1995). Causal-comparative research was not utilized because the researcher was not seeking to find a difference between categorical independent variables and continuous dependent variables (Burke & Christensen, 2012).

In the quantitative research phase, a descriptive research design was used. The purpose of a descriptive research design is to describe facts and characteristics of an area of interest or population accurately and systematically (Dulock, 1993). In the qualitative research phase, a multiple-case study was used. Yin (2003) noted that a case study design should be considered when a researcher's focus of a study is asking why or how

questions. A multiple-case study approach was used to explore the differences in perceptions between two cases (Yin, 2003).

Role of Researcher

The researcher has been an educator for 10 years in the targeted school district where this study was conducted. The researcher was an academic coach in a Title 1 school district located in South Georgia. This study's topic was developed based on the researcher's belief that leaders, teachers, and parents should develop a shared understanding for the proper utilization of growth mindset. With this shared understanding, effective practices can be implemented within the classroom to increase student achievement and prepare students for the workforce. The researcher's dissertation chair and committee members provided guidance and input concerning research methods for the study. The research followed protocol by seeking approval from the appropriate district leaders and Columbus State University before conducting the research, and the researcher collected and analyzed the collected data, including surveys and follow-up focus groups.

Participants

Population

The study was conducted in a public P-12 Title 1 school district that was located in a rural, South Georgia community. According to the United States Census Bureau in 2019, 42% of the population where the study took place lived in poverty. Additionally, 60% of the students lived in single-parent households. The school district had seven schools. As outlined in Table 1, the one primary school included Grades PK through 1, and the one elementary school included Grades 2 and 3. The one intermediate school

included Grades 4 through 6, and the one middle school included Grades 7 and 8. The district had one ninth-grade academy and one high school, which included Grades 10 through 12. The charter school included Grades K through 12. All students in the school district received 100% free lunch. The student population in the rural, South Georgia school district where this study took place was 4,404. The student population consisted of 3,098 African Americans, 614 Caucasians, 556 Hispanics, 95 students who are two or more races, 31 Asians, 8 American Indian or Alaska Natives, and 2 Hawaiians or other Pacific Islanders.

Table 1

Participating School District's Grade Levels, Student Population and Teacher Population by School

Schools	Grade Levels	Student Population	Teacher Population
Primary School	Pre-K and First Grade	762	60
Elementary School	Second and Third Grade	605	47
Intermediate School	Fourth, Fifth, and Sixth Grade	852	46
Middle School	Seventh and Eighth Grade	584	46
Ninth Grade Academy	Ninth Grade	285	24
High School	10th, 11th, and 12th Grade	737	62
Charter School	K-12	579	39

The certified teacher population in the school district included 359 certified employees. The participants were from of a variety of socioeconomic (i.e., lower, middle, and upper class) and ethnic backgrounds. The ethnic classification of the teacher population included 157 African Americans, 188 Caucasians, 12 Asians, and 2 certified teachers who identify with two or more races.

Sample

The inclusion criteria for this study was teachers who were full-time certified employees in one of the district's P-12 public schools. The inclusion criteria for parents were parents with a minimum of one student who was enrolled in the district's P-12 public schools. In the quantitative phase of this study, all P-12 teachers and parents were invited to participate in a survey. The means for the scale, Fostering a Growth Mindset, were ordered from least to most and divided into four quartiles by group (i.e., teacher and parent). After the descriptive statistics were imported and analyzed from the teacher and parent survey data, the researcher wanted, at the minimum, six teachers and six parents to participate in the focus group; however, only three parent and three teachers were able to participate. For Focus Group 1, purposive sampling was used to select two teachers with means in Quartile 1 (i.e., low). For Focus Group 2, purposive sampling was used to select three teachers with means in Quartile 4 (i.e., high). For Focus Group 3, purposive sampling was used to select six parents with means in Quartile 1 (i.e., low). For Focus Group 4, purposive sampling was used to select three parents from the elementary school grade levels with means in Quartile 4 (i.e., high). After focus group invitations were sent, one teacher from the low perspectives group, one parent from the high perspectives group, and two parents from the low perspectives group agreed and participated in the focus groups. Due to the small percentage of individuals who agreed to participate in a focus group, the researcher purposively chose two teacher participants from Quartile 2 to participate in focus groups. Three teachers and three parents participated in the focus groups.

Instrumentation

Quantitative

Teacher survey. The K-12 teachers completed a survey created by the Education Week Research Center for the study, *Mindset in the Classroom: A National Study of K-12 Teachers* (Education Week, 2016). The survey consisted of 15 overarching questions. The original survey (see Appendix A) by Education Week Research Center was developed to gain a better understanding of teachers' views and experiences regarding their knowledge of mindsets (Education Week Research Center, 2016). At the beginning of the survey, the survey developers included minimal information regarding growth mindset to avoid participant bias and gauge participant familiarity the growth mindset theory. In Spring 2016, the Center conducted background research and developed the survey items (S. Lloyd, personal communication, September 13, 2019). The Center received feedback on a draft survey from a panel of advisers, which included professors with expertise regarding growth mindset and an elementary school principal (S. Lloyd, personal communication, September 13, 2019). This process is referred to as face validity. Face validity implies a measure has been determined to be pertinent, practical, and related to the purpose of the measure by a panel of experts (Nevo, 1985).

The original study was administered as an online survey to a random sample of registrants of the Education Week website. The registrants were identified as classroom teachers or instructional specialists in K-12. Out of the 722 responses received by the Education Week Research Center, 603 respondents were included in the study because they self-identified as a teacher. If survey respondents were not classroom teachers, they were removed from the study's analysis (Education Week Research Center, 2016). Raw survey responses were analyzed by the Education Week Research Center and presented

as frequency percentages. Respondents were provided with a general description of the term *growth mindset* at the start of the survey intentionally to gauge each respondents' familiarity with the term (Education Week Research Center, 2016). After the awareness section of the survey, the growth mindset term was defined with further detail. No demographic items were included in the survey. The researcher's EdD Dissertation Committee Chair obtained permission to utilize the survey for this study via email. The confirmation email is included in Appendix B.

Interval response scales were used to collect data from the participants. Some of the survey items had response options with only two anchors and a numerical scale, such as the items within Factors Affecting Student Achievement, Familiarity with Growth Mindset, Teacher Comments to Students, and Integration of Mindset into Teaching. Anchors are used to assign equal-interval properties to scales (Casper, 2019). For the Factors Affecting Student Achievement items, the original response scale provided the participants with the two anchors to rate their beliefs on a five-point scale between *Not at all Important* and *Very Important*. Three anchors were added to the original two anchors to provide five responses for participants. Robinson (2018) recommended that intervals should be equal in appearance or identical space should be perceived by participants between each response point. The rationale for adding three more anchors to the response scale was to provide equal space between the intervals. The revised response scale included 1 representing *Not at all Important*, 2 representing *Slightly Important*, 3 representing *Moderately Important*, 4 representing *Very Important*, and 5 representing *Extremely Important*. For the Familiarity with Growth Mindset items, the original response scale provided the participants with the two anchors to rate their beliefs on a

five-point scale between *Not at all Familiar* and *Very Familiar*. Three anchors were added to the original two anchors to provide five responses for participants. The revised response scale included 1 representing *Not at all Familiar,* 2 representing *Slightly Familiar,* 3 representing *Moderately Familiar,* 4 representing *Very Familiar,* and 5 representing *Extremely Familiar*. For the Teacher Comments to Students items, the original response scale provided the participants with the two anchors to rate their beliefs on a five-point scale between *Not at all Effective* and *Very Effective*. Three anchors were added to the original two anchors to provide five responses for participants. The revised response scale included 1 representing *Not at all Effective,* 2 representing *Slightly Effective,* 3 representing *Moderately Effective*, 4 representing *Very Effective*, and 5 representing *Extremely Effective*. For the Integration of Mindset into Teaching items, the original response scale provided the participants with the two anchors to rate their beliefs on a five-point scale between *Not at all Integrated* and *Deeply Integrated*. The anchor, *Deeply Integrated*, was removed, four responses were added to the remaining original anchor to provide five responses for participants. The revised response scale included 1 representing *Not at all Integrated*, 2 representing *Slightly Integrated*, 3 representing *Moderately Integrated*, 4 representing *Very Integrated,* and 5 representing *Extremely Integrated*.

Parent survey. The parent survey was adapted from the teacher survey by the researcher as outlined in Table 2 to utilize more parent-oriented verbiage and experiences pertaining to their beliefs concerning growth mindset. The parent participants' survey outcome is informed not only by their cultural background but also by their context, circumstances, and intersecting characteristics (Botcheva et al., 2009). Given that the

targeted population included lower socioeconomic families, the researcher wanted to utilize layman's terms instead of the educational jargon associated with growth mindset. The adapted survey for parents is included as Appendix C.

Table 2

Comparison Between Original Survey for Teachers and Adapted Survey for Parents

Scale	Original Teacher Survey	Parent Survey
Factors Affecting Student Achievement	How important are the following factors to student achievement? - Student engagement and motivation - Teaching quality - School climate - School safety - Social and emotional learning - Parental support and engagement - Use of growth mindset with students - School discipline policies - Family background	How important are the following factors to student grades? - Student effort and goals - Teaching quality - School Climate - School Safety - Social and Emotional Learning - Parental support and effort - Use of growth mindset with students - School discipline policies - Family background
Teacher/Parent Perceptions of Students	How easy or difficult do you believe it is to teach students with the following characteristics? Students who - Have grit and perseverance - Believe that intelligence is malleable - Have innate ability in the subject you teach - Believe that intelligence is fixed or static	How easy or difficult do you believe it is for teachers to teach students with the following characteristics? Students who - Have drive and determination - Believe that intelligence can change - Have specific abilities at birth - Believe that intelligence cannot change
Importance of Students Beliefs	To what extent do you agree that the following student beliefs are important to school success? Students believe that ... - They can learn from failure and are willing to try new things in school - They can find help at school when they have difficulties - Their work in school has value for them	To what extent do you agree that the following student beliefs are important to school success? Students believe that ... - They can learn from failure and are willing to try new things in school - They can find help at school when they have difficulties - Their work in school has value for them

Scale	Original Teacher Survey	Parent Survey
	- They can be successful in school - They belong in the school community - Administrators and teachers know students personally - Their academic abilities will increase through effort - They have the ability to learn challenging material - Administrators and teachers treat all students equally and fairly - They have some autonomy and choice in the topics they study - Doing well in school will lead to a good career	- They can be successful in school - They belong in the school community - Administrators and teachers know students personally - Their academic abilities will increase through effort - They have the ability to learn challenging material - Administrators and teachers treat all students equally and fairly - They have some autonomy and choice in the topics they study - Doing well in school will lead to a good career
Familiarity with Growth Mindset	How familiar are the following people with growth mindset? - You personally - Administrators in your school - Teachers in your school	How familiar are the following people with growth mindset? - You personally
Fostering a Growth Mindset	To what extent do you agree with the following statements? - Fostering a growth mindset in students is part of my job duties and responsibilities - I am good at fostering a growth mindset in my students - Administrators at my school are good at fostering a growth mindset in students - Other teachers at my school are good at fostering a growth mindset in students - I have adequate solutions and strategies to use when students do not have a growth mindset	Growth mindset is the belief that the mind can change. To what extent do you agree with the following statements? - Fostering a growth mindset in students is part of my parenting duties and responsibilities - I am good at fostering a growth mindset with my child - Administrators at my child's school are good at fostering a growth mindset in students - Other teachers at my child's school are good at fostering a growth mindset in students - I have plans and ideas to use when my child does not have a growth mindset
Outcomes Linked to Growth Mindset	To what extent do you agree that the following are associated with a student's growth mindset? - Excitement about learning - Persistence in schoolwork - High levels of effort on schoolwork	To what extent do you agree that the following are related to a student's growth mindset? - Excitement about learning - Dedication to schoolwork - High levels of effort on schoolwork

Scale	Original Teacher Survey	Parent Survey
	- Frequent participation in class discussions - Good attendance - Consistent completion of homework assignments - Frequent participation in extracurricular activities - Good course grades - High standardized test scores	- Frequent participation in class discussions - Good attendance - Consistent completion of homework assignments - Frequent participation in afterschool activities - Good course grades - High standardized test scores
Preparation to Address Mindset	My training has prepared me to address student growth mindset. - Pre-service training - In-service training and professional development	My training has prepared me to address student growth mindset. - Parent PTO informational sessions/trainings - Parent Workshops
Classroom/ Home Interactions	Fosters growth mindset - Praising students for their effort - Encouraging students who are already doing well to keep trying to improve - Encouraging students to try new strategies when they are struggling - Praising students for their learning strategies - Suggesting that students seek help from other students on schoolwork Does not foster growth mindset - Telling students that it is alright to struggle, not everyone is good at a given subject - Praising students for their intelligence - Praising students for earning good scores or grades - Encouraging students by telling them a new topic will be easy to learn	Fosters growth mindset - Praising your child for their effort - Encouraging your child who is already doing well to keep trying to improve - Encouraging your child to try new strategies when they are struggling - Praising your child for their learning strategies - Suggesting that your child seek help from other students on schoolwork Does not foster growth mindset - Telling your child that it is alright to struggle, not everyone is good at a given subject - Praising your child for their intelligence - Praising your child for earning good scores or grades - Encouraging your child by telling them a new topic will be easy to learn
Teacher/Parent Comments to Students	How effective are these statements in encouraging students to learn with a growth mindset? - I love how you stayed at your desk and kept your concentration in order to keep working on that problem.	How effective are these statements in helping your child to learn with a growth mindset? - I love how you stayed at your desk and kept your focus in order to keep working on that problem.

Scale	Original Teacher Survey	Parent Survey
	- Great job. You must have worked really hard on this. - See, you are good at this subject. You got an A on your last test. - I really like the way you tried all kinds of strategies on that problem until you finally got it. - You really studied for your test and your improvement shows it. - You are one of the top students in the class. - This is easy, you will get this in no time.	- Great job. You must have worked really hard on this. - See, you are good at this subject. You got an A on your last test. - I really like the way you tried all kinds of ideas on that problem until you finally got it. - You really studied for your test and your progress shows it. - You are one of the top students in the class. - This is easy, you will get this in no time.
Integration of Mindset into Teaching/ Parenting	To what extent have you integrated growth mindset into your teaching expectations and practice?	To what extent have you mixed growth mindset into your parenting beliefs and ways?
Effect of Teaching/ Parenting and Learning	To what extent do you agree that integrating growth mindset into your teaching will produce the following results? - Improve student learning - Improve my own instruction and classroom practice - Significantly change my classroom instruction	To what extent have you integrated growth mindset into your parenting expectations and practices? - Progress with my child's learning - Progress with my own parenting beliefs and ways - Significantly change my beliefs and ways
Training Experiences	Which of the following best describes your experience with professional development and training related to growth mindset?	Which of the following best describes your experience with parent workshops and training related to growth mindset?
Training Topics	Which of the following topics have been addressed in your training and professional development on growth mindset? - Encouraging students to try new strategies when they are struggling to learn a concept - Helping students see error or failure as an opportunity to learn and improve - Helping students understand that the brain is like a muscle and physically changes with training - Using growth mindset with specific student groups (e.g., students with disabilities)	Which of the following topics have been addressed in your training and parent workshops on growth mindset? - Encouraging your child to try new a new plan when they are struggling to learn a concept - Helping your child see error or failure as a chance to learn and improve - Helping your child know that the brain is like a muscle and physically changes with training - Using growth mindset with specific children (e.g., students with disabilities)

Scale	Original Teacher Survey	Parent Survey
	- Collaborating with colleagues to teach using growth mindset - Developing your own classroom-based assessments to capture growth mindset - Curriculum materials and resources to teach using growth mindset - Using growth mindset to teach standards in other academic subjects - Using growth mindset to teach state standards in English/language arts and literacy - Using growth mindset to teach state standards in mathematics - Other	- Talking with other parents about growth mindset - Curriculum materials and resources to reinforce using growth mindset at home - Using growth mindset to support other school subjects at home - Using growth mindset to support state standards in English/language arts and literacy at home - Using growth mindset to support state standards in mathematics at home - Other

As with the teacher survey, interval response scales were used to collect data from the participants. Some of the survey items had response options with only two anchors and a numerical scale, such as the items within Factors Affecting Student Achievement, Familiarity with Growth Mindset, Parent Comments to Students, and Integration of Mindset into Parenting. For the Factors Affecting Student Achievement items, the original response scale provided the participants with the two anchors to rate their beliefs on a five-point scale between *Not at all Important* and *Very Important*. Three anchors were added to the original two anchors to provide five responses for participants (Foster & Parker, 1995; Thurstone, 1929). The revised response scale included 1 representing *Not at all Important*, 2 representing *Slightly Important*, 3 representing *Moderately Important*, 4 representing *Very Important*, and 5 representing *Extremely Important*. For the Familiarity with Growth Mindset items, the original response scale provided the participants with the two anchors to rate their beliefs on a five-point scale between *Not at all Familiar* and *Very Familiar*. Three anchors were added to the original two anchors to

provide five responses for participants. The revised response scale included 1 representing *Not at all Familiar*, 2 representing *Slightly Familiar,* 3 representing *Moderately Familiar*, 4 representing *Very Familiar,* and 5 representing *Extremely Familiar*. For the Parent Comments to Students items, the original response scale provided the participants with the two anchors to rate their beliefs on a five-point scale between *Not at all Effective* and *Very Effective*. The researcher replaced the original anchors and provided five different response options for participants. The revised response scale included 1 representing *Not at all Helpful*, 2 representing *Slightly Helpful,* 3 representing *Moderately Helpful*, 4 representing *Very Helpful,* and 5 representing *Extremely Helpful*. For the Integration of Mindset into Parenting items, the original response scale provided the participants with the two anchors to rate their beliefs on a five-point scale between *Not at all Integrated* and *Deeply Integrated*. The anchors were removed, and five responses replaced the original anchor to for participants. The revised response scale included 1 representing *Not at all Mixed* 2 representing *Slightly Mixed,* 3 representing *Moderately Mixed*, 4 representing *Very Mixed,* and 5 representing *Extremely Mixed*.

Qualitative

Focus groups were conducted after the quantitative phase was completed. The researcher created the focus group questions to gain clarity and a more in-depth understanding of teacher and parent perspectives regarding growth mindsets (Miles, 2018). The focus group questions (see Appendix D) were developed based on the researcher's research questions that guided the study and the quantitative findings. An alignment of the focus group questions with literature is presented in Table 3.

Table 3

Qualitative Item Analysis Chart for Focus Group Questions

Item	Research	Research Question
1. What do you think about encouragement, praise, and attention? (Writing Prompt)	(Dweck, 2007; Stanford MCHRI, 2018(	3
2. Do you encourage your student(s) to persevere through challenging task? Why or why not?	(Dweck, 1999, Chen et al., 2016)	3
3. Do you think all students embrace challenges in the classroom? Why or Why not?	(Dweck, 1999; Chen et al., 2016)	3
4. What factors do you feel strongly affect student achievement? Why or why not?	(Blackwell et al., 2007; Dweck et al., 2014)	3
5. How do teachers' beliefs about their students' abilities affect student achievement?	(Dweck & Haimovitz, 2017; Frome & Eccles, 1998)	3
6. How do parents' beliefs about their students' abilities affect student achievement?	(Frome & Eccles, 1998; Ng, 2018)	3
7. How have you integrated student growth mindset into your expectations and practice?	(Education Week Research Center, 2016)	3
8. What are the most significant challenges you have faced in trying to foster a growth mindset in students?	(Education Week Research Center, 2016)	3
9. How do you encourage your student(s) when they are faced with failure?	(Dweck, 1999, 2006)	3
10. Can intelligence be developed through effort? Why or why not?	(Dweck, 1999, 2006)	3

Data Collection

Quantitative

The teacher survey and parent survey were created using Qualtrics. Prior to recruiting participants or collecting data, the researcher obtained permission to conduct the study from the selected school district and submitted a Columbus State University (CSU) Institutional Review Board (IRB) application. The researcher received IRB approval to conduct the study on November 18, 2019. The IRB approval letter and informed consent form are provided in Appendix E and Appendix F. Using the participating school district's email group with the permission of the superintendent and principals, a recruitment email was sent to all P-12 teachers (see Appendix G). A recruitment announcement was posted on the school webpages for teachers and parents on November 20, 2019 (see Appendix H). An IRB modification was submitted to the CSU IRB to post the recruitment announcement on the system's Facebook page, and the IRB modification was approved on November 21, 2019 (See Appendix I). Additionally, a hard copy letter was sent to teachers via their school's mailbox and sent home with students to parents asking them to participate in the survey by logging onto their school's homepage/child's school homepage to view the recruitment announcement (see Appendix J). Participants had the flexibility of completing their survey using a cell phone, laptop, desktop computer, tablet, or any electronic device that could access the online survey. The survey began with the informed consent form (see Appendix K) for participants to review before completing survey questions. The Qualtrics program works with a screen reader for any participant that may need the survey questions read aloud (Qualtrics, 2020). Two items were added to the end of each survey. First, the participants

were asked to enter their first and last names and email addresses if they wanted to be entered into a random drawing for a $50 VISA gift card. Incentives were provided for the purpose of increasing participation. The response rate tends to increase when incentives for participation are offered (Singer, 2002). One $50 VISA gift card was given to one teacher survey participant, and one $50 VISA gift card was given to one parent survey participant. Second, the participants were asked to enter their first and last names and email addresses if they wanted to participate in a focus group about growth mindset. Of the survey participants, 12 teachers and 17 parents indicated that they wanted to participate in a focus group. The survey window was open for approximately two weeks.

Qualitative

After importing and analyzing the descriptive statistics from the teacher and parent survey data, the researcher wanted, at the minimum, six teachers and six parents to participate in the focus group. The means for the scale, Fostering a Growth Mindset, were ordered from least to most and divided into four quartiles by group (i.e., teacher and parent). Two parent focus groups (i.e., low and high means) and two teacher (i.e., low and high means) focus groups were conducted. For Focus Group 1, purposive sampling was used to select two teachers with means in Quartile 1 (i.e., low). For Focus Group 2, purposive sampling was used to select three teachers with means in Quartile 4 (i.e., high). For Focus Group 3, purposive sampling was used to select six parents with means in Quartile 1 (i.e., low). For Focus Group 4, purposive sampling was used to select three parents from the elementary school grade levels with means in Quartile 4 (i.e., high). After focus group invitations were sent, one teacher from the low perspectives group, one parent from the high perspectives group, and two parents from the low perspectives group

agreed and participated in the focus groups. Due to the small percentage of individuals who agreed to participate in a focus group, the researcher purposively chose two teacher participants from Quartile 2 to participate in focus groups. Three teachers and three parents participated in the focus groups.

Audio from each of the four P-12 teacher and parent focus group sessions were recorded in the participating primary school's conference room after school hours. A sign, which stated "focus group in progress please do not enter," was placed on the door to ensure no interruptions occurred. If any individual who was not a participant in the focus group entered the room during the session, the questions stopped until that individual left the room. The informed consent form (see Appendix L) was read aloud at the beginning of each parent focus group. If a participant decided not to participate, the decision would have been noted, and the participant would have exited the session. All individuals who arrived at the four focus groups agreed to participate. Additionally, a debriefing session was provided for participants at the conclusion of each focus group (see Appendix M). The duration of the teacher and parent focus groups was approximately 60 minutes in length. Two $50 VISA gift cards served as incentives for focus group participants. Singer (2002) stated that the response rate of participants would increase if an incentive was offered. One $50 VISA gift card was given to one teacher focus group participant, and one $50 VISA gift card was given to one parent focus group participant. At the end of each focus group session, participants were asked to write their first and last names and email address on an index card if they wanted to be entered into the random drawing. The drawings occurred after the conclusion of Focus Group 4. A computer program, Rev.com, was used to transcribe the audio into text for data analysis.

The audio files and electronic transcription files were stored on a password-protected device located at the researcher's home. The paper files were stored in a secure location at the researcher's home. After 10 years, all electronic files will be deleted, and all paper files will be shredded.

Data Analysis

Quantitative

After the data were downloaded from Survey Monkey, any identification was deleted from the dataset, including IP addresses, names, and email addresses. The data were scanned to determine if there were any cases with multiple missing values. If more than 20% of the values were missing, the participant's data were removed from the data analysis (Enders, 2003; Kang, 2013). After cleaning the data, the researcher dummy coded the data for data analysis. Dummy coding is a method that represents group membership where numerical values are assigned to nominal data (Alkharusi, 2012). Dummy coding of scale items, as outlined in Table 4 for the teacher survey and in Table 5 for the parent survey, were used in SPSS to transform each nominal response into a specific numerical value (SPSS Tutorials, 2019).

Table 4

Dummy Coding for Teacher Survey

Scale	Responses	Dummy Coding
Factors Affecting Student Achievement	a. Not at all Important	a = 1
	b. Slightly Important	b = 2
	c. Moderately Important	c = 3
	d. Very Important	d = 4
	e. Extremely Important	e = 5
Teacher Perceptions of Students	a. Very Difficult	a = 1
	b. Difficult	b = 2
	c. Neither Easy nor Difficult	c = 3
	d. Easy	d = 4

Scale	Responses	Dummy Coding
	e. Very Easy	e = 5
Importance of Student Beliefs	a. Strongly Disagree	a = 1
	b. Disagree	b = 2
	c. Agree	c = 3
	d. Strongly Agree	d = 4
Familiarity with Growth Mindset	a. Not at all Familiar	a = 1
	b. Slightly Familiar	b = 2
	c. Moderately Familiar	c = 3
	d. Very Familiar	d = 4
	e. Extremely Familiar	e = 5
Fostering a Growth Mindset	a. Strongly Disagree	a = 1
	b. Disagree	b = 2
	c. Agree	c = 3
	d. Strongly Agree	d = 4
Outcomes Linked to Growth Mindset	a. Strongly Disagree	a = 1
	b. Disagree	b = 2
	c. Agree	c = 3
	d. Strongly Agree	d = 4
Preparation to Address Mindset	a. Strongly Disagree	a = 1
	b. Disagree	b = 2
	c. Agree	c = 3
	d. Strongly Agree	d = 4
Classroom Interaction	a. Never	a = 1
	b. A few times a year	b = 2
	c. A few times a month	c = 3
	d. A times a week	d = 4
	e. Every day	e = 5
Teacher Comments to Students	a. Not at all Effective	a = 1
	b. Slightly Effective	b = 2
	c. Moderately Effective	c = 3
	d. Very Effective	d = 4
	e. Extremely Effective	e = 5
Integration of Mindset into Teaching	a. Not at all Integrated	a = 1
	b. Slightly Integrated	b = 2
	c. Moderately Integrated	c = 3
	d. Very Integrated	d = 4
	e. Extremely Integrated	e = 5
Effects on Teaching and Learning	a. Strongly Disagree	a = 1
	b. Disagree	b = 2
	c. Agree	c = 3
	d. Strongly Agree	d = 4
Training Experiences	a. I have had training and want more	a = 1
	b. I have had some training and want more	b = 2
	c. I have had no training and want some	c = 3
	d. I have had no training and do not want any	d = 4

Scale	Responses	Dummy Coding
Training Topics	a. Encouraging your child to try new strategies when they are struggling to learn a concept	1 = yes 0 = no
	b. Helping your child see error or failure as an opportunity to learn and improve	1 = yes 0 = no
	c. Helping your child understand that the brain is like a muscle and physically changes with training	1 = yes 0 = no
	d. Using growth mindset with specific student groups (e.g., students with disabilities)	1 = yes 0 = no
	e. Collaborating with other parents to teach using growth mindset	1 = yes 0 = no
	f. Developing your own classroom-based assessments to capture growth mindset	1 = yes 0 = no
	g. Curriculum materials and resources to reinforce using growth mindset at home	1 = yes 0 = no
	h. Using growth mindset to reinforce standards in other academic subjects at home	1 = yes 0 = no
	i. Using growth mindset to reinforce state standards in English/language arts and literacy at home	1 = yes 0 = no
	j. Using growth mindset to teach state standards in mathematics at home	1 = yes 0 = no

Table 5

Dummy Coding for Parent Survey

Scale	Responses	Dummy Coding
Factors Affecting Student Achievement	a. Not at all Important	a = 1
	b. Slightly Important	b = 2
	c. Moderately Important	c = 3
	d. Very Important	d = 4
	e. Extremely Important	e = 5
Parent Perceptions of Students	a. Very Difficult	a = 1
	b. Difficult	b = 2
	c. Neither Easy nor Difficult	c = 3
	d. Easy	d = 4
	e. Very Easy	e = 5
Importance of Student Beliefs	a. Strongly Disagree	a = 1
	b. Disagree	b = 2
	c. Agree	c = 3
	d. Strongly Agree	d = 4
Familiarity with Growth Mindset	a. Not at all Familiar	a = 1
	b. Slightly Familiar	b = 2

Scale	Responses	Dummy Coding
	c. Moderately Familiar	c = 3
	d. Very Familiar	d = 4
	e. Extremely Familiar	e = 5
Fostering a Growth Mindset	a. Strongly Disagree	a = 1
	b. Disagree	b = 2
	c. Agree	c = 3
	d. Strongly Agree	d = 4
Outcomes Linked to Growth Mindset	a. Strongly Disagree	a = 1
	b. Disagree	b = 2
	c. Agree	c = 3
	d. Strongly Agree	d = 4
Preparation to Address Mindset	a. Strongly Disagree	a = 1
	b. Disagree	b = 2
	c. Agree	c = 3
	d. Strongly Agree	d = 4
Home Interaction	a. Never	a = 1
	b. A few times a year	b = 2
	c. A few times a month	c = 3
	d. A times a week	d = 4
	e. Every day	e = 5
Parents Comments to Students	a. Not at all Helpful	a = 1
	b. Slightly Helpful	b = 2
	c. Moderately Effective	c = 3
	d. Very Helpful	d = 4
	e. Extremely Helpful	e = 5
Integration of Mindset into Parenting	a. Not at all Integrated	a = 1
	b. Slightly Integrated	b = 2
	c. Moderately Integrated	c = 3
	d. Very Integrated	d = 4
	e. Extremely Integrated	e = 5
Effects on Parenting and Learning	a. Strongly Disagree	a = 1
	b. Disagree	b = 2
	c. Agree	c = 3
	d. Strongly Agree	d = 4
Training Experiences	a. I have had training and want more	a = 1
	b. I have had some training and want more	b = 2
	c. I have had no training and want some	c = 3
	d. I have had no training and do not want any	d = 4
Training Topics	a. Encouraging your child to try a new plan when they are struggling to learn a concept	1 = yes 0 = no
	b. Helping your child see error or failure as a chance to learn and improve	1 = yes 0 = no
	c. Helping your child know that the brain is like a muscle and physically changes with training	1 = yes 0 = no

Scale	Responses	Dummy Coding
	d. Using growth mindset with specific children (e.g., students with disabilities)	1 = yes 0 = no
	e. Talking with other parents about growth mindset	1 = yes 0 = no
	f. Curriculum materials and resources to reinforce using growth mindset at home	1 = yes 0 = no
	g. Using growth mindset to support other school subjects at home	1 = yes 0 = no
	h. Using growth mindset to support English/language arts and literacy at home	1 = yes 0 = no
	i. Using growth mindset to support mathematics at home	1 = yes 0 = no

The dummy coded data were uploaded in SPSS statistical program. The researcher summed each scale's item data. Descriptive statistics were conducted by group (i.e., teacher and parent) to answer Research Questions 1 and 2. The researcher used descriptive statistics, including the mean, standard deviation, and range, to summarize the participants' responses. The summed scores for the scale, Fostering a Growth Mindset, for the teacher and parent groups were ordered from least to most familiar and divided into four quartiles. A descriptive analysis tool known as quartiles were used to divide data ranges into four parts after ordering the data from least to most familiar with growth mindset (Goswani & Chakrabarti, 2012). Quartile 1 is the lowest 25% of the data, Quartile 2 is the 26% to 50% of the data, Quartile 3 is the 51% to 75% of the data, and Quartile 4 is the highest 25% of the data. During the descriptive analysis of this study, participants with means in the Quartile 1 were considered the low perspectives group, and participants with mean in the Quartile 4 were considered the high perspectives group. From the low perspectives group, three teachers and three parents from the elementary, middle, and high school levels were selected purposively to participate in focus groups. From the high perspectives group, three teachers and three parents from the elementary,

middle, and high school levels were selected purposively to participate in focus groups. After focus group invitations were sent, one teacher from the low perspectives group, one parent from the high perspectives group, and two parents from the low perspectives group agreed and participated in the focus groups. Due to the small percentage of individuals who agreed to participate in a focus group, the researcher purposively chose two teacher participants from Quartile 2 to participate in the focus group. Three teachers and three parents participated in the focus groups. The demographics and descriptives for the focus group participants are presented in Table 6.

Table 6

Demographics and Fostering Growth Mindset Descriptives for the Focus Group Participant

Participants	Role	Quartile	*M*	Teacher Grade Level /Parent Student(s) Grade Level
Participant 1	Teacher	Quartile 4	23.00	Grade 1
Participant 2	Parent	Quartile 4	24.00	Grades K & 1
Participant 3	Parent	Quartile 1	18.00	Grade 10
Participant 4	Parent	Quartile 1	18.00	Grade K
Participant 5	Teacher	Quartile 3	24.00	Grade K
Participant 6	Teacher	Quartile 2	19.00	Grade K

Qualitative

The researcher used the online program, Rev.com, to transcribe the focus group's audio into text. Pattern coding was used to identify themes within the focus group data to answer Research Question 3. As an implicit topic, themes are used as descriptors, elements, attributes, and concepts that enable a researcher to answer research questions by organizing a group of repeated ideas (Vaismoradi, Jones, Turunen, & Snelgrove,

2016). To obtain an extensive view of data, each theme may have subthemes as subdivisions that uncover patterns in the participants' accounts. After the comments in the focus group were transcribed, the researcher coded the responses by highlighting themes and subthemes using pattern coding. Pattern coding is defined as a researcher coding for patterns in data (Hatch, 2002). The research followed the four phases (i.e., initialization, construction, rectification, and finalization) when identifying themes (Vaismoradi et al., 2016).

In pursuit of a trustworthy study, Guba proposed four criteria that he believes qualitative researchers should consider (as cited in Shenton, 2004). The four criteria are credibility (i.e., internal validity), transferability (i.e., external validity/generalizability), dependability (i.e., reliability), and confirmability (i.e., objectivity). When addressing credibility, the researcher triangulated data by using a wide a range of informants (Shenton, 2004). Additionally, the researcher examined previous research findings concerning the study's topic to ensure congruency existed with previous empirical studies. In addition, member checking was utilized by the researcher (Birt et al., 2016). To member check, the researcher sent the transcripts back to the participants via email and asked them to check for accuracy. All participants agreed to the accuracy of the transcripts, and no revisions were made. Transferability was addressed by providing sufficient detail of background data to institute the study's context. Additionally, the researcher provided an ample amount of detail that focuses on the fieldwork's context for individuals to decide whether the current environment was similar to another context, so the reader could apply the study's findings to another setting (Shenton, 2004). The dependability criterion was addressed by providing sufficient information that would

enable future researchers to replicate the study (Shenton, 2004). Additionally, to meet the dependability criterion, the researcher used the external audit technique. Lincoln and Guba (1985) stated that the purpose of the auditor is to examine the accounts kept by the researcher and to ensure the data are represented fairly. The auditor was an associate professor at Georgia Southwestern State University. The auditor had 19 years of teaching experience. The auditor held a PhD in child and family studies and specialized in early childhood education and child development. Additionally, the auditor had a master's degree in human development. The auditor also had a bachelor's degree in English literature and foreign language. Lastly, the researcher addressed confirmability by demonstrating that the study's findings emerged from the data and not from the researcher's personal bias (Shenton, 2004). The researcher began by reviewing the transcripts three times. Next, the researcher highlighted similar thoughts that the participants shared and any information that the researcher found interesting. Participants' synonymous ideas and interesting findings were coded. Themes were created based on the clustered codes. After the researcher's coding process, a meeting was held with the external auditor for the purpose of confirming the constructs that emerged in both sets of data. The researcher and external auditor agreed to each of the themes.

Integration

The value of mixed methods can be dramatically enhanced through the integration of quantitative and qualitative data (Bryman, 2006; Creswell & Plano Clark, 2011). Creswell and Plano Clark (2011) stated that the integration occurs when data collection and data analysis are linked. Fetters, Curry, and Creswell (2013) stated that linking can

occur through the approaches of connecting, building, merging, and embedding. Integration occurred through connecting, building and merging for this study. For this study, *connecting* occurred by linking one data source to another data source through sampling (Fetters et al., 2013). The study's focus group participants were selected from the participants who completed the survey. The researcher integrated the quantitative and qualitative data at the design level by using an explanatory, sequential research design. In this design, quantitative data were collected and analyzed by the researcher during the first phase. In the next phase, the researcher used the quantitative findings to develop qualitative focus group questions, which is referred to as *building* (Fetters et al., 2013). *Merging* occurred when the researcher analyzed and compared the two databases (Fetters et al., 2013). The researcher created a table to display the integration of the descriptive statistics from the quantitative survey data and themes and codes from the qualitative focus group data.

Summary

The purpose of this explanatory, sequential research study was to compare beliefs and perceptions of growth mindset between P-12 teachers and parents. In the quantitative phase of this study, all P-12 teachers and parents from a rural, South Georgia school district were invited to participate in a survey about growth mindset. The survey data were analyzed by group (i.e., teacher and parent) using descriptive statistics. In addition, the summarized quantitative data were used to select focus group participants and to develop focus group questions during the qualitative phase. After transcription, pattern coding was utilized to identify themes and subthemes. The integration of quantitative and qualitative data occurred through connecting, building, and merging (Fetters et al., 2013).

CHAPTER IV

RESULTS

Introduction

A problem in education exists with the false growth mindsets that have been and continue to be spread amongst educational entities and organizations worldwide (Stanford MCHRI, 2018). This study addressed the gap in literature focused on the exposure levels and usage associated with growth mindset theory and practices by teachers and parents. The purpose of this explanatory, sequential mixed methods research study was to compare beliefs and perceptions of growth mindset between P-12 teachers and parents. This chapter consists of information regarding the participants and findings related to each quantitative and qualitative research question.

Participants

The study was conducted in a public P-12 Title 1 school district located in a rural, South Georgia community. In the quantitative phase of this study, all P-12 teachers and parents were invited to participate in a survey. The data contained 54 valid cases for teacher participants out of 324 teachers in the district, which yielded a 17% response rate. The parent response rate could not be calculated from the 32 valid cases for parent participants due to the unknown number of parents within the district. Table 7 presents the number of teacher and parent participants by grade level. Some teacher participants taught more than one grade level. Out of the 32 parent participants, nine parents had students who were enrolled in more than one grade level. One parent opted out of the

survey. The majority of the teacher and parent survey participants were from the elementary grade levels. Based on the quantitative survey responses, 12 teachers and 17 parents indicated an interest in participating in a focus group. After importing and analyzing the descriptive statistics from the teacher and parent survey data, the researcher wanted six teachers and six parents to participate in the focus group; however, only three parents and three teachers agreed to participate.

Table 7

Frequencies and Percentages of Grade Levels by Group

	Teachers		Parents	
Grade Level	*n*	%	*n*	%
Pre-K	8	11.4%	3	6.0%
Grade K	12	17.1%	9	18.0%
Grade 1	11	15.7%	7	14.0%
Grade 2	7	10.0%	4	8.0%
Grade 3	4	5.7%	2	4.0%
Grade 4	1	1.4%	2	4.0%
Grade 5	0	0.0%	0	0.0%
Grade 6	0	0.0%	6	12.0%
Grade 7	4	5.7%	2	4.0%
Grade 8	4	5.7%	4	8.0%
Grade 9	3	4.3%	5	10.0%
Grade 10	5	7.1%	4	8.0%
Grade 11	6	8.6%	0	0.0%
Grade 12	5	7.1%	2	4.0%
Total	70	100.0%	50	100.00

Note. Some teacher and parent participants had children in more than one grade level.

Findings

Research Question 1

In regard to identifying teacher beliefs related to growth mindsets, the following research question was investigated: What are the beliefs of teachers related to growth mindsets?

Factors affecting student achievement. Teacher participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale, where 1 represented *Not at all Important* and 5 represented *Extremely Important*. The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including the mean, standard deviation, and range, were conducted to summarize the teacher participants' responses for the scale, Factors Affecting Student Achievement. Based on the overall scale, the results indicated that the factors were *Very Important* based on the participants' responses. The sum mean was 40.49 with a standard deviation of 4.06 within a range of 9 (low) to 45 (high).

In Table 8, a high number of *Very Important* and *Extremely Important* ratings occurred pertaining to factors associated with affecting students' achievement. Within the scale, 74.1% of the teacher participants felt that school safety was an *Extremely Important* factor that affected student achievement. The school discipline policies item was rated *Extremely Important* by 68.5% of the teacher participants. The lowest levels of importance existed in the items for family background and use of growth mindsets with students. For family background, 42.6% of the teacher participants felt that the item was *Not at All Important*, *Slightly Important*, or *Moderately Important*. For use of growth mindsets with students, 13.0% of the teacher participants rated the item as *Moderately Important*.

Table 8

Frequencies and Percentage for Factors Affecting Student Achievement Scale for the Teacher Group

Item	No Response *n* (%)	Not at all Important *n* (%)	Slightly Important *n* (%)	Moderately Important *n* (%)	Very Important *n* (%)	Extremely Important *n* (%)	Total *n* (%)
Student engagement and motivation	1 (1.8%)	0 (0.0%)	0 (0.0%)	1 (1.9%)	16 (29.6%)	36 (66.7%)	54 (100.0%)
Teaching quality	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.9%)	19 (35.2%)	34 (63.0%)	54 (100.0%)
School Climate	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (7.4%)	19 (35.2%)	31 (57.4%)	54 (100.0%)
School Safety	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	14 (25.9%)	40 (74.1%)	54 (100.0%)
Social and Emotional Learning	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	18 (33.3%)	36 (66.7%)	54 (100.0%)
Parental Support and Engagement	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (5.6%)	17 (31.5%)	34 (63.0%)	54 (100.0%)
Use of growth mindsets with students	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (13.0%)	21 (38.9%)	26 (48.1%)	54 (100.0%)
School discipline policies	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.9%)	16 (29.6%)	37 (68.5%)	54 (100.0%)
Family Background	0 (0.0%)	4 (7.4%)	4 (7.4%)	15 (27.8%)	15 (27.8%)	16 (29.6%)	54 (100.0%)

Teacher perceptions of students. The teacher participants were asked to rate the ease or difficulty of teaching students with specific mindsets and characteristics using a five-point scale, where 1 represented *Very Difficult* and 5 represented *Very Easy*. The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall scale,

Teachers Perceptions of Students, the results indicated that most teacher participants felt that teaching students with mostly growth mindset characteristics was easy. The sum mean was 15.13 with a standard deviation of 2.60 within a range of 4 (low) to 20 (high).

In Table 9, a high number of *Easy* and *Very Easy* ratings occurred pertaining to teaching students with the specific mindsets and characteristics (i.e., grit and perseverance, malleable intelligence, and innate ability); 77.7 % of the teacher participants felt that teaching students with the characteristics of grit and perseverance was *Easy* or *Very Easy*. Additionally, 68.5% of the teacher participants felt that teaching students with the belief that intelligence was malleable was *Easy* or *Very Easy*. The lowest levels of ratings existed in the characteristic, innate ability in the subject that you teach, and the belief that intelligence was fixed. For "Have innate ability in the subject you teach," 22.2% of the teacher participants rated the process of teaching these students as *Difficult* or *Neither Easy Nor Difficult*. For the "belief that intelligence is fixed or static," 70.4% of the teacher participants rated the process of teaching students as *Very Difficult, Difficult,* or *Neither Easy Nor Difficult*.

Table 9

Frequencies and Percentages for the Teacher Perceptions of Students Scale Items

	Very Difficult	Difficult	Neither Easy Nor Difficult	Easy	Very Easy	Total
Item	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
Have grit and perseverance.	0 (0.0%)	2 (3.7%)	10 (18.5%)	20 (37.0%)	22 (40.7%)	54 (100%)
Believe that intelligence is malleable.	0 (0.0%)	3 (5.6%)	14 (25.9%)	21 (38.9%)	16 (29.6%)	54 (100%)

Item	Very Difficult *n* (%)	Difficult *n* (%)	Neither Easy Nor Difficult *n* (%)	Easy *n* (%)	Very Easy *n* (%)	Total *n* (%)
Have innate ability in the subject you teach.	0 (0.0%)	4 (7.4%)	8 (14.8%)	19 (35.2%)	23 (42.6%)	54 (100%)
Believe that intelligence is fixed or static.	4 (7.4%)	13 (24.1%)	21 (38.9%)	15 (27.8%)	2 (1.9%)	54 (100%)

Importance of student beliefs. Teacher participants were asked to rate their level of agreement for 11 different student beliefs or attitudes that were important to school success using a four-point response scale, where 1 represented *Strongly Disagree* and 4 represented *Strongly Agree*. The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. For the Importance of Student Beliefs Scale, descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the teacher responses. Based on the overall scale, Importance of Student Beliefs, the results indicated that the teacher participants had a moderate to high level of agreement for the 11 different student beliefs or attitudes that were important to school success. The sum mean was 37.85 with a standard deviation of 4.06 within a range of 11 (low) to 44 (high).

In Table 10, a high number of *Agree* and *Strongly Agree* ratings occurred that were associated with the level of agreement of the different student beliefs or attitudes that were important to school success. With the item, "They can find help at school when they have difficulties," 100% of the teacher participants felt that the student belief was important to school success by choosing a rating of *Agree* or *Strongly Agree*. Additionally, 98.2 % of the teacher participants felt that the student attitude, "They belong in the school community," was important to school success by choosing a rating

of *Agree* or *Strongly Agree*. The lowest levels of importance existed in the student beliefs and attitudes, "They have some autonomy and choice in the topics they study" and "Administrators and teachers know students personally." Approximately one-fifth of the teacher participants selected a rating of *Disagree or Strongly Disagree* to indicate that the student belief, "They have some autonomy and choice in the topics they study," was not important to school success. Slightly more than 10% of the teacher participants selected the rating of *Disagree* for the student belief, "Administrators and teachers know students personally," to indicate that the belief was not important to school success.

Table 10

Frequencies and Percentages for Importance of Student Beliefs Items for the Teacher Group

Item	No Response *n* (%)	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
They can learn from failure and are willing to try new things in school.	0 (0.0%)	1 (1.9%)	3 (5.6%)	20 (37.0%)	30 (55.6%)	54 (100.0%)
They can find help at school when they have difficulties.	0 (0.0%)	0 (0.0%)	0 (0.0%)	24 (44.4%)	30 (55.6%)	54 (100.0%)
Their work in school has value for them	0 (0.0%)	1 (1.9%)	3 (5.6%)	19 (35.2%)	31 (57.4%)	54 (100.0%)
They can be successful in school.	0 (0.0%)	1 (1.9%)	1 (1.9%)	23 (42.6%)	29 (53.7%)	54 (100.0%)
They belong in the school community	0 (0.0%)	1 (1.9%)	0 (0.0%)	23 (42.6%)	30 (55.6%)	54 (100.0%)
Administrators and teachers know students personally.	0 (0.0%)	0 (0.0%)	6 (11.1%)	22 (40.7%)	26 (48.1%)	54 (100.0%)
Their academic abilities will increase through effort.	1 (1.7%)	1 (1.9%)	1 (1.9%)	19 (35.2%)	32 (59.3%)	54 (100.0%)
They have the ability to learn challenging material.	0 (0.0%)	1 (1.9%)	3 (5.6%)	22 (40.7%)	28 (51.9%)	54 (100.0%)

Item	No Response *n* (%)	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
Administrators and teachers will treat all students equally and fairly.	0 (0.0%)	2 (3.7%)	3 (5.6%)	21 (38.9%)	28 (51.9%)	54 (100.0%)
They have some autonomy and choice in the topics they study.	0 (0.0%)	3 (5.6%)	8 (14.8%)	23 (42.6%)	20 (37.0%)	54 (100.0%)
Doing well in school will lead to a good career.	1 (1.9%)	3 (5.6%)	2 (3.7%)	22 (40.7%)	26 (48.1%)	54 (100.0%)

Familiarity with growth mindset. Teacher participants were asked to rate their familiarity with growth mindset using a five-point scale, where 1 represented *Not at all Familiar* and 5 represented *Very Familiar*. The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including the mean, standard deviation, and range, were conducted to summarize the teacher responses. Based on the overall Familiarity with Growth Mindset Scale, the results indicated a moderate to high level of familiarity. The sum mean was 10.87 with a standard deviation of 2.66 within a range of 3 (low) to 15 (high).

As shown in Table 11, 59.3% of the teacher participants felt that they personally were *Very Familiar* or *Extremely Familiar* with growth mindset. Additionally, 57.4% of the teacher participants believed that administrators at their schools were familiar with growth mindset. Regarding familiarity, 40.8% of the teacher participants felt that they personally were *Not at All Familiar*, *Slightly Familiar*, or *Moderately Familiar* with growth mindsets. Furthermore, 42.6% of the teacher participants felt that the administrators in their schools were *Not at All Familiar*, *Slightly Familiar*, or *Moderately Familiar* with growth mindsets. Additionally, 55% of the teacher participants felt that

teachers in their school were *Not at All Familiar*, *Slightly Familiar*, or *Moderately Familiar* with growth mindsets.

Table 11

Frequencies and Percentages for Familiarity with Growth Mindset Items for the Teacher Group

Item	Not at all Familiar *n* (%)	Slightly Familiar *n* (%)	Moderately Familiar *n* (%)	Very Familiar *n* (%)	Extremely Familiar *n* (%)	Total *n* (%)
You personally	2 (3.7%)	3 (5.6%)	17 (31.5%)	17 (31.5%)	15 (27.8%)	54 (100%)
Administrators in your school	2 (3.7%)	6 (11.1%)	15 (27.8%)	19 (35.2%)	12 (22.2%)	54 (100%)
Teachers in your school	1 (1.9%)	3 (5.6%)	26 (48.1%)	15 (27.8%)	9 (16.7%)	54 (100%)

Fostering a growth mindset. The teacher participants were asked to rate their level of agreement with certain student behaviors and outcomes that were related to a student's growth mindset where 1 represented *Strongly Disagree* and 4 represented *Strongly Agree.* The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Based on the Fostering a Growth Mindset Scale, the results indicated a moderate to high level of agreement. The sum mean was 19.29 with a standard deviation of 3.26 within a range of 6 (low) to 24 (high).

In Table 12, a high number of *Agree* and *Strongly Agree* ratings occurred related to a student's growth mindset. With the item, "All students can and should have a growth mindset," 98% of the teacher participants selected *Agree* or *Strongly Agree*. Furthermore, 92% of the teacher participants chose *Agree* or *Strongly Agree* for the item, "Fostering a growth mindset in students is part of my job duties and responsibilities." The lowest levels of agreement existed with the items, "Administrators at my school are good at fostering a growth mindset in students" and "I have adequate solutions and strategies to

use when students do not have a growth mindset." With the item, "Administrators at my school are good at fostering a growth mindset in students," 16 % of the teacher participants selected a rating of *Disagree* or *Strongly Disagree*. With the item, "I have adequate solutions and strategies to use when students do not have a growth mindset," 15% of the teacher participants selected *Disagree* or *Strongly Disagree*.

Table 12

Frequencies and Percentages for Fostering a Growth Mindset Items for the Teachers Group

Item	No Response *n* (%)	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
All students can and should have a growth mindset.	0 (0.0%)	1 (1.9%)	0 (0%)	26 (48.1%)	27 (50.0%)	54 (100.0%)
Fostering a growth mindset in students is part of my job duties and responsibilities.	2 (3.7%)	1 (1.9%)	1 (1.9%)	24 (44.4%)	26 (48.1%)	54 (100.0%)
I am good at fostering a growth mindset in my students.	0 (0.0%)	1 (1.9%)	5 (9.3%)	31 (57.4%)	17 (31.5%)	54 (100.0%)
Administrators at my school are good at fostering a growth mindset in students.	0 (0.0%)	2 (3.7%)	6 (11.1%)	33 (61.1%)	12 (62.3%)	54 (100.0%)
Other teachers at my school are good at fostering a growth mindset in students.	0 (0.0%)	1 (1.9%)	6 (11.1%)	34 (63.0%)	12 (22.2%)	54 (100.0%)
I have adequate solutions and strategies to use when students do not have a growth mindset.	1 (1.9%)	1 (1.9%)	7 (13.0%)	34 (63.0%)	11 (20.4%)	54 (100.0%)

Outcomes linked to growth mindset. The teacher respondents were asked to rate their level of agreement with certain student behaviors and outcomes that were associated with a student's growth mindset using a four-point scale, where 1 represented *Strongly Disagree* and 4 represented *Strongly Agree.* The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including the mean, standard deviation, and range, were conducted to summarize the teacher responses. Based on the overall Outcomes Linked to a Growth Mindset Scale, the results indicated a high level of agreement. The sum mean was 31.2 with a standard deviation of 3.71 within a range of 9 (low) to 36 (high).

In Table 13, a high number of *Agree* and *Strongly Agree* ratings occurred regarding the behaviors and outcomes associated with students' growth mindsets; 64.8% of the teacher participants believed that good attendance was associated with students' growth mindsets. Additionally, 61.1% of the teacher participants felt that persistence in school work and high levels of effort on school work were associated with students' growth mindsets. The lowest levels of agreement existed with high standardized testing and frequent participation in extracurricular activities. With the outcome, high standardized testing, 18.5% of the teacher participants selected the rating of *Disagree*. With the behavior, frequent participation in extracurricular activities, 11.1% of the teacher participants selected *Disagree*, regarding its link to growth mindset.

Table 13

Frequencies and Percentages for Outcomes Linked to Growth Mindset Items for the Teacher Group

Item	No Response *n* (%)	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
Excitement about learning	1 (1.9%)	0 (0.0%)	0 (0.0%)	21 (38.9%)	32 (59.3%)	54 (100.0%)
Persistence in school work	1 (1.9%)	0 (0.0%)	0 (0.0%)	20 (37.0%)	33 (61.1%)	54 (100.0%)
High levels of effort on school work	1 (1.9%)	0 (0%)	1 (1.9%)	19 (35.2%)	33 (61.1%)	54 (100.0%)
Frequent participation in class discussions	0 (0.0%)	0 (0.0%)	1 (1.9%)	21 (38.9%)	32 (59.3%)	54 (100.0%)
Good attendance	1 (1.9%)	0 (0.0%)	1 (1.9%)	17 (31.5%)	35 (64.8%)	54 (100.0%)
Consistent completion of homework assignments	1 (1.9%)	0 (0.0%)	2 (3.7%)	25 (46.3%)	26 (48.1%)	54 (100.0%)
Frequent participation in extracurricular activities	0 (0.0%)	0 (0.0%)	6 (11.1%)	28 (51.9%)	20 (37.0%)	54 (100.0%)
Good course grades	1 (1.9%)	0 (0.0%)	3 (5.6%)	32 (59.3%)	18 (33.3%)	54 (100.0%)
High standardized testing	0 (0.0%)	0 (0.0%)	10 (18.5%)	28 (51.9%)	16 (29.6%)	54 (100.0%)

Preparation to address growth mindset. The teacher participants were asked to rate their level of agreement with two sources of professional development (i.e., pre-service and in-service) and training using a four-point scale, where 1 represented *Strongly Disagree* and 4 represented *Strongly Agree.* Based on the overall Preparation to Address Mindset Scale, the results indicated that the participants' preparation was minimal to moderate. Regarding in-service training and professional development, the mean of the teacher participants' responses was 2.97 with a standard deviation of 0.77. Regarding pre-service training, the mean of the teacher participants' responses was a mean of 2.80 with a standard deviation of 0.85.

In Table 14, 72.2% of the teacher participants selected either *Agree* or *Strongly Agree* regarding in-service training and professional development. According to the data, 33% of the teacher participants chose a rating of *Disagree* or *Strongly Disagree* pertaining to their pre-service training to address growth mindsets.

Table 14

Frequencies and Percentages for Preparation to Address Mindsets Items for the Teacher Group

Item	No Response *n* (%)	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
Pre-service training	2 (3.7%)	4 (7.4%)	14 (25.9%)	24 (44.4%)	10 (18.5%)	54 (100.0%)
In-service training and professional development	3 (5.6%)	2 (3.7%)	10 (18.5%)	27 (50.0%)	12 (22.2%)	54 (100.0%)

Classroom interaction. The teacher participants were asked to rate how frequently they engaged in nine different practices using a five-point scale, where 1 represented *Never* and 5 represented *Every Day*. In the scale, five items were practices that fostered a growth mindset, and four items were practices that did not foster growth mindsets. The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Based on the overall Classroom Interaction (Foster Growth Mindset), the results indicated a high frequency rate for the use of practices that foster a growth mindset. The sum mean was 23.0 with a standard deviation of 2.39 within a range of 5 (low) to 25 (high). Additionally, for the overall Classroom Interaction (Did Not Foster Growth Mindset), the results indicated a high frequency rate for the use of practices that impeded upon fostering a growth mindset. The sum mean was 17.31 with a standard deviation of 2.76 within a range of 5 (low) to 20 (high).

In Table 15, a high number of *A Few Times a Week* and *Every Day* frequencies were designated regarding Classroom Interaction (Foster Growth Mindset) practices. With the item, "Praising students for their effort," 98.1% of the teacher participants selected a frequency of *A Few Times a Week* or *Every Day*. Additionally, 94.5% of the teacher participants selected a frequency of *A Few Times a Week* or *Every Day* with the item, "Praising students for learning strategies." The lowest levels of practices associated with Classroom Interaction (Foster Growth Mindset) were the items, "Suggesting that students seek help from other students on schoolwork" and "Encouraging students to try new strategies when they are struggling." With the item, "Suggesting that students seek help from other students on schoolwork," 16.7% of the teacher participants chose a frequency of *Never* or *A Few Times a Month*. With the item, "Encouraging students to try new strategies when they are struggling," 11.1% of the teacher participants selected a frequency of *A Few Times a Month*.

In Table 15, a high number of *A Few Times a Week* and *Everyday* frequencies were designated regarding Classroom Interaction (Did Not Foster Growth Mindset) practices. With the item, "Encouraging students who are already doing well to keep trying to improve," 98.2% of the teacher participants chose a frequency of A *Few Times a Week* or *Every Day*. Additionally, 92.6% of the teacher participants selected a frequency of *A Few Times a Week* or *Every Day* for the practice, "Praising students for their intelligence." The lowest levels of practices associated with Classroom Interaction (Did Not Foster Growth Mindset) existed among the items, "Telling students that it is alright to struggle, not everyone is good at a given subject" and "Encouraging students by

telling them a new topic will be easy to learn" with 9.3% of the teacher participants selecting a frequency of *Never* or *A Few Times a Year* for both items.

Table 15

Frequencies and Percentages for Classroom Interaction for the Teacher Group

Item	Never	A Few Times a Year	A Few Times a Month	A Few Times a Week	Every Day	Total
	n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
*Encouraging students to try new strategies when they are struggling.	0 (0.0%)	0 (0.0%)	6 (11.1%)	15 (27.8%)	33 (61.1%)	54 (100.0%)
*Praising students for their learning strategies.	0 (0.0%)	0 (0.0%)	3 (5.6%)	7 (13.0%)	44 (81.5%)	54 (100.0%)
*Suggesting that students seek help from other students on schoolwork.	3 (5.6%)	0 (0.0%)	6 (11.1%)	21 (38.9%)	24 (44.4%)	54 (100.0%)
Telling students that it is alright to struggle, not everyone is good at a given subject.	4 (7.4%)	1 (1.9%)	6 (11.1%)	21 (38.9%)	24 (44.4%)	54 (100.0%)
Praising students for their intelligence.	1 (1.9%)	0 (0.0%)	3 (5.6%)	12 (22.2%)	38 (70.4%)	54 (100.0%)
*Praising students for their effort.	0 (0.0%)	0 (0.0%)	1 (1.9%)	6 (11.1%)	47 (87.0%)	54 (100.0%)
*Encouraging students who are already doing well to keep trying to improve.	0 (0.0%)	0 (0.0%)	1 (1.9%)	13 (24.1%)	40 (74.1%)	54 (100.0%)
Praising students for earning good scores or grades.	0 (0.0%)	0 (0.0%)	5 (9.3%)	17 (31.5%)	32 (59.3%)	54 (100.0%)
Encouraging students by telling them a new topic will be easy to learn.	5 (9.3%)	0 (0.0%)	8 (14.8%)	12 (22.2%)	29 (53.7%)	54 (100.0%)

Note. All items with an asterisk (*) are indicative of growth mindset practices.

Teacher comments to students. The teacher participants were asked to rate seven comments regarding its effectiveness to encourage the students to learn with a growth mindset using a five-point scale, where 1 represented *Not at all Effective* and 5 represented *Extremely Effective*. Four of the comments fostered a growth mindset, and three of the comments did not foster a growth mindset. The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall Teacher Comments to Students (Fostered Growth Mindset) Subscale, the teacher participants felt that the comments had a high level of effectiveness. The sum mean was 16.58 with a standard deviation of 3.03 within a range of 4 (low) to 20 (high). For Teacher Comments to Students (Did not Foster Growth Mindset) Subscale, the teacher participants felt that the comments had a high level of effectiveness. The sum mean was 14.43 with a standard deviation of 4.11 within a range of 3 (low) to 15 (high). These results reflected the false growth mindset issue in education because the teacher participants felt that the practices that do not foster growth mindsets were effective.

In Table 16, Teacher Comments to Students (Foster Growth Mindset) Subscale had a high number of *Very Effective* and *Extremely Effective* ratings pertaining to comments that fostered and did not foster a growth mindset. For comments that fostered a growth mindset, such as "I really like the way you tried all kinds of strategies on that problem until you finally got it," 85.1% of the teacher participants selected a rating of *Very Effective* or *Extremely Effective*. Additionally, the comment, "You really studied for your test and your improvement was rated," was rated as *Very Effective* or *Extremely*

Effective by 81.4% of the teacher participants. The lowest levels of effectiveness ratings in comments that fostered a growth mindset were found with comments, such as "I love how you stayed at your desk and kept your concentration in order to keep working on that problem" and "Great job. You must have worked really hard on this." The comment, "I love how you stayed at your desk and kept your concentration in order to keep working on that problem," was rated by 27.8% of the teacher participants as *Slightly Effective* or *Moderately Effective*. With the comment, "Great job. You must have worked really hard on this," 22.2% of the teacher participants felt that the comment was *Not at all Effective*, *Slightly Effective*, or *Moderately Effective*. For comments that did not foster a growth mindset, such as "See, you are good at this subject. You got an A on your last test," 62.9% of participants selected a rating of *Very Effective* or *Extremely Effective*. Additionally, in the item, "Look how smart you are," 59.3% of the teacher participants rated the comment as *Very Effective* or *Extremely Effective*. The lowest levels of effectiveness ratings in comments that did not foster a growth mindset existed with comments, such as "You are one of the top students in the class" and "This is easy, you will get this in no time." The comment, "You are one of the top students in the class," was rated by 50.0% of the teacher participants as *Not at all Effective, Slightly Effective*, or *Moderately Effective*. With the comment, "This is easy, you will get this in no time," 44.5% of the teacher participants felt that the comment was *Not at all Effective, Slightly Effective,* or *Moderately Effective*. These results illustrated the false growth mindset issue in education because the teacher participants felt that the comments that do not foster a growth mindset were effective.

Table 16

Frequencies and Percentages for Teacher Comments to Students Items

Item	No Response *n* (%)	Not at all Effective *n* (%)	Slightly Effective *n* (%)	Moderately Effective *n* (%)	Very Effective *n* (%)	Extremely Effective *n* (%)	Total *n* (%)
*I love how you stayed at your desk and kept your concentration in order to keep working on that problem.	0 (0.0%)	0 (0.0%)	3 (5.6%)	12 (22.2%)	19 (35.2%)	20 (37.0%)	54 (100.0%)
*Great job. You must have worked really hard on this	1 (1.9%)	2 (3.7%)	2 (3.7%)	8 (14.8%)	20 (37.0%)	21 (38.9%)	54 (100.0%)
See, you are good at this subject. You got an A on your last test.	0 (0.0%)	0 (0.0%)	5 (9.3%)	15 (27.8%)	20 (37.0%)	14 (25.9%)	54 (100.0%)
*I really like the way you tried all kinds of strategies on that problem until you finally got it.	0 (0.0%)	0 (0.0%)	1 (1.9%)	7 (13.0%)	22 (40.7%)	24 (44.4%)	54 (100.0%)
*You really studied for your test and your improvement shows it.	1 (1.9%)	0 (0.0%)	1 (1.9%)	8 (14.8%)	24 (44.4%)	20 (37.0%)	54 (100.0%)
You are one of the top students in the class.	0 (0.0%)	4 (7.4%)	6 (11.1%)	17 (31.5%)	12 (22.2%)	15 (27.8%)	54 (100.0%)
*This is easy, you will get this in no time.	0 (0.0%)	5 (9.3%)	8 (14.8%)	11 (20.4%)	17 (31.5%)	13 (24.1%)	54 (100.0%)
Look at how smart you are.	0 (0.0%)	4 (7.4%)	4 (7.4%)	14 (25.9%)	17 (31.5%)	15 (27.8%)	54 (100.0%)

Note. All items with an asterisk (*) are indicative of growth mindset comments.

Integration of growth mindset into teaching. The teacher participants were asked to rate the extent to which they had integrated the concept of students' growth mindset into their teaching expectations and practices where 1 represented *Not at all Integrated* and 5 represented *Extremely Integrated*. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the integration of mindset into teaching item, the results indicated a low to moderate level of integration. The mean was 3.43 with a standard deviation of 0.96 within a range of (low) to 5 (high). In Table 17, 51.9% of the teacher participants chose a rating of *Not at All Integrated*, *Slightly Integrated*, or *Moderately Integrated*.

Table 17

Frequencies and Percentages for Integration of Mindset into Teaching Item

	Not at all Integrated	Slightly Integrated	Moderately Integrated	Very Integrated	Extremely Integrated	Total
Item	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
To what extent have you integrated growth mindset into your teaching expectations and practice?	1 (1.9%)	8 (14.8%)	19 (35.2%)	19 (35.2%)	7 (13.0%)	54 (100.0%)

Effect on teaching and learning. The teacher participants were asked to rate their level of agreement with student outcomes that were associated with integrating growth mindset where 1 represented *Strongly Disagree* and 4 represented *Strongly Agree.* The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall Effects on Teaching and Learning Scale, the results indicated that the level of agreement with

student outcomes associated with integrating growth mindset was moderate to high. The sum mean was 23.61 with a standard deviation of 3.78 within a range of 7 (low) to 28 (high).

In Table 18, a high number of *Agree* and *Strongly Agree* ratings occurred related to participants' level of agreement with student outcomes associated with integrating growth mindset. With the outcome of improving student learning, 100% of the teacher participants who responded selected a rating of *Agree* or *Strongly Agree*. The outcome of improving instruction and classroom practice also had high percentage of *Agree* and *Strongly Agree* ratings (i.e., 94.4%). The lowest levels of agreement existed with the three outcomes or behaviors, "Significantly change my classroom instruction," "Grappling with standardized testing and assessment policies," and "Addressing resistance from school administrators." With each of these outcomes or behaviors, 11.1% of the teacher participants selected the rating of *Disagree* regarding the effect of that outcome or behavior on teaching and learning.

Table 18

Frequencies and Percentages for Effect on Teaching and Learning Items for the Teacher Group

Item	No Response *n* (%)	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
Improve student learning.	2 (3.7%)	0 (0.0%)	0 (0.0%)	24 (44.4%)	28 (51.9%)	54 (100.0%)
Improve my own instruction and classroom practice.	2 (3.7%)	0 (0.0%)	1 (1.9%)	22 (40.7%)	29 (53.7%)	54 (100.0%)
Significantly change my classroom instruction.	3 (5.6%)	0 (0.0%)	6 (11.1%)	22 (40.7%)	23 (42.6%)	54 (100.0%)

Item	No Response *n* (%)	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
Connecting with students facing economic, family, or personal challenges.	2 (3.7%)	0 (0%)	4 (7.4%)	24 (44.4%)	24 (44.4%)	54 (100.0%)
Convincing fellow teachers to implement a growth mindset in their classrooms.	2 (3.7%)	0 (0.0%)	3 (5.6%)	27 (50.0%)	22 (40.7%)	54 (100.0%)
Grappling with standardized testing and assessment policies.	2 (3.7%)	0 (0.0%)	6 (11.1%)	27 (50.0%)	19 (35.2%)	54 (100.0%)
Addressing resistance from school administrators.	2 (3.7%)	0 (0.0%)	6 (11.1%)	28 (51.9%)	18 (33.3%)	54 (100.0%)

Summary of scale descriptives. Table 19 presents a summary of descriptive statistics. The table includes the number of teacher participants who completed the scale, mean of teacher participant responses or sums, standard deviation, minimum response or sum, and maximum response or sum.

Table 19

Descriptives for All Scales for the Teacher Group

Scale	*N*	*M*	*SD*	*min*	*max*
Factors Affecting Student Achievement	53	40.50	4.06	31	45
Teacher Perceptions of Students	54	15.13	2.60	8	20
Importance of Student Beliefs	52	37.85	6.21	16	44
Familiarity with Growth Mindset	54	10.87	2.66	5	15

Scale	*N*	*M*	*SD*	*min*	*max*
Fostering a Growth Mindset	52	19.29	3.26	6	24
Outcomes Linked to a Growth Mindset	50	31.20	3.71	24	36
Preparation to Address Mindset (Pre-service)	52	2.80	0.85	1	4
Preparation to Address Mindset (In-service)	51	2.97	0.77	1	4
Classroom Interaction (Fostered Growth Mindset)	54	23.0	2.39	17	25
Classroom Interaction (Did not Foster Growth Mindset)	54	17.31	2.76	10	20
Teacher Comments to Students (Fostered Growth Mindset)	54	16.58	3.03	8	20
Teacher Comments to Students (Did not Foster Growth Mindset)	54	14.43	4.11	5	20
Integration of Mindset into Teaching	54	3.43	0.96	1	5
Effects on Teaching and Learning	51	23.61	3.78	15	28

Professional development. The teacher participants were asked to rate their level of experience with professional development and training related to growth mindset using a four-point scale, where 1 represented *I have had some training and want more,* 2 represented *I have had some training and do not want more,* 3 represented *I have had no training and want some,* and 4 represented *I have had no training and do not want any*. Frequencies were used to determine each participants' growth mindset training experience. As detailed in Table 20, out of the 54 teacher participants, over half of the

teacher participants (n = 35) indicated that they have had training and would like more. Ten of the participants indicated that they had no training and wanted some. Based on the responses, 45 out of 54 participants were interested in more growth mindset training. Out of 54 participants, nine individuals were not interested in growth mindset training.

Table 20

Frequency and Percentages of Training Experiences for the Teacher Group

Response	*n*	%
I have had some training and I want some more.	35	64.8
I have had some training and I do not want more.	7	13.0
I have had no training and want some.	10	18.5
I have had no training and do not want any.	2	3.7
Total	54	100.0

Training topics. The teacher participants were asked to select which of the topics listed in Table 21 were addressed in previous training and professional development on growth mindset. According to the responses, a moderate to high percentage of the teacher participants received training or professional development regarding the topics of "Encouraging students to try new strategies when they are struggling to learn a concept" and "Helping students see error or failure as an opportunity to learn and improve." Out of 54 teacher participants, 74.1% of the teacher participants received training on encouraging students to try new strategies when they are struggling to learn a concept, and 64.8% of the teacher participants received training on helping students see error or failure as an opportunity to learn and improve. The lowest levels of training and professional development existed with the topics of "Using growth mindset to teach state standards in English/language arts and literacy" and "Using growth mindset to teach state

standards in mathematics." Out of 54 teacher participants, 79.6 % of the teacher participants received no training on using growth mindset to teach state standards in English/language arts and literacy, and 77.8% of the teacher participants received no training on using growth mindset to teach state standards in mathematics.

Table 21

Frequency and Percentage of Training Topics from the Teacher Group

	No		Yes	
Item	*n*	%	*n*	%
Encouraging students to try new strategies when they are struggling to learn a concept.	14	25.9	40	74.1
Helping students see error or failure as an opportunity to learn and improve.	19	35.2	35	64.8
Helping students understand that the brain is like a muscle and physically changes with training.	38	70.4	16	29.6
Using growth mindset with specific student groups (e.g., students with disabilities).	36	66.7	18	33.3
Collaborating with colleagues to teach using growth mindset.	27	50.0	27	50.0
Developing your own classroom-based assessments to capture growth mindset.	40	74.1	14	25.9
Curriculum materials and resources to teach using growth mindset.	33	61.6	21	38.9
Using growth mindset to teach standards in other academic subjects.	38	70.4	16	29.6
Using growth mindset to teach state standards in English/language arts and literacy.	43	79.6	11	20.4
Using growth mindset to teach state standards in mathematics.	42	77.8	12	22.2

Research Question 2

In regard to identifying parent beliefs related to growth mindsets, the following research question was investigated. What are the beliefs of parents related to growth mindsets?

Factors affecting student achievement. The parent participants were asked to rate the importance of a variety of factors to student achievement where 1 represented *Not at all Important* and 5 represented *Extremely Important*. The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall Factors Affecting Student Achievement Scale, the results indicated that the factors were *Very Important*. The sum mean was 41.03 with a standard deviation of 4.0 within a range of 9 (low) to 45 (high).

In Table 22, a high number of *Very Important* and *Extremely Important* ratings occurred pertaining to factors associated with affecting students' achievement. Based on the data, 75.0% of the parent participants believed that parental support and effort was an *Extremely Important* factor that affected student achievement. Teaching quality was rated *Extremely Important* by 68.8% of the parent participants. The lowest levels of importance were found with the items of family background, school climate, school safety, and social and emotional learning. For family background, 12.5% of the parent participants felt that the item was *Not at All Important, Slightly Important*, or *Moderately Important*. For school climate, school safety, and social and emotional learning, 9.4% of the parent participants selected a rating of *Not at All Important, Slightly Important*, or *Moderately Important*.

Table 22

Frequencies and Percentages for Factors Affecting Student Achievement Items for the Parent Group

Item	Not at all Important *n* (%)	Slightly Important *n* (%)	Moderately Important *n* (%)	Very Important *n* (%)	Extremely Important *n* (%)	Total *n* (%)
Student effort and goals	1 (3.1%)	0 (0.0%)	0 (0.0%)	13 (40.6%)	18 (56.3%)	32 (100.0%)
Teaching quality	0 (0.0%)	0 (0.0%)	0 (0%)	10 (31.3%)	22 (68.8%)	32 (100%)
School climate	0 (0.0%)	0 (0.0%)	3 (9.4%)	11 (34.4%)	18 (56.3%)	32 (100%)
School safety	0 (0.0%)	0 (0.0%)	3 (9.4%)	9 (28.1%)	20 (62.5%)	32 (100%)
Social and emotional learning	0 (0.0%)	0 (0.0%)	3 (9.4%)	9 (28.1%)	20 (62.5%)	32 (100%)
Parental support and effort	0 (0%)	0 (0%)	2 (6.3%)	6 (18.8%)	24 (75.0%)	32 (100%)
Use of growth mindset with students	0 (0%)	0 (0%)	2 (6.3%)	10 (31.3%)	20 (62.5%)	32 (100%)
School discipline policies	0 (0.0%)	0 (0.0%)	1 (3.1%)	10 (31.3%)	21 (65.6%)	32 (100%)
Family background	1 (3.1%)	1 (3.1%)	2 (6.3%)	12 (37.5%)	16 (50.0%)	32 (100%)

Parent perceptions of students. The parent participants were asked to rate a teacher's ability to teach students with specific mindsets and characteristics using a five-point scale, where 1 represented *Very Difficult* and 5 represented *Very Easy.* The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall scale, Parents Perceptions of Students, the results indicated that most parent participants felt

teaching students with mostly growth mindset characteristics was easy. The sum mean was 14.84 with a standard deviation of 2.75 within a range of 4 (low) to 20 (high).

In Table 23, a high number of *Easy* and *Very Easy* ratings occurred related to teaching students with the specific mindsets and characteristics, such as "Have drive and determination" and "Believe that intelligence can change." According to the data, 84.4% of the parent participants felt that teaching students with the characteristic, "Have drive and determination," was *Easy* or *Very Easy*. Additionally, 68.5% of the parent participants felt that teaching students with the mindset, "Believe that intelligence can change," was *Easy* or *Very Easy*. The lowest levels of ratings existed with the characteristics, "Believe that intelligence cannot change" and "Have specific abilities at birth." For the beliefs that intelligence could not change, 59.4% of the parent participants rated the ease or difficulty of teaching students with this characteristic as *Very Difficult*, *Difficult*, or *Neither Easy Nor Difficult*. For the characteristic of "Have specific abilities at birth," 50.0% of the parent participants rated the ease or difficulty of teaching students with this characteristic *Difficult* or *Neither Easy Nor Difficult*.

Table 23

Frequencies and Percentages for the Parents Perceptions of Students Items

	Very Difficult	Difficult	Neither Easy Nor Difficult	Easy	Very Easy	Total
Item	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
Have drive and determination.	0 (0.0%)	1 (3.1%)	4 (12.5%)	12 (37.5%)	15 (46.9%)	32 (100.0%)
Believe that intelligence can change.	0 (0.0%)	1 (3.1%)	6 (18.8%)	13 (40.6%)	12 (37.5%)	32 (100.0%)
Have specific abilities at birth.	0 (0.0%)	8 (25.0%)	8 (25.0%)	10 (31.3%)	6 (18.8%)	32 (100.0%)

Item	Very Difficult *n* (%)	Difficult *n* (%)	Neither Easy Nor Difficult *n* (%)	Easy *n* (%)	Very Easy *n* (%)	Total *n* (%)
Believe that intelligence cannot change.	3 (9.4%)	12 (37.5%)	4 (12.5%)	8 (25.0%)	5 (15.6%)	32 (100.0%)

Importance of student beliefs. The parent participants were asked to rate their level of agreement for nine different student beliefs or attitudes that were important to school success using a four-point scale, where 1 represented *Strongly Disagree* and 4 represented *Strongly Agree*. The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall scale, Importance of Students Beliefs, the results indicated that most of the parent participants felt that the nine different student beliefs or attitudes were important to school success. The sum mean was 36.50 with a standard deviation of 7.32 within a range of 9 (low) to 36 (high).

In Table 24, a high number of *Agree* and *Strongly Agree* ratings occurred regarding the level of agreement of the different student beliefs or attitudes that were important to school success. With the item, "They can be successful in school," 93.8% of the parent participants felt that the student belief was important to school success by choosing a rating of *Agree* or *Strongly Agree*. Additionally, 93.8% of the parent participants felt that the student attitude, "Their work in school has value for them," was important to school success by choosing a rating of *Agree* or *Strongly Agree*. The lowest levels of importance existed among the student beliefs and attitudes, "Administrators and teachers know students personally" and "Administrators and teachers treat all students

equally and fairly." One-fourth of the parent participants chose *Disagree* or *Strongly Disagree* for "Administrators and teachers know students personally" to indicate the belief was not important to school success. For the belief, "Administrators and teachers treat all students equally and fairly," 21.9% of the parent participants chose a rating of *Disagree* or *Strongly Disagree*.

Table 24

Frequencies and Percentages for Importance of Student Beliefs Items for the Parent Group

Item	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
They can learn from failure and are willing to try new things in school.	1 (3.1%)	1 (3.1%)	14 (43.8%)	16 (50.0%)	32 (100.0%)
They can find help at school when they have difficulties.	1 (3.1%)	5 (15.6%)	11 (34.4%)	15 (46.9%)	32 (100.0%)
Their work in school has value for them.	2 (6.3%)	0 (0.0%)	12 (37.5%)	18 (56.3%)	32 (100.0%)
They can be successful in school.	1 (3.1%)	1 (1.9%)	10 (31.3%)	20 (62.5%)	32 (100.0%)
They belong in the school community.	1 (3.1%)	1 (3.1%)	13 40.6%)	16 (50.0%)	32 (100.0%)
Administrators and teachers know students personally.	3 (9.4%)	5 (15.6%)	12 37.5%)	12 (37.5%)	32 (100%)
Their academic abilities will increase through effort.	1 (3.1%)	1 (3.1%)	13 (40.6%)	17 (53.1%)	32 (100.0%)
They have the ability to learn challenging material.	1 (3.1%)	1 (3.1%)	14 (43.8%)	16 (50.0%)	32 (100.0%)
Administrators and teachers treat all students equally and fairly.	3 (9.4%)	4 (12.5%)	14 (43.8%)	11 (34.4%)	32 (100.0%)

Familiarity with growth mindset. The parent participants were asked to rate their familiarity on a five-point scale, where 1 represented *Not at all Familiar* and 5

represented *Very Familiar*. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall Familiarity with Growth Mindset item, the results indicated a moderate to high level of familiarity. The mean response was 3.72 with a standard deviation of 1.14 within a range of 1 (low) to 5 (high).

As shown in Table 25, 68.8% of the parent participants felt that they personally were *Very Familiar* or *Extremely Familiar* with growth mindset. In regard to lower levels of familiarity, 31.3% of the parent participants believed that they personally were *Not at All Familiar*, *Slightly Familiar*, or *Moderately Familiar* with growth mindsets.

Table 25

Frequencies and Percentages for Familiarity with Growth Mindset Item for the Parent Group

	Not at all Familiar	Slightly Familiar	Moderately Familiar	Very Familiar	Extremely Familiar	Total
Item	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
You personally	2 (6.3%)	3 (9.4%)	5 (15.6%)	14 (43.8%)	8 (25.0%)	32 (100%)

Fostering growth mindset. The parent participants were asked to rate their level of agreement with certain student behaviors and outcomes that were related to a student's growth mindset using a four-point scale, where 1 represented *Strongly Disagree* and 4 represented *Strongly Agree*. The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall Fostering a Growth Mindset Scale, the results indicated a moderate to high level of agreement. The sum mean was 20.32 with a standard deviation of 2.90 within a range of 6 (low) to 24 (high).

In Table 26, a high number of *Agree* and *Strongly Agree* ratings occurred with the participants' level of agreement with certain student behaviors and outcomes related to a student's growth mindset. With the item, "Fostering a growth mindset in students is part of my parenting duties and responsibilities," 94% of the parent participants selected *Agree* or *Strongly Agree*. Furthermore, 94% of the parent participants selected a rating of *Agree* or *Strongly Agree* for the item, "I am good at fostering a growth mindset in my students." The lowest levels of agreement (i.e., 13% of participants selected *Disagree* or *Strongly Disagree*) were found in the items, "Administrators at my school are good at fostering a growth mindset in students" and "Other teachers at my school are good at fostering a growth mindset in students."

Table 26

Frequencies and Percentages for Fostering a Growth Mindset Items for the Parents Group

Item	No Response	Strongly Disagree	Disagree	Agree	Strongly Agree	Total
	n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
All students can and should have a growth mindset.	1 (3.1%)	0 (0.0%)	2 (6.3%)	13 (40.6%)	1 (50.0%)	54 (100.0%)
Fostering a growth mindset in students is part of my parenting duties and responsibilities.	1 (3.1%)	1 (3.1%)	0 (0.0%)	11 (34.4%)	19 (59.4%)	54 (100.0%)
I am good at fostering a growth mindset in my students.	1 (3.1%)	0 (0.0%)	1 (3.1%)	12 (37.5%)	18 (56.3%)	54 (100.0%)
Administrators at my school are good at fostering a growth mindset in students.	1 (3.1%)	1 (3.1%)	3 (9.4%)	14 (43.8%)	13 (40.6%)	54 100.0%)
Other teachers at my school are good at fostering a growth mindset in students.	1 (3.1%)	3 (9.4%)	1 (3.1%)	18 (56.3%)	9 (28.1%)	54 (100.0%)

Item	No Response *n* (%)	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
I have adequate solutions and strategies to use when students do not have a growth mindset.	1 (3.1%)	0 (0.0%)	1 (3.1%)	15 (46.9%)	15 (46.9%)	54 (100.0%)

Outcomes linked to growth mindset. The parent participants were asked to rate their level of agreement with certain student behaviors and outcomes that were associated with a student's growth mindset using a four-point scale, where 1 represented *Strongly Disagree* and 4 represented *Strongly Agree.* The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall Outcomes Linked to a Growth Mindset Scale, the results indicated a high level of agreement. The sum mean was 32.06 with a standard deviation of 4.19 within a range of 9 (low) to 36 (high).

In Table 27, a high number of *Agree* and *Strongly Agree* ratings regarding the behaviors and outcomes were associated with students' growth mindsets; 68.8% of participants felt that excitement about learning and good attendance were associated with students' growth mindsets. The lowest levels of agreement existed with the frequent participation in class discussions and high standardized testing. For frequent participation in class discussions, 31.3% of the parent participants chose the rating of *Disagree*. For high standardized testing, 15.6 % of the parent participants chose a rating of *Strongly Disagree* or *Disagree.*

Table 27

Frequencies and Percentages for Outcomes Linked to Growth Mindset Items for the Parent Group

Item	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
Excitement about learning	0 (0.0%)	0 (0.0%)	10 (31.3%)	22 (68.8%)	32 (100.0%)
Dedication to schoolwork	0 (0.0%)	0 (0.0%)	12 (37.5%)	20 (62.5%)	32 (100.0%)
High levels of effort on schoolwork	0 (0.0%)	0 (0.0%)	12 (37.5%)	20 (62.5%)	32 (100.0%)
Frequent participation in class discussions	0 (0.0%)	12 (31.3%)	0 (0.0%)	20 (62.5%)	32 (100.0%)
Good attendance	0 (0%)	0 (0%)	10 (31.3%)	22 (68.8%)	32 (100.0%)
Consistent completion of homework assignments	1 (3.1%)	0 (0.0%)	10 (31.3%)	21 (65.6%)	32 (100.0%)
Frequent participation in afterschool activities	1 (3.1%)	0 (0.0%)	17 (53.1%)	14 (43.8%)	32 (100.0%)
Good course grades	0 (0.0%)	2 (6.3%)	10 (31.3%)	20 (62.5%)	32 (100.0%)
High standardized test scores	1 (3.1%)	4 (12.5%)	11 (34.4%)	16 (50.0%)	32 (100.0%)

Preparation to address mindset. The parent participants were asked to rate their level of agreement with two sources of parent workshops and training using a four-point scale, where 1 represented *Strongly Disagree* and 4 represented *Strongly Agree.* Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall Preparation to Address Mindset Scale, the results indicated that the parent participants' training experiences were high. For parent PTO informational sessions/trainings, the mean of the parent responses was 3.26 with a standard deviation of 0.86 within a range of 1 (low) to 4 (high). For parent workshops, the mean was 3.41 with a standard deviation of 0.76 within a range of 1 (low) to 4 (high).

In Table 28, 90.6% of the parent participants selected a rating of *Agree* or *Strongly Agree* for the parent workshops item, and 84.4% of the parent participants selected a rating of *Agree* or *Strongly Agree* for the parent PTO informational sessions/trainings item.

Table 28

Frequencies and Percentages Preparation to Address Mindset Items for the Parent Group

Item	No Response *n* (%)	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
Parent PTO informational sessions/trainings	1 (3.1%)	2 (6.3%)	2 (6.3%)	13 (40.6%)	14 (43.8%)	32 (100.0%)
Parent Workshops	0 (0.0%)	1 (3.1%)	2 (6.3%)	12 (37.5%)	17 (53.1%)	32 (100.0%)

Home interaction. The parent participants were asked to rate how frequently they engaged in nine different ways using a five-point scale, where 1 represented *Never* and 5 represented *Every Day*. The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. In the scale, five items were practices that foster a growth mindset, and four items were practices that do not foster a growth mindset. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall Home Interaction (Foster Growth Mindset) Subscale, the results indicated a high frequency rate of practices. The sum mean was 22.44 with a standard deviation of 2.34 within a range of 5 (low) to 25 (high). Based on the overall Home Interaction (Did Not Foster Growth Mindset) Subscale, the results indicated that a high frequency rate of practices that impeded upon fostering a growth mindset was used. The sum mean was 16.81 with a standard deviation of 3.08 within a range of 4 (low) to 20 (high). Like the teacher participants, results from

this scale were indicative of the issue in education regarding to false growth mindsets because the parent participants felt the practices that do not foster growth mindsets were effective.

In Table 29, a high number of *A Few Times a Week* and *Every Day* frequencies were associated with Home Interaction (Foster Growth Mindset) practices. In the item, "Praising your child for their learning strategies," 96.6% of the parent participants selected a frequency of *A Few Times a Week* or *Every Day*. Additionally, 96.9% of the parent participants selected a frequency of *A Few Times a Week* and *Every Day* for the item, "Helping your child who is already doing well to keep trying to improve." The lowest levels of practices associated with Home Interaction (Foster Growth Mindset) were with the items, "Asking your child to seek help from other students on schoolwork" and "Helping your child try new strategies when they are struggling." For the item, "Asking your child to seek help from other students on schoolwork," 34.4% of the parent participants chose a frequency of *Never* or *A Few Times a Month*. For the item, "Helping your child try new strategies when they are struggling," 6.3% of the parent participants selected a frequency of *A Few Times a Month*.

In Table 29, a high number of *A Few Times a Week* and *Every Day* frequencies were associated with Home Interaction (Did Not Foster Growth Mindset) practices. With the item, "Praising your child for earning good scores or grades," 96.9% of the parent participants chose a frequency of *A Few Times a Week* or *Every Day*. Furthermore, 93.8% of the parent participants chose a frequency of *A Few Times a Week* or *Every Day* for the practice, "Praising students for their mind." The lowest levels of practices associated with Home Interaction (Did Not Foster Growth Mindset) existed with the

items, “Telling your child that it is alright to struggle, not everyone is good at a given subject” and “Helping your child by telling them a new topic will be easy to learn.” For the item, “Telling your child that it is alright to struggle, not everyone is good at a given subject,” 34.4% of the parent participants selected a frequency of *Never* or *A Few Times a Year*. For the item, “Helping your child by telling them a new topic will be easy to learn,” 15.6% of the parent participants selected a frequency of *Never* or *A Few Times a Year*.

Table 29

Frequencies and Percentages for Home Interaction Items for the Parent Group

Item	Never	A Few Times a Year	A Few Times a Month	A Few Times a Week	Every Day	Total
	n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
*Helping your child to try new strategies when they are struggling.	0 (0.0%)	0 (0.0%)	2 (6.3%)	9 (28.1%)	21 (65.6%)	32 (100.0%)
*Praising your child for their learning strategies.	0 (0.0%)	0 (0.0%)	1 (3.1%)	4 (12.5%)	27 (84.4%)	32 (100.0%)
*Asking your child seek help from other students on schoolwork.	7 (21.9%)	2 (6.3%)	6 (18.8%)	5 (15.6%)	12 (37.5%)	32 (100.0%)
Telling your child that it is alright to struggle, not everyone is good at a given subject.	9 (28.1%)	2 (6.3%)	4 (12.5%)	6 (18.8%)	11 (34.4%)	32 (100.0%)
Praising your child for their mind.	0 (0.0%)	0 (0.0%)	2 (6.3%)	6 (18.8%)	24 (75.0%)	32 (100.0%)
*Praising your child for their effort.	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (18.8%)	26 (81.3%)	32 (100.0%)
*Helping your child who is already doing well to keep trying to improve.	0 (0.0%)	0 (0.0%)	1 (3.1%)	4 (12.5%)	27 (84.4%)	32 (100.0%)
Praising your child for earning good scores or grades.	0 (0.0%)	0 (0.0%)	1 (3.1%)	5 (15.6%)	26 (81.3%)	32 (100.0%)
Helping your child by telling them a new topic will be easy to learn.	4 (12.5%)	1 (3.1%)	1 (3.1%)	8 (25.0%)	18 (56.3%)	32 (100.0%)

Note. All items with an asterisk (*) are indicative of growth mindset practices.

Parent comments to students. The parent participants were given a list of seven comments that parents might say to their children. Participants were asked if each statement helped students to learn with a growth mindset using a five-point scale, where 1 represented *Not at all Helpful* and 5 represented *Extremely Helpful*. Four of the comments fostered a growth mindset, and three of the comments did not foster a growth mindset. The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall Parents Comments to Students (Fostered Growth Mindset) Subscale, the results indicated that the parent participants felt the comments had a high level of helpfulness. The sum mean was 19.03 with a standard deviation of 1.60 within a range of 4 (low) to 20 (high). For the Parent Comments to Students (Did not Foster Growth Mindset) Subscale, the results indicated that the parent participants felt the comments had a high level of helpfulness. The sum mean was 18.00 with a standard deviation of 2.68 within a range of 3 (low) to 15 (high). Based on these data, the parent participants felt that the practices that do not foster growth mindsets were effective, which supported the issue in education pertaining to false growth mindsets.

In Table 30, Parents Comments to Students Scale had a high number of *Very Helpful* and *Extremely Helpful* ratings pertaining to comments that fostered and did not foster a growth mindset. For comments that fostered a growth mindset, such as "You really studied for your test and your improvement shows it," 100% of the parent participants gave a rating of *Very Helpful* or *Extremely Helpful*. Additionally, the comment, "Great job. You must have worked really hard on this," was rated as *Very*

Helpful or *Extremely Helpful* by 100% of the participants. The lowest levels of effectiveness ratings existed with the comments, such as "I love how you stayed at your desk and kept your concentration in order to keep working on that problem" and "I really like the way you tried all kinds of strategies on that problem until you finally got it." The comment, "I love how you stayed at your desk and kept your concentration in order to keep working on that problem," was rated by 3.1% of the parent participants as *Moderately Helpful*. In the comment, "I really like the way you tried all kinds of strategies on that problem until you finally got it," 3.1% of the parent participants felt that the comment was *Moderately Helpful*.

For comments that did not foster a growth mindset, such as "See, you are good at this subject. You got an A on your last test," 96.9% of the parent participants gave a rating of *Very Helpful* or *Extremely Helpful*. Additionally, for the comment, "Look at how smart you are," 96.9% of participants gave a rating of *Very Helpful* or *Extremely Helpful.* The lowest levels of effectiveness ratings existed with comments, such as "This is easy, you will get this in no time" and "You are one of the top students in the class." With the comment, "This is easy, you will get this in no time," 25.0% of the parent participants felt that the comment was *Not at all Helpful*, *Slightly Helpful*, or *Moderately Helpful*. The comment, "You are one of the top students in the class," was rated by 15.6% of the parent participants as *Not at all Helpful*, *Slightly Helpful*, or *Moderately Helpful*.

Table 30

Frequencies and Percentages for the Parent Comments to Students Items

Item	Not at all Helpful *n* (%)	Slightly Helpful *n* (%)	Moderately Helpful *n* (%)	Very Helpful *n* (%)	Extremely Helpful *n* (%)	Total *n* (%)
*I love how you kept your focus in order to keep working on that problem.	0 (0.0%)	0 (0.0%)	1 (3.1%)	8 (25.0%)	23 (71.9%)	32 (100.0%)
*Great job. You must have worked really hard on this.	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (25.0%)	24 (75.0%)	32 (100.0%)
See, you are good at this subject. You got an A on your last test.	0 (0.0%)	1 (3.1%)	0 (0.0%)	5 (15.6%)	26 (81.3%)	32 (100.0%)
*I really like the way you tried all kinds of ideas on that problem until you finally got it.	0 (0.0%)	0 (0.0%)	1 (3.1%)	5 (15.6%)	26 (81.3%)	32 (100.0%)
*You really studied for your test and your progress shows it.	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (18.8%)	26 (81.3%)	32 (100.0%)
You are one of the top students in the class.	1 (3.1%)	1 (3.1%)	3 (9.4%)	7 (21.9%)	20 (62.5%)	32 (100.0%)
This is easy, you will get this in no time.	3 (9.4%)	1 (3.1%)	4 (12.5%)	6 (18.8%)	18 (56.3%)	32 (100.0%)
Look at how smart you are.	0 (0.0%)	1 (3.1%)	0 (0.0%)	5 (15.6%)	26 (81.3%)	32 (100.0%)

Note. All items with an asterisk (*) are indicative of growth mindset comments.

Integration of mindset. The parent participants were asked to rate the extent to which they had mixed the concept of students' growth mindset into their parenting beliefs and ways where 1 represented *Not at all Mixed* and 5 represented *Extremely Mixed*. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall Integration of Mindset into Parenting item, the results indicated a moderate to high level of integration. The mean response was 4.00

with a standard deviation of 0.92 within a range of 1 (low) to 5 (high). In Table 31, 71.9% of the parent participants select a rating of *Very Mixed* or *Extremely Mixed*.

Table 31

Frequencies and Percentages Integration of Mindset into Parenting Item

Item	Not at all Mixed *n* (%)	Slightly Mixed *n* (%)	Moderately Mixed *n* (%)	Very Mixed *n* (%)	Extremely Mixed *n* (%)	Total *n* (%)
To what extent have you mixed growth mindset into your parenting beliefs and ways?	0 (0.0%)	2 (6.3%)	7 (21.9%)	12 (37.5%)	11 (34.4%)	32 (100.0%)

Effect on teaching and learning. The parent participants were asked to rate their level of agreement with student outcomes that were related to mixing growth mindset where 1 represented *Strongly Disagree* and 4 represented *Strongly Agree.* The responses for each scale item were summed, then the sum mean was calculated by averaging the participants' sums. Descriptive statistics, including mean, standard deviation, and range, were conducted to summarize the data. Based on the overall Effects on Teaching and Learning Scale, the results indicated that the level of agreement with student outcomes associated with integrating growth mindset was moderate to high. The sum mean was 10.56 with a standard deviation of 1.58 within a range of 3 (low) to 12 (high).

In Table 32, a high number of *Agree* and *Strongly Agree* ratings were associated with participants level of agreement with student outcomes associated with integrating growth mindset. For the item, "Progress with my child's learning," 100% of the parent participants chose a rating of *Strongly Agree* or *Agree*. For the item, "Progress with my own parenting beliefs and ways," 100% of the parent participants chose a rating of *Strongly Agree* or *Agree*. The lowest levels of agreement existed with the outcome,

"Significantly change my parenting beliefs and ways," with 18.7% of the parent participants selecting *Strongly Disagree* or *Disagree*.

Table 32

Frequencies and Percentages Effect on Teaching and Learning Items for the Parent Group

Item	Strongly Disagree *n* (%)	Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)	Total *n* (%)
Progress with my child's learning.	0 (0.0%)	0 (0.0%)	11 (34.4%)	21 (65.6%)	32 (100.0%)
Progress with my own parenting beliefs and ways.	0 (0.0%)	0 (0.0%)	14 (43.8%)	18 (56.3%)	32 (100.0%)
Significantly change my parenting beliefs and ways.	1 (3.1%)	5 (15.6%)	8 (25.0%)	18 (56.3%)	32 (100.0%)

Summary of scale descriptives. Table 33 presents a summary of descriptive statistics. The table includes the number of parent participants who completed the scale, mean of parent participant responses or sums, standard deviation, minimum response or sum, and maximum response or sum.

Table 33

Descriptives for All Scales for the Parent Group

Scales	*N*	*M*	*SD*	*min*	*max*
Factors Affecting Student Achievement	32	41.03	4.00	35.00	45.00
Parent Perceptions of Students	32	14.84	2.75	10.00	20.00
Importance of Student Beliefs	32	36.50	7.32	11.00	44.00
Familiarity with Growth Mindset	32	3.72	1.14	1.00	5.00
Fostering a Growth Mindset	31	20.32	2.90	14.00	24.00

Scales	*N*	*M*	*SD*	*min*	*max*
Outcomes Linked to Growth Mindset	32	32.06	4.19	22.00	36.00
Preparation to Address Mindset (Parent PTO informational sessions/trainings)	31	3.26	0.86	1.00	4.00
Preparation to Address Mindset (Parent Workshops)	32	3.41	0.76	1.00	4.00
Home Interaction (Fostered Growth Mindset)	32	22.44	2.34	18.00	25.00
Home Interaction (Did not Foster Growth Mindset)	32	16.81	3.08	11.00	20.00
Parents Comments to Children (Fostered Growth Mindset	32	19.03	1.60	15.00	20.00
Parents Comments to Children (Did not Foster Growth Mindset)	32	18.00	2.68	10.00	20.00
Integration of Mindset into Parenting	32	4.00	.916	2.00	5.00
Effects on Parenting and Learning	32	10.56	1.58	8.00	12.00

Training experiences. The parent participants were asked to rate their level of experience with training related to growth mindset using a four-point scale, where 1 represented *I have had some training and want more,* 2 represented *I have had some training and do not want more,* 3 represented *I have had no training and want some,* and 4 represented *I have had no training and do not want any*. Frequencies were used to determine each participants' growth mindset training experience. As detailed in Table 34, 13 of the 32 parent participants indicated that they have had training and would like more. Based on the data, 23 out of 32 parent participants were interested in more growth mindset training. Out of 32 participants, nine parent participants were not interested in

growth mindset training, and 10 parent participants indicated that they had no training and wanted some.

Table 34

Frequency and Percentage of Training Experiences for the Parent Group

Response	*n*	%
I have had some training and I want some more.	13	40.6%
I have had some training and I do not want more.	5	15.6%
I have had no training and want some.	10	31.3%
I have had no training and do not want any.	4	12.5%
Total	32	100.0%

Training topics. The parent participants were asked to select which of the topics listed in Table 35 were addressed in previous training and parent workshops on growth mindset. According to the data, a low to moderate percentage of participants received training on the topics related to growth mindset. Of 32 parent participants, 56.3% of the participants received training on the topics of "Encouraging your child to try a new plan when they are struggling to learn a concept" and "Helping your child see error or failure as a chance to learn and improve." The lowest levels of training and professional development existed with the topics of "Using growth mindset with specific children (e.g., students with disabilities)" and "Talking with other parents about growth mindset." Out of 32 participants, 71.9 % of the parent participants received no training on using growth mindset with specific children (e.g., students with disabilities). Out of 32 participants, 65.6% of the parent participants received no training on talking with other parents about growth mindset.

Table 35

Frequency and Percentage of Training Topics for the Parent Group

Topic	No		Yes	
	n	%	*n*	%
Encouraging your child to try a new plan when they are struggling to learn a concept.	14	43.8%	18	56.3%
Helping your child see error or failure as a chance to learn and improve.	14	43.8%	18	56.3%
Helping your child know that the brain is like a muscle and physically changes with training.	20	62.5%	12	37.5%
Using growth mindset with specific children (e.g., students with disabilities).	23	71.9%	9	28.1%
Talking with other parents about growth mindset.	21	65.6%	11	34.4%
Curriculum materials and resources to reinforce using growth mindset at home.	18	56.3%	14	43.8%
Using growth mindset to support other school subjects at home.	18	56.3%	14	43.8%
Using growth mindset to support English/language arts and literacy at home.	18	56.3%	14	43.8%
Using growth mindset to support mathematics at home.	17	53.1%	15	46.9%

Research Question 3

In regard to comparing teacher and parent perceptions of growth mindset knowledge, the following research question was investigated. How do teacher perceptions of their knowledge of growth mindsets compare to parent perceptions of their knowledge of growth mindsets?

In the qualitative research phase, a multiple-case study approach was used to explore the differences in perceptions between two cases. The researcher began the

qualitative analysis by reviewing the transcripts three times. Next, the researcher highlighted similar thoughts that the participants shared and any information that the researcher found interesting. Participants' synonymous ideas and interesting findings were then coded using words and phrases based on responses from each question. Finally, themes were created based on the clustered codes and listed under the focus group questions' headings, Familiarity for Question 1 through Question 4, Beliefs for Question 5 through Question 8, and Origins of Intelligence Development (Summary) for Question 9 and Question 10. The raw data transcripts were given to an external auditor, and the auditor coded using words and phrases without knowledge of the researcher's codes. After the coding process, a meeting was held with the external auditor for the purpose of confirming the themes that emerged from both coding processes. The external auditor's themes were also grouped under the focus group questions' headings, Familiarity for Question 1 through Question 4, Beliefs for Question 5 through Question 8, and Origins of Intelligence Development (Summary) for Question 9 and Question 10. The researcher and external auditor discussed and agreed upon each of the themes by the conclusion of the meeting.

Familiarity (teachers). As detailed in Table 36, five subthemes emerged out of the teacher focus group transcripts that showed the level of familiarity teachers had with growth mindset. Encouragement, praise, and attention were perceived as important by 100% of the participants. Two of the three teacher focus group participants, 67%, felt that encouragement, praise, and attention built confidence. Two of the three teacher focus group participants felt that, when students were encouraged to persevere, they developed self-awareness. All three participants felt that not all students embraced challenges due to

fear. Factors that were attributed to Maslow's Hierarchy of Needs were stated as having a strong effect on student achievement by two (67%) of the three participants. Participant 6 stated, "I feel like when kids are not being met with their hierarchy needs, that it's hard for us to foster the growth mindset in them" (Transcript 6, p. 2, lines 23-24).

Out of the researcher's five themes and codes, the external auditor and researcher had a 100% overlap. As previously mentioned, the researcher and external auditor used a different format for sharing codes and themes, but, by the end of the meeting, the researcher and the auditor agreed upon each code and theme. For example, the researcher first listed encouragement, praise, and attention are important as a theme. The auditor listed the following:

> There is no one specific theme; however, teachers believed that the benefits of using encouragement, praise, and attention to children will help children build self-confidence, motivate them to do more. Teacher use praise/encouragement and attention to direct children to do the right things and recognize children's effort. (C. Wu, personal communication, February 19, 2020)

The researcher's second code was encouragement, praise, and attention build confidence. The external auditor's code stated "build children's self-confidence/become independent" (C. Wu, personal communication, February 19, 2020). The researcher's third code was encouragement to persevere builds self-awareness. The external auditor's code stated "Once the student succeeds, he will get that 'aha moment'" (C. Wu, personal communication, February 19, 2020). That response was also the participant's response listed as an example by the researcher in Table 36. The researcher and external auditor discussed the code and agreed to keep the researcher's verbiage. The researcher's fourth

theme was not all student's face challenges due to fear. The external auditor's themes were "Not all children embrace challenges for two reasons: 1) it is not a classroom culture that children embrace challenges; 2) children did not know or understand what the instruction was so they get scared and give up easily" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording. The researcher's fifth theme was that Maslow's Hierarchy of Needs strongly affected student achievement. The external auditor's theme stated "There is one theme from two teachers that is to provide a safe and loving environment for children" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the theme and agreed to keep the researcher's choice of words due to the interesting relation to Maslow's Hierarchy of Needs, which was created by Abraham Maslow. The theory suggests that individuals are motivated by five basic categories of needs (i.e., physiological, safety, love, esteem, and self-actualization; Hopper, 2020).

Table 36

Themes and Codes for Teachers' Perceptions of Growth Mindset Familiarity

Theme or Code	Total/Percentage (N = 3)	Example Participant Quotes
Encouragement, praise, and attention are important.	3 (100%)	"I think those are important factors when working with children in the classroom."
Encouragement, praise, and attention build confidence.	2 (67%)	"It helps them to build self-confidence."
Encouragement to persevere builds self-awareness.	2 (67%)	"It's almost like they get that aha moment they can succeed."

Theme or Code	Total/Percentage (N = 3)	Example Participant Quotes
Not all students embrace challenges due to fear.	3 (100%)	"No, I think a lot of them are just scared."
Maslow's Hierarchy of Needs strongly affect student achievement.	2 (67%)	"When they know they are loved and cared for and feel safe, they will try anything and not give up."

Growth mindset familiarity (parents). As detailed in Table 37, three subthemes emerged out of the parent focus group transcripts that were associated with the theme, growth mindset familiarity. Encouragement, praise, and attention were thought of as positive by two of the three teacher focus group participants (67%). Two of the three parent participants attributed encouragement, praise, and attention to increases in achievement. Two of the three parent participants stated that their children would succeed if they persevered when studying. Encouragement, praise, and attention were perceived as important by 100% of the parent participants. Two of the three parent participants, 67%, felt that encouragement, praise, and attention built confidence. Two of the three parent participants felt that, when students received encouragement to persevere, they built self-awareness. Participant 2 stated, "The teachers are encouraging them and they know to do their best no matter how they do it or how they do their work. . . .They know they're the best in their eyes." (Transcript 2, p. 2, lines 4-6).

After reviewing themes with the external auditor, a 100% overlap was found. The researcher's first theme was encouragement, praise, and attention were positive. The external auditor's theme stated "Use praise /encouragement/attention to help keep their child focused and do more" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's

verbiage. The researcher's next theme was increased achievement. The external auditor's theme stated,

> Parents seemed to lay the responsibility on the teacher or school to affect student achievement. On the contrary, teacher lays school and home connection, parental involvement and providing a positive learning environment to children are important factors to affect student achievement. It is interesting! (C. Wu, personal communication, February 19, 2020)

The external auditor initially felt that parents did not specify any factor that affected student achievement. After reviewing parent transcripts, the researcher and external auditor agreed to keep the researcher's wording but agreed with the auditor's and researcher's theme. The researcher's third theme was perseverance when studying was needed to succeed. The external auditor's theme stated "Parents used strategies to encourage their children to persevere to challenging tasks by 1) relating to their personal experience and 2) providing emotional support" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording.

Table 37

Themes and Codes for Parents' Perceptions of Growth Mindset Familiarity

Theme or Code	Total/Percentage (N = 3)	Example Participant Quotes
Encouragement, praise, and attention were positive.	2 (67%)	"Is very good because it keeps them focused and gives them the urge to learn more since you praise them like that."
Increased achievement.	2 (67%)	"Grades go higher and higher when you praise them."

Theme or Code	Total/Percentage (N = 3)	Example Participant Quotes
Perseverance when studying is needed to succeed.	2 (67%)	"I keep telling them to keep doing it, keep studying, you're going to get it."

Growth mindset beliefs (teachers). As detailed in Table 38, six subthemes emerged out of the teacher focus group transcripts that showed the theme, beliefs that teachers had pertaining to growth mindset. Two out of three (67 %) of the teacher participants perceived that some parents who have students with disabilities struggled with modeling a growth mindset about skill development. When asked about how teacher beliefs affected student achievement, two out of the three teacher participants perceived that students mirrored their teachers' behavior. All of the teacher participants (100%) shared that they consistently encouraged and modeled perseverance. Two out of the three teacher participants discussed parent beliefs about skill development in their children. Parents' belief in education was discussed by two out of the three teacher participants. When asked how growth mindset was integrated into their expectations and practice, a positive and risk-free learning environment was shared by two out of the three teacher participants. Participant 6 stated,

> They will feel you provide a safe learning environment for them, where mistakes will be welcomed. When they know that they are loved and cared for and that they feel safe, I feel like they would try anything without giving up. (Transcript 6, p. 1, lines 29-31)

Two of the three teacher participants also perceived that pacing affected growth mindset.

Out of the researcher's seven themes, a 100% overlap with the external auditor was present. The researcher's first theme was some parents who have students with

disabilities struggled with modeling a growth mindset about skill development. The external auditor's theme stated, "Children's ability affect student achievement" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording. The researcher's second code was students mirrored teachers' behavior. The external auditor's code stated, "If the teacher is happy, then the children are happy" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording. The researcher's third code was consistency of perseverance. The external auditor's code stated, "Yes you can and we are going to try this. Or Just encourage them" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code, and the researcher used the external auditor's code as an example next the theme. After discussing the similarities, the researcher and external auditor agreed to keep the researcher's wording. The researcher's fourth theme was parent expectations about skill development. The external auditor's code stated, "If the parents believe strongly in their children's education, then they will work with their kids at home" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording. The researcher's fifth theme was parents' belief in education. The external auditor's theme stated, "Parents value of education" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording. The researcher's sixth theme was integration of growth mindset with positive learning environment. The external auditor's code stated "Environment where children are free to take risk in learning" (C. Wu, personal communication,

February 19, 2020). The researcher's seventh theme was pacing. The external auditor's theme stated, "Can improve learning with time and pace" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording. Although the researcher and external auditor had a 100% overlap in themes, the external auditor felt that the teacher participants were not clear about the question. The external auditor felt that, if the question were reworded, the participants would have had the opportunity to give more detailed responses associated with the question. The researcher felt that, due to the teacher's lack of professional learning, workshops, in-service, and preservice training based on the quantitative data collected in the survey, teachers may have struggled to provide a response that aligned with an individual who was knowledgeable of growth mindset research and practice.

Table 38

Growth Mindset Beliefs Themes and Codes for the Teacher Group

Theme or Code	Total/Percentage (N = 3)	Example Participant Quotes
Some parents that have students with disabilities struggled with modeling a growth mindset about skill development.	2 (67%)	"Some parents can't see beyond the disability." They always make in their mind that, my kids cannot do it." "I do see my parents that see their kids cannot do it not expose them and that affects their whole day." "I believe that parents have to see beyond that, but if they don't see it, that affects their achievement."
Students mirrored teachers' behavior.	2 (67%)	"Because at a young age, children really rely on what the teacher says." "If the teacher encourages, if the teacher's happy, then the children are happy." "If the teachers are sometimes mean or ugly acting, a lot of times the children behave as what they see."

Theme or Code	Total/Percentage (N = 3)	Example Participant Quotes
Consistency of perseverance.	3 (100%)	"When kids start saying they can't do something, I turn around and say, yes you can, we are going to try this."
Parent expectations about skill development.	2 (67%)	"If they go home and it's not reinforced at home what we've taught in school, then a lot of times it's a broken bridge."
Parents' belief in education.	2 (67%)	"If the parents believe strongly in their education, then they work with their kids at home and that's their normal routine." "However, if the parents were not brought up in a home where their parents helped them with homework, it's just not as important to that parent to teach the kids and they think it's the school's job to teach the kid."
Integration of growth mindset with positive learning environment	3 (100%)	"I always try to make my class environment in such a way they are free to take risk in learning."
Pacing	1 (33%)	"We always break the tasks into small pieces, and they get more time. I'm maturing their mindset when I show it's okay to take risks. "You do not have to pace with time. As long as you learn the skill, that's important."

Growth mindset beliefs (parents). As detailed in Table 39, 10 subthemes emerged out of the parent focus group transcripts that showed the theme, beliefs that parents had pertaining to growth mindset. All three parent participants shared the perception that teachers' beliefs concerning student abilities strongly impacted student achievement. Factors that could cause students stress and/or anxiety were shared by 100% of the parent participants. Participant 3 stated,

> Sometimes the work could be a little hard and stressful on them and they have to focus so much and have to do so much for the teacher and the parents, so I tell her to take her time, focus, concentrate, and just do your best. That's all you can do. (Transcript 3, p. 1, lines 23-26)

All three parent participants shared the perception that students were emotionally fragile. Behaviors associated with student self-efficacy were shared by two of the three parent participants. Each of the three parent participants shared the perception that their child struggled with their ability to focus. Two out of the three (67%) of participants shared the belief the consistent use of perseverance when learning was important. Two out of the three (67%) of participants perceived that challenging their children with more rigorous tasks would help foster a growth mindset. Two out of the three (67%) of participants perceived that peer pressure from students could impede upon development of a growth mindset. Each parent participant shared the belief that pacing, by breaking down activities, would help students persevere through tasks. One out of the three parent participants thought that her child's maturity level at such a young age was too low to understand her certain concepts. One out of the three parent participants perceived that demographics, such as race, were barriers when fostering a growth mindset. All three parent participants shared their thoughts pertaining to parents' belief in education.

Out of the researcher's 12 themes, a 100% overlap with the external auditor was present. The researcher's first code was teachers' beliefs strongly impacted student achievement. The external auditor's theme stated, "Teacher encourage students to do their best" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording. The researcher's second code was stress. The external auditor's code stated, "If I get stressed, he will stress, too" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording. The researcher's third code was students were emotionally fragile. The external auditor's code

stated, “I try not to be really hard on him… so he won’t feel down or anything” (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher’s wording. The researcher’s fourth theme was self-efficacy. The external auditor’s theme stated, “Go over it at least four or five times a day with them, so they won’t give up and feel like they can’t do it” (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher’s wording. The researcher’s fifth code was student lack of focus. The external auditor’s code stated, “Having ADHD.” The researcher and external auditor discussed the code and agreed to keep the researcher’s wording (C. Wu, personal communication, February 19, 2020). The researcher’s sixth theme was consistency. The external auditor’s code stated, “Go over it at least four or five times a day with them” (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher’s wording. The researcher’s seventh theme was challenging. The external auditor’s code stated, “Read bigger levels, doing things not done in school” (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher’s wording. The researcher’ eighth code was pacing. The external auditor’s code stated, “Sit down and go through it with them because sometimes students struggle” (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher’s wording. The researcher’s ninth theme was self-efficacy. The external auditor’s theme stated, “They won’t give up and feel like they can’t do it” (C. Wu, personal communication, February 19, 2020). The researcher and external auditor

discussed the code and agreed to keep the researcher's wording. The researcher's 10th theme was maturity level. The external auditor's theme stated, "Don't want to ask for help because of peer pressure" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording. The researcher's 11th theme was demographics. After a discussion of the transcript, the external auditor decided to adopt the code after reading a parent's response on the difficulty of learning due to the language barrier of her Hispanic child. The researcher's 12th theme was parents' belief in education. The external auditor's theme stated, "Parents practice with students" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording.

Although the researcher and external auditor had a 100% overlap in themes, the external auditor felt that the parent participants were not clear about the belief focus group questions. The questions were as follows:

- How do teachers' beliefs about their students' abilities affect student achievement?
- How do parents' beliefs about their students' abilities affect student achievement?

The external auditor felt that the questions should be reworded and piloted prior to future research. The external auditor felt that parents may have struggled to provide an explanation that aligned with an individual who was knowledgeable of growth mindset research and practice. The researcher agreed with the external auditor's suggestion regarding the rewording of the questions and piloting prior to future research.

Table 39

Growth Mindset Beliefs Themes and Codes for the Parent Group

Theme or Code	Total/Percentage (N = 3)	Example Participant Quotes
Teachers' beliefs strongly impacted student achievement.	3 (100%)	"It makes a very big difference."
Stress	3 (100%)	"They'll feel down." "They'll feel like, Oh, they're not trying to encourage me and I can't do my best." "Or if they're trying to get this answer right and they feel like the teacher has given up on them, they don't want to feel like that."
Students are emotionally fragile	3 (100%)	"Sometimes parents' minds is not on children." "That's why they cry." "They just can't get it." "They act out because they don't want to learn it because you ain't try to help them with it."
Self-efficacy	2 (67%)	"Sometimes the students don't praise themselves enough."
Student lack of focus	3 (100%)	"I tell him that he needs to study, be a smart kid, but he gets sad because he can't really focus."
Consistency	3 (100%)	"I go over it at least four or five times a day with them so they won't give up and feel like they can't do it"
Challenging	3 (100%)	"I read bigger levels, things he might do in school."
Peer-Pressure	1 (100%)	"The ones that struggle and don't want to ask for help because they in that peer pressure." "My friends ain't doing it so why should I?"
Pacing	3 (100%)	"Can you break it down for me afterschool or when can I come in to get that extra help?"
Maturity Level	1 (33%)	"You know he's in kindergarten, he really doesn't understand."
Demographics	1 (33%)	"There's a lot of, well I'll say a lot of different types of races." "Not everybody has the same mindset and it's hard for them to learn." "Hispanic kids, it's really hard for them to learn two languages."

Theme or Code	Total/Percentage (N = 3)	Example Participant Quotes
Parents' Belief in Education	3 (100%)	"I tried to talk to him and encourage him because of course his father, he dropped out and I don't want him to make the same mistake his father did."

Origin of intelligence development (teachers). As detailed in Table 40, one subtheme emerged out of the teacher focus group transcripts that showed the theme, origin of intelligence development. All three teacher participants shared the perception that intelligence can be developed. Participant 6 stated, "I think it can. Because it's just, the more you learn, the more you grow, the more you read, the more you learn new things. So, I feel like that you can grow" (Transcript 6, p. 2, lines 28-29).

Out of the researcher's one theme, a 100% overlap with the external auditor's theme was present. The researcher's only theme was intelligence can be developed. The external auditor's code stated "Some people say that their kids are born smart, but I don't think so" (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher's wording.

Table 40

Themes and Codes for Teachers' Perceptions of Origin of Intelligence Development

Theme or Code	Total/Percentage (N = 3)	Example Participant Quotes
Intelligence can be developed.	3 (100%)	"You all start at the same level, it's almost like you're just building on that foundation."

Origin of intelligence development (parents). As detailed in Table 41, one subtheme emerged out of the parent focus group transcripts that showed the theme, origin

of intelligence development. All three parent participants shared the perception that intelligence can be developed. Participant 3 stated, “Effort and you put your effort forward. It is the encouragement. You need all the encouragement you can get when you [*sic*] going to school and that'll help you out in the long run” (Transcript 3, p. 3, lines 30-32).

Out of the researcher’s one theme, a 100% overlap with the external auditor’s theme was present. The researcher’s only theme was intelligence can be developed. The external auditor stated, “Parent does not think kids are born smart” (C. Wu, personal communication, February 19, 2020). The researcher and external auditor discussed the code and agreed to keep the researcher’s wording.

Table 41

Themes and Codes for Parents’ Perceptions of Origin of Intelligence Development

Theme or Code	Total/Percentage (N = 3)	Example Participant Quotes
Intelligence can be developed.	3 (100%)	“Some people say that kids are born smart, but I don’t think so.” “I think if you pull it apart, he’ll be on the right mindset. If you don’t, he’s not going to be successful you know.”

Integration

Creswell and Plano Clark (2011) stated the integration occurs when data collection and data analysis are linked. Fetters, Curry, and Creswell (2013) stated that linking can occur through the approaches of connecting, building, merging, and/or embedding. Integration may occur through one or more of these approaches during one research study. Three (i.e., connecting, building, and merging) of these approaches were utilized for this study. *Connecting* occurred by linking one data source to another data

source through sampling (Fetters et al., 2013). The study's focus group participants were selected from the participants who completed the survey. The researcher integrated the quantitative and qualitative data at the design level by using an explanatory, sequential research design. In this design, quantitative data were collected and analyzed by the researcher during the first phase. In the next phase, the researcher used the quantitative findings to develop qualitative focus group questions, which is referred to as *building* (Fetters et al., 2013). *Merging* occurred when the researcher analyzed and compared multiple databases (Fetters et al., 2013). The descriptive statistics from the quantitative survey datasets (i.e., teachers and parents) and themes and codes from the qualitative focus group data showed several relationships among the data sources, which will be presented in table format.

Growth mindset familiarity. Several connections existed among the quantitative teacher and parent surveys and the qualitative codes and themes from the teacher and parent focus groups. The quantitative results indicated that over half of the teacher participants had not received training in fostering a growth mindset in students with disabilities (See Table 42). One of the teacher participants shared that parents do not expose their children with disabilities to certain tasks because they did not feel their children could do it. Participant 1, who was a teacher, stated,

> They always make [*sic*] their mind that, "My kids cannot do it." I'm just talking from my class onwards. So, I do see my parents, they do see their kids cannot do it, so they do not expose them and that basically affects the whole day. So I believe that parents have to see beyond that, but they don't see it and that affect their achievement. (Transcript 1, p. 2, lines 28-32)

Table 42 details the integration of data from the teacher and parent surveys and focus groups. Based on the codes identified from the focus groups, teacher and parents perceived that encouragement, praise and attention were important and positive for students. Based on the quantitative data, teacher and parent participants felt that they integrated growth mindset practices in school and at home. In the scale, Teacher Familiarity with Growth Mindset, when teacher participants were asked to rate their personal familiarity with growth mindsets using a five-point scale, 40.8% of the teacher participants rated themselves as *Not at All Familiar*, *Slightly Familiar,* or *Moderately Familiar* with growth mindsets. In the scale, Parent Familiarity with Growth Mindset, when parent participants were asked to rate their personal familiarity with growth mindsets, 31.3% of parent participants rated themselves as *Not at All Familiar*, *Slightly Familiar,* or *Moderately Familiar* with growth mindsets. Furthermore, in the scale, Classroom Interaction, when teacher participants were asked to rate how frequently they engaged in nine different practices using a five-point scale, 92.6% of the teacher participants indicated that they praised students for their intelligence *A Few Times a Week* or *Every Day*. In the scale, Home Interaction, when parents were asked to rate how frequently they engaged in nine different practices using a five-point scale, (93.8%) of parent participants indicated that they praised students for their mind *A Few Times a Week* or *Every Day*. Although the majority of the teacher and parent participants rated themselves as being familiar with growth mindset, the findings indicated that a high level of practices were used that did not foster growth mindsets. In the scale, Teacher Comments to Students, when teacher participants were asked to rate each statement's effectiveness at encouraging students to learn with a growth mindset, 59.3% of the

teacher participants rated the comment, “Look how smart you are,” as *Very Effective* and *Extremely Effective*. In the scale, Parent Comments to Students, 96.9% of parent participants rated the same comment as *Very Helpful* and *Extremely Helpful*.

Table 42

Survey and Focus Group Comparison for Growth Mindset Familiarity

Teacher Focus Group Theme/Code	Parent Focus Group Theme/Code	Teacher Survey Question	Teacher Survey Response	Parent Survey Question	Parent Survey Response
Encouragement, praise, and attention were important.	Encouragement, praise, and attention were positive.	In the scale, Teacher Familiarity with Growth Mindset, participants were asked to rate their personal familiarity with growth mindsets using a five-point scale.	40.8% of the teacher participants rated themselves as *Not at All Familiar*, *Slightly Familiar*, or *Moderately Familiar* with growth mindsets.	In the scale, Parent Familiarity with Growth Mindset, participants were asked to rate their personal familiarity with growth mindsets.	31.3% of parent participants rated themselves as *Not at All Familiar*, *Slightly Familiar*, or *Moderately Familiar* with growth mindsets.
Encouragement, praise, and attention were important.	Encouragement, praise, and attention were positive.	In the scale, Classroom Interaction, participants were asked to rate how frequently they engaged in nine different practices using a five-point scale.	92.6% of the teacher participants indicated that they praised students for their intelligence *A Few Times a Week* or *Every Day*.	In the scale, Home Interaction, participants were asked to rate how frequently they engaged in nine different practices using a five-point scale.	93.8% of parent participants indicated that they praised students for their mind *A Few Times a Week* or *Every Day*.
Encouragement, praise, and attention were important.	Encouragement, praise, and attention were positive.	In the scale, Teacher Comments to Students, participants rated each statement’s effectiveness at encouraging students to learn with a growth mindset using a five-point scale.	59.3% of the teacher participants rated the comment, “Look how smart you are” as *Very Effective* or *Extremely Effective*.	In the scale, Parent Comments to Students, participants rated if each statement helped students to learn with a growth mindset using a five-point scale.	96.9% of parent participants rated the comment, “Look how smart you are” as *Very Helpful* or *Extremely Helpful*.

Teacher Focus Group Theme/Code	Parent Focus Group Theme/Code	Teacher Survey Question	Teacher Survey Response	Parent Survey Question	Parent Survey Response
Integration of growth mindset with positive learning environment.	Perseverance when studying was needed to succeed.	In the scale, Integration of Mindset into Teaching, participants were asked to rate the extent to which they had integrated the concept of students' growth mindset into their teaching expectations and practices using a five-point scale.	48.2% of the teacher participants gave a rating of *Very Integrated* or *Extremely Integrated*.	In the scale, Integration of Mindset into Parenting, participants were asked to rate the extent to which they had mixed the concept of students' growth mindset into their parenting beliefs and ways using a five-point scale.	71.9% of the parent participants gave a rating of *Very Mixed* or *Extremely Mixed*.

Maslow's Hierarchy of Needs. Table 43 details the integration of data from the teacher and parent surveys and focus groups. Based on the codes identified from the focus groups, teacher participants perceived that Maslow's Hierarchy of Needs strongly affected student achievement. A parent focus group theme associated with Maslow's Hierarchy of Needs was integration of growth mindset with positive learning environment. In the teacher scale, Factors Affecting Students Achievement, when participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale, 74.1% of the teacher participants felt that school safety was an *Extremely Important* factor that affected student achievement. In the parent scale, Factors Affecting Student Achievement, when participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale, 90.6% of participants rated school safety as *Very Important or Extremely Important.* The consistent theme could have derived from the population characteristics (i.e., high level of low socioeconomic statuses).

Table 43

Survey and Focus Group Comparison for Maslow's Hierarchy of Needs

Teacher Focus Group Theme/Code	Parent Focus Group Theme/Code	Teacher Survey Question	Teacher Survey Response	Parent Survey Question	Parent Survey Response
Maslow's Hierarchy of Needs strongly affected student achievement.	Integration of growth mindset with positive learning environment.	Teacher participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale.	74.1% of the teacher participants felt that school safety was an *Extremely Important* factor that affected student achievement.	Parent participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale.	90.6% of the parent participants gave a rating of *Very Important or Extremely Important* for school safety.

Malleability of intelligence. Table 44 details the integration of data from the teacher and parent surveys and focus groups. Based on the codes identified from the focus groups, teachers and parents perceived that intelligence can be developed. In the scale, Teacher Perceptions of Students, when teacher participants were asked to rate the ease or difficulty of teaching students with specific mindsets and characteristics using a five-point scale, 68.5% of the teacher participants rated teaching students with the belief that intelligence is malleable as *Easy* or *Very Easy.* In the scale, Parent Perceptions of Students, when participants were asked to rate a teacher's ability to teach students with specific mindsets and characteristics using a five-point scale, 78.1% of the parent participants rated teaching students with the belief that intelligence can change as *Easy* or *Very Easy*. If growth mindset practices were being implemented appropriately, the ratings should be higher regarding the item related to teaching students with the belief that intelligence is malleable and can change (Dweck, 1999, 2006).

Table 44

Survey and Focus Group Comparison for Malleability of Intelligence

Teacher Focus Group Theme/Code	Parent Focus Group Theme/Code	Teacher Survey Question	Teacher Survey Response	Parent Survey Question	Parent Survey Response
Intelligence can be developed.	Intelligence can be developed.	Teacher participants were asked to rate the ease or difficulty of teaching students with specific mindsets and characteristics using a five-point scale.	68.5% of the teacher participants rated teaching students with the belief that intelligence is malleable, as *Easy* or *Very Easy*.	Participants were asked to rate a teacher's ability to teach students with specific mindsets and characteristics using a five-point scale.	68.5% of the parent participants rated teaching students with the belief that intelligence can change as *Easy* or *Very Easy*.

Parent involvement. Table 45 details the integration of data from the teacher and parent surveys and focus groups. Based on the codes identified from the focus groups, teachers and parents perceived that parents' belief in education was important. In the teacher scale, Factors Affecting Students Achievement, when participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale, 63.0% of the teacher participants felt that parental support and engagement was an *Extremely Important* factor that affected student achievement. In the parent scale, Factors Affecting Student Achievement, when participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale, 75.0% of the parent participants felt that parental support and effort was an *Extremely Important* factor that affected student achievement.

Table 45

Survey and Focus Group Comparison for Parent Involvement

Teacher Focus Group Theme/Code	Parent Focus Group Theme/Code	Teacher Survey Question	Teacher Survey Response	Parent Survey Question	Parent Survey Response
Parent expectations about skill development.	Parent Belief in Education.	Teacher participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale.	63.0% of the teacher participants felt that parental support and engagement was an *Extremely Important* factor that affected student achievement.	Parent participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale.	75.0% of parent participants felt that parental support and effort was an *Extremely Important* factor that affected student achievement.

Summary

The purpose of this study was to compare beliefs and perceptions of growth mindset between P-12 teachers and parents. This chapter consisted of quantitative findings, qualitative findings, and the integration of both types of data. In the quantitative phase of this study, all P-12 teachers and parents were invited to participate in a survey. The survey participants included 54 valid teacher cases and 32 valid parent cases. In the qualitative phase of the study, the focus group participants included three teachers and three parents. In the quantitative data analysis, descriptive statistics were conducted to summarize the teacher and parent survey participants' response. In the qualitative analysis, pattern coding was used to identify themes and subthemes based on the transcripts from the teacher and parent focus groups. The findings will be analyzed in Chapter V.

Key Finding 1

The themes and codes identified from the focus groups indicated that teacher and parents felt encouragement, praise, and attention were important and positive for students. In the scale, Classroom Interaction, when teachers were asked to rate how frequently they engaged in nine different practices using a five-point scale, 92.6% of the teacher participants indicated that they praised students for their intelligence *A Few Times a Week* or *Every Day*. In the scale, Home Interaction, when parents were asked to rate how frequently they engaged in nine different practices using a five-point scale, 93.8% of parent participants indicated that they praised students for their mind *A Few Times a Week* or *Every Day*. The data from both the teacher and parent items regarding praising students for their mind and intelligence were indicative of the problem in education related to false growth mindsets. In the scale, Teacher Comments to Students, when teacher participants were asked to rate each statement's effectiveness at encouraging students to learn with a growth mindset, 59.3% of the teacher participants rated the comment, "Look how smart you are," as *Very Effective* and *Extremely Effective*. In the scale, Parent Comments to Students, 96.9% of parent participants rated the same comment as *Very Helpful* and *Extremely Helpful*.

Key Finding 2

Themes and codes, such as Maslow's Hierarchy of Needs theory, were identified from both teacher and parent focus groups as having a strong effect on student achievement. In the teacher scale, Factors Affecting Students Achievement, when teacher participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale, 74.1% of the teacher participants felt that school safety

was an *Extremely Important* factor that affected student achievement. In the parent scale, Factors Affecting Student Achievement, when participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale, 90.6% of participants rated School Safety as *Very Important or Extremely Important.*

CHAPTER V

DISCUSSION

Summary of the Study

False growth mindsets have been a problem in education and continue to be spread amongst educational entities and organizations worldwide (Stanford MCHRI, 2018). A plethora of research pertaining to fixed and growth mindsets exists in educational entities and organizations around the world (Dweck, 1999). This study addressed the gap in literature focused on the exposure levels and usage associated with growth mindset theory and practices by teachers and parents. The findings from this study support the need of creating professional development opportunities and parent workshops focused on the development and practice of growth mindsets.

Analysis of the Findings

The researcher utilized an explanatory, sequential mixed methods research design. Morse and Niehaus (2009) stated that a mixed methods research design, when conducted with purposeful care, could be a stronger design versus a single research method design because validity and understanding are enhanced, enriched, and expanded by verifying results from another perspective with the supplemental component. The purpose of this study was to compare beliefs and perceptions of growth mindset between P-12 teachers and parents. The study was guided by three research questions.

1. (Quantitative) What are the beliefs of teachers related to growth mindsets?

2. (Quantitative) What are the beliefs of parents related to growth mindsets?
3. (Qualitative) How do teacher perceptions of their knowledge of growth mindsets compare to parent perceptions of their knowledge of growth mindsets?

Research Question 1 Analysis

Student praise. Based on the quantitative findings, the teacher participants utilized practices that did not foster growth mindsets. In the scale, Classroom Interaction, when teachers were asked to rate how frequently they engaged in nine different practices using a five-point scale, 92.6% of the teacher participants responded that they praised students for their intelligence *A Few Times a Week* or *Every Day*. According to the Education Week Research Center (2016) study, which used a national sample, 49% of the teacher participants responded that they praised students for their intelligence *A Few Times a Week* or *Every Day*. Haphazardly, teachers may use approaches that do not foster a growth mindset due to a lack of training regarding the proper use of growth mindset practices (Education Week Research Center, 2016; Gross-Loh, 2016; Stanford MCHRI, 2018). In the scale, Teacher Comments to Students, when teacher participants were asked to rate each statement's effectiveness at encouraging students to learn with a growth mindset, 59.3% of the teacher participants rated the comment, "Look how smart you are," as *Very Effective* or *Extremely Effective*. In the Education Week Research Center (2016) study, which used a national sample, 25% of the teacher participants rated the same comment *Very Effective* or *Extremely Effective*. Similarly, findings from the parent survey indicated a high level of practices that did not foster growth mindsets. Dweck (2006) suggests utilizing feedback with students that focuses on their growth towards

mastering a particular skill rather than praising them for being smart. Due to the improper use of growth mindset strategies, false growth mindsets continue to spread amongst educational entities, organizations, and parenting styles around the world (Stanford MCHRI, 2018). Dewitt and Hattie (2017) discussed the disappointment that they both shared regarding the haphazard manner growth mindsets had been applied by various individuals. When growth mindset is conveyed as only praising students when they try hard, a fixed mindset can be triggered (Stanford MCHRI, 2018). When used properly, growth mindset theory-based strategies can increase achievement significantly (Dweck et al., 2013). According to growth mindset experts, such as Dweck (2006), growth mindsets are best fostered when teachers not only praise effort, but encourage learners to acquire specific approaches and strategies when learning with growth mindset interventions (Blackwell et al., 2007; Chen et al., 2016; Education Week Research Center, 2016; Leggett, 2016).

Teacher perceptions. Based on the quantitative findings, a moderate to high level of teacher survey participants felt that teaching students with the belief of malleable intelligence was *Easy* or *Very Easy*. In the scale, Teacher Perceptions of Students, 68.5% of the teacher participants felt that teaching students with the belief of malleable intelligence was *Easy* or *Very Easy*. According to the Education Week Research Center (2016) study, which used a national sample, 76% of the teacher participants felt that teaching students with the belief of malleable intelligence was *Easy* or *Very Easy*. Dweck et al. (2017) found that motivational frameworks showed process praise affected fourth-grade students' achievement through their trait beliefs (i.e., the belief intelligence is

malleable versus fixed), rather than through learning goals that the participants created (i.e., easy versus challenge preference).

Integration of mindset. Based on the quantitative findings, the teacher participants did not integrate growth mindset practices in the classroom on a consistent basis. In the scale, Integration of Mindset into Teaching, when teacher participants were asked to rate the extent to which they had integrated the concept of students' growth mindset into their teaching expectations and practices using a five-point scale, 48.2% of the teacher participants gave a rating of *Very Integrated* or *Extremely Integrated*. According to the Education Week Research Center (2016) study, which used a national sample, 68% of the teacher participants gave a rating of *Very Integrated* or *Extremely Integrated*. Researchers, such as Ng (2018), Vedder-Weiss and Fortus (2013), and Yeager et al. (2012), have indicated that student behaviors and outcomes, which consist of academic achievement, engagement, and willingness to attempt new challenges, were related to mindsets. Furthermore, Claro et al. (2016) found that students who had a growth mindset were buffered against the deleterious effects that poverty has on student achievement. Dweck suggests schools and entire school systems exist that have transformed and revolutionized student achievement due to educators' proper integration of growth mindsets in their classrooms and schools (Stanford MCHRI, 2018).

Student achievement. Based on the quantitative findings, teacher participants believed that school safety and parental involvement were factors that weighed heavily on student achievement. In the scale, Factors Affecting Student Achievement, when teacher participants were asked to rate the importance of a variety of factors to student achievement using a five-point scale, 74.1% of the teacher participants felt that school

safety was an *Extremely Important* factor that affected student achievement. Creating an engaging and positive learning environment is one of the most powerful tools educators can utilize to encourage their students to learn (Conroy et al., 2009). When teacher participants were asked to rate the importance of a variety of factors to student achievement on a five-point scale, 63.0% of the teacher participants felt that parental support and engagement was an *Extremely Important* factor that affected student achievement. Based on the Education Week Research Center (2016) findings, which used a national sample, 91% of the teacher participants felt that parental support and engagement was an *Extremely Important* factor that affected student achievement. Fraser (2018) indicated that one of the major factors that attributed to the success of the growth mindset approach was parents' understanding of why the new approach was implemented and working at the school.

Educational leaders. Based on the quantitative findings, some of the lowest rated items pertained to administrators' awareness and participation regarding growth mindsets. In the scale, Fostering a Growth Mindset, 16% of the teacher participants rated the item, "Administrators at my school are good at fostering a growth mindset in students," as *Disagree* or *Strongly Disagree*. According to the Education Week Research Center (2016) study, which used a national sample, 44% of the teacher participants rated the same item as *Disagree* or *Strongly Disagree*. Guidera (2014), Silbaugh (2016), and Miles (2018) indicated that the positive effects associated with educational leaders participating in and providing professional development opportunities for teachers could aid in the possible elimination of false growth mindset notions. Dweck suggests that the result of possible teacher misconceptions regarding growth mindset may cause a lack of

focus on growth mindset's purpose of increasing learning by helping students develop strategies that can increase their learning (Gross-Loh, 2016; Education Week Research Center, 2016).

Research Question 2 Analysis

Based on the quantitative findings, the parent participants utilized practices that did not foster growth mindsets, although many of them had received growth mindset training. In the scale, Preparation to Address Mindset, 91% of parent participants selected a rating of *Agree* or *Strongly Agree* on the parent workshops item. Additionally, 85% of the participants selected either *Agree* or *Strongly Agree* on the item, "Parent PTO informational sessions/trainings." Like teacher participants, a high percentage of parents had received growth mindset training, but they continued to practice behaviors that did not foster a growth mindset. For example, the comment, "You are one of the top students in the class," was rated by 84% of parent participants as *Very Effective* or *Extremely Effective*. Furthermore, with the item, "Praising your child for earning good scores or grades," 96.9% of parent participants chose a frequency of *A Few Times a Week* or *Every Day*. As previously mentioned, Dweck (2006) suggests utilizing feedback with students that focuses on their growth towards mastering a particular skill rather than praising them for being smart. When Dweck et al. (2017) conducted a study to examine the same children from the Gunderson et al. (2013) study, the results of the study indicated that toddlers who received process praise predicted children's mathematics and reading academic achievement in elementary school 7 years later. When data were further analyzed, motivational frameworks showed that process praise affected fourth-grade students' achievement through their trait beliefs (i.e., the belief intelligence is malleable

versus fixed), rather than through the learning goal that the participants created (i.e., easy versus challenge preference). Boswell (2012) found that previous research has shown how much unearned praise from parents and teachers, from an early age, can be linked to students' sense of academic entitlement.

Research Question 3 Analysis

Although teacher participants were more knowledgeable of growth mindset and practices that fostered growth mindset compared to parents, the findings showed several commonalities that were related to the themes of familiarity of growth mindset, growth mindset beliefs, and the origin of intelligence. All of the teacher and parent participants (n = 6) felt that encouragement, praise, and attention were positive and helped students learn. Each of the six participants felt that intelligence can be developed through effort. The importance of persevering through a task was mentioned consistently in each of the focus groups. Factors, such as love, safety, and food, which are associated with Maslow's Hierarchy of Needs, were shared among the six participants. Maslow's Hierarchy of Needs suggests that individuals have five basic categories of needs (i.e., physiological, safety, love, esteem, and self-actualization; Hopper, 2020). Participant 5, who was a teacher, stated, "If the children are hungry, if they're not getting enough sleep, all those things affect the learning" (Transcript 5, p. 1, lines 26-27).

Pacing was another continuous code amongst all teacher and parent participants. Four out of the six participants (i.e., one teacher and three parents) felt that breaking tasks down into smaller and more coherent steps and encouraging students to persevere through these steps would help increase student achievement. Stress, fragile emotions, and a lack of focus amongst students were consistent codes collected from the parent

participants. Williams (2012) found that, when compared to the implicit theory, efficacy was a superior predicator of positive emotional outcomes. Self-efficacy, the belief in one's self and abilities, was a code found within two teacher transcripts and two parent transcripts. Participant 3 stated, "The children sometimes don't praise themselves enough to say that they can do it" (Transcript 3, p. 2, lines 22-23). For example, an extensive amount of research related to expectancy effects indicated that parents' and teachers' perceptions of an individual student's level of competence were aligned with the student's perception of his or her own competence (Frome & Eccles, 1998).

Limitations of the Study

A study's limitations are methodology or design characteristics that could influence or impact the interpretation of the research findings (Price & Murnan, 2004). The limitations included a lack of generalizability regarding teachers' and parents' beliefs and perceptions of mindsets in locations other than the South Georgia Title 1 school district. Additionally, teacher and parent attrition between phases was another limitation. Several teachers and parents showed an interest in participating in the focus groups; however, when invitations were sent to teacher and parent participants, the researcher was unable to secure the ideal number of participants. One possible reason could have been due to the focus groups being scheduled during the middle of December. In the qualitative phase of the study, the external auditor felt that Question 5 and Question 6 regarding teacher and parent beliefs should have been revised for clarity purposes. Moreover, the external auditor added a suggestion of piloting the questions first. Another limitation was that some teacher participants were also parents of students in the school district who completed the parent survey, which affected the independent sample.

Recommendations for Future Research

Based on the study's findings, future studies could extend the findings of this study. Due to the lack of generalizability to parents and teachers in locations other than the South Georgia Title 1 public school system, a similar study could be conducted in other educational settings, such as home schools, charter schools, private schools, and public schools that are not Title 1. Additionally, due to the study's emerging themes that were not highlighted in previous studies related to growth mindset, such as school safety, Maslow's Hierarchy of Needs, and social and emotional learning, future studies could be conducted on the effect that those factors have on the development of a growth mindset. Furthermore, a future study could focus on P-12 school administrators' growth mindset beliefs compared to teachers' and parents' growth mindset beliefs. If the focus group protocol were to be utilized again, Question 5 and Question 6, which related to participants' beliefs, should be revised and piloted to ensure participants understand what the questions are asking.

Implications of the Study

Implications from the findings of this study include the need for effective teacher and parent trainings related to correct growth mindset practices. Based on the findings, both parent and teachers had received growth mindset training. Nevertheless, the findings from this study also indicated that a high level of practices that did not foster a growth mindset continued to be implemented. Practices, such as praising students for their intelligence and encouraging students by telling them a new topic would be easy to learn, were widely utilized by teachers and parents. Parents (who are often referred to as students' first teachers) and teachers may be haphazardly creating false growth mindsets

due to a variety of barriers, such as lack of proper training, lack of familiarity, and/or perceptions, which may impede student achievement. Dweck discussed the use of false growth mindsets in a presentation at Stanford University. She believes the origin of false growth mindsets, although unintentional, begins with a lack of understanding by individuals who utilize growth mindset strategies for the purpose of encouraging individuals to face challenges with a growth mindset (Stanford MCHRI, 2018). The findings in this study extend the knowledge in the field of education regarding the beliefs and perceptions of teachers and parents related to growth mindsets. The study also supported the existence of this problem in education related to the spread of false growth mindsets due to a lack of adequate training or the haphazard use of inappropriate growth mindset practices due to improper training (Stanford MCHRI, 2018).

Dissemination of the Findings

District leaders, school administrators, and parents in the South Georgia Title 1 school system where the study was conducted would be interested in this study's findings. Over the next two years, the researcher could provide virtual and/or face-to-face informational sessions for stakeholders, including district educational leaders, building educational leaders, teachers, and parents. Educational personnel (i.e., district leaders, building leaders, and teachers) would participate in the same virtual and/or face-to-face informational session. A parent informational session would be held separately. The sessions would be recorded for individuals to watch at their convenience if they were unable to attend the informational session on the scheduled day and time. Each session would consist of sharing the research topic, why the research topic was derived, and key findings from the study. When discussing how the topic originated, the researcher would

share that research has suggested the positive role of the wider community around a school that could impact the sustainability and success of interventions (Meyers et al., 2012). Moreover, Fraser (2018) felt that schools should consider the research concerning community involvement with interventions given the possible support or hindrance that occurs outside of the school day, which could impact the development of growth mindsets. The researcher would conclude by suggesting professional learning and parent workshop opportunities for teachers and parents focused on the proper utilization of growth mindset practices. Parent participants would be encouraged to recruit other parents for additional workshop opportunities. In addition, time would be allocated for questions and answers. During the school year over the next two years, the researcher could also conduct book studies with teachers that focused on growth mindset and discuss expectations related to teacher implementation of appropriate growth mindset practices. Furthermore, the researcher could observe teachers using growth mindset practices, provide support when needed, and schedule peer observations when teachers who utilize proper growth mindset practices. Schools leaders would be encouraged to display visual reminders of appropriate growth mindset practices throughout the school buildings for reference and reminders.

Conclusion

Efforts in educational settings are increasing towards building cultures of growth mindsets that promote positive outcomes for all stakeholders. Nevertheless, a continuous cycle of false growth mindsets continues to spread amongst educational entities and parenting practices worldwide. Dweck, one of the world's leading researcher's in motivation, suggests that, due to the spread of false growth mindsets, many educators,

students, and parents have been misguided regarding the mindset theory. The collection of data from this study provided findings to support the need of creating professional development opportunities and parent workshops that focus on developing growth mindsets at school and at home. Dweck suggests that schools and school systems exist that have transformed and revolutionized student achievement (Stanford MCHRI, 2018). When interventions that focus on growth mindset are implemented over time, students' achievement tends to improve (Blackwell et al., 2007). Current brain research evidence reveals that, with the right teaching and messages, every student can be successful academically and achieve at the highest levels in school (Boaler & Dweck, 2016). If false growth mindsets continue to spread, individuals will fail to notice the astounding value that previous research has found regarding when, how, with which students, and to what ends growth mindsets should be applied (Dewitt & Hattie, 2017).

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APPENDICES

Appendix A

Education Week Survey (2016) for Teachers

When completing this survey, there are no right or wrong answers. Any thoughts and opinions you have are acceptable. To be entered into the random drawing for a $50 VISA gift card, all questions must have a response.

Demographic Information:

What grade level do you teach? Check the grade level that applies.

☐ Pre-K ☐ K ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th ☐ 5th ☐ 6th ☐ 7th ☐ 8th ☐ 9th ☐ 10th

☐ 11th ☐ 12th

Teacher Perceptions of Students

Respondents will rate their ease or difficulty of teaching students with specific mindsets and characteristics using a five-point scale, where 1 represents *Very Difficult* and 5 represents *Very Easy*.

How easy or difficult do you believe it is to teach students with the following characteristics?

Students who ...

- Have grit and perseverance
- Believe that intelligence is malleable
- Have innate ability in the subject you teach
- Believe that intelligence is fixed or static

Importance of Student Beliefs

Respondents will rate their level of agreement for 11 different student beliefs or attitudes that are important to school success using a four-point scale, where 1 represents *Strongly Disagree* and 4 represents *Strongly Agree*.

To what extent do you agree that the following student beliefs are important to school success?

Students believe that ...

- They can learn from failure and are willing to try new things in school
- They can find help at school when they have difficulties
- Their work in school has value for them
- They can be successful in school
- They belong in the school community
- Administrators and teachers know students personally
- Their academic abilities will increase through effort
- They have the ability to learn challenging material
- Administrators and teachers treat all students equally and fairly

- They have some autonomy and choice in the topics they study
- Doing well in school will lead to a good career

Familiarity with Growth Mindset
Respondents will rate their familiarity on a five-point scale, where 1 represents *Not at all Familiar* and 5 represents *Very Familiar*.

How familiar are the following people with growth mindset?
- You personally
- Administrators in your school
- Teachers in your school

Factors Affecting Student Achievement
Respondents will rate the importance of a variety of factors to student achievement on a five-point scale, where 1 represents *Not at all Important* and 5 represents *Extremely Important*.

How important are the following factors to student achievement?
- Student engagement and motivation
- Teaching quality
- School climate
- School safety
- Social and emotional learning
- Parental support and engagement
- Use of growth mindset with students
- School discipline policies
- Family background

Fostering a Growth Mindset
Respondents will rate their level of agreement with certain student behaviors and outcomes that are associated with a student's growth mindset using a four-point scale, where 1 represents *Strongly Disagree* and 4 represents *Strongly Agree.*

To what extent do you agree with the following statements?
- All students can and should have a growth mindset
- Fostering a growth mindset in students is part of my job duties and responsibilities
- I am good at fostering a growth mindset in my students
- Administrators at my school are good at fostering a growth mindset in students
- Other teachers at my school are good at fostering a growth mindset in students
- I have adequate solutions and strategies to use when students do not have a growth mindset

Outcomes Linked to Growth Mindset
Respondents will rate their level of agreement with certain student behaviors and outcomes that are associated with a student's growth mindset using a four-point scale, where 1 represents *Strongly Disagree* and 4 represents *Strongly Agree.*

To what extent do you agree that the following are associated with a student's growth mindset?

- Excitement about learning
- Persistence in schoolwork
- High levels of effort on schoolwork
- Frequent participation in class discussions
- Good attendance
- Consistent completion of homework assignments
- Frequent participation in extracurricular activities
- Good course grades
- High standardized test scores

Professional Development

Training Experiences
Respondents will rate their level of experience with professional development and training related to growth mindset using a four-point scale, where 1 represents *I have had some training and want more,* 2 represents *I have had some training and do not want more,* 3 represents *I have had no training and want some,* and 4 represents *I have had no training and do not want any.*

Which of the following best describes your experience with professional development and training related to growth mindset?

Training Topics
If the respondents have had training, they will indicate any topics discussed during those training sessions.

Which of the following topics have been addressed in your training and professional development on growth mindset? (*Select all that apply.)*

- Encouraging students to try new strategies when they are struggling to learn a concept
- Helping students see error or failure as an opportunity to learn and improve
- Helping students understand that the brain is like a muscle and physically changes with training
- Using growth mindset with specific student groups (e.g., students with disabilities)
- Collaborating with colleagues to teach using growth mindset
- Developing your own classroom-based assessments to capture growth mindset
- Curriculum materials and resources to teach using growth mindset
- Using growth mindset to teach standards in other academic subjects

- Using growth mindset to teach state standards in English/language arts and literacy
- Using growth mindset to teach state standards in mathematics
- Other (box for text entry)

Preparation to Address Mindset
Respondents will rate their level of agreement with two sources of professional development and training using a four-point scale, where 1 represents *Strongly Disagree* and 4 represents *Strongly Agree.*

My training has prepared me to address student growth mindset.
- Pre-service training
- In-service training and professional development

Classroom Practices

Classroom Interaction
Respondents will rate how frequently they engage in nine different practices using a five-point scale, where 1 represents *Never* and 5 represents *Every Day*.

- Encouraging students to try new strategies when they are struggling
- Praising students for their learning strategies
- Suggesting that students seek help from other students on schoolwork
- Telling students that it is alright to struggle, not everyone is good at a given subject
- Praising students for their intelligence
- Praising students for their effort
- Encouraging students who are already doing well to keep trying to improve
- Praising students for earning good scores or grades
- Encouraging students by telling them a new topic will be easy to learn

Teacher Comments to Students
Respondents will be given a list of eight comments that teachers might say to students. They will rate each statement's effectiveness at encouraging students to learn with a growth mindset using a five-point scale, where 1 represents *Not at all Effective* and 5 represents *Extremely Effective*.

How effective are these statements in encouraging students to learn with a growth mindset?

- I love how you stayed at your desk and kept your concentration in order to keep working on that problem.
- Great job. You must have worked really hard on this.
- See, you are good at this subject. You got an A on your last test.
- I really like the way you tried all kinds of strategies on that problem until you finally got it.

- You really studied for your test and your improvement shows it.
- You are one of the top students in the class.
- This is easy, you will get this in no time.

Integration of Mindset into Teaching
Respondents will rate the extent to which they have integrated the concept of students' growth mindset into their teaching expectations and practices using a five-point scale, where 1 represents *Not at all Integrated* and 5 represents *Extremely Integrated*.

To what extent have you integrated growth mindset into your teaching expectations and practice?

Effect on Teaching and Learning
Respondents will rate their level of agreement with student outcomes that are associated with integrating growth mindset using a four-point scale, where 1 represents *Strongly Disagree* and 4 represents *Strongly Agree.*

To what extent do you agree that integrating growth mindset into your teaching will produce the following results?

- Improve student learning
- Improve my own instruction and classroom practice
- Significantly change my classroom instruction
- Connecting with students facing economic, family, or personal challenges
- Convincing fellow teachers to implement a growth mindset in their classrooms
- Grappling with standardized testing and assessment policies
- Addressing resistance from school administrators

Survey Completion Incentive
If you would like to be entered in a random drawing for a $50 gift card, please enter your first and last name and email address in the provided space.

First and Last Name _____

Email Address _____

Focus Group Participation
If you would like to participate in a focus group about growth mindset, please enter your name and email address in the provided space.

First and Last Name _____

Email Address _____

Appendix B

Permission to Use the *Education Week Survey* (2016)

From: Sterling Lloyd <Slloyd@epe.org>
Sent: Wednesday, January 30, 2019 1:03 PM
To: brown_jennifer2@columbusstate.edu
Cc: Holly Yettick <Hyettick@epe.org>
Subject: RE: permission to utilize a survey
Hi Jennifer,
Thank you for your inquiry regarding use of the survey instrument. It will be fine for you and your student to use it in your research. Please cite the Education Week Research Center where appropriate based on customary research standards.
Feel free to contact me should you have additional questions or need more information. Good luck with your research.

Sterling

Sterling C. Lloyd
Assistant Director
Education Week Research Center
301-280-3100
slloyd@epe.org

From: brown_jennifer2@columbusstate.edu <brown_jennifer2@columbusstate.edu>
Sent: Wednesday, January 30, 2019 12:48 PM
To: Sterling Lloyd <Slloyd@epe.org>
Subject: permission to utilize a survey
Good afternoon, Dr. Lloyd! I am Dr. Jennifer L. Brown, and one of my doctoral students would like to study teachers' perceptions of mindset in the classroom. If she wanted to utilize the Mindset in the Classroom survey developed by the Education Week Research Center, how would she request and obtain permission to utilize the survey? Please advise. I look forward to hearing from you soon.

Thank you,
Jennifer

Appendix C

Adapted *Education Week Survey* (2016) for Parents

When completing this survey, there are no right or wrong answers. Any thoughts and opinions you have are acceptable. To be entered into the random drawing for a $50 gift card, all questions must have a response.

Demographic Information:

Please select the grade level(s) your child/children are enrolled in? (*Check all that apply.*)

☐ Pre-K ☐ K ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th ☐ 5th ☐ 6th ☐ 7th ☐ 8th ☐ 9th ☐ 10th

☐ 11th ☐ 12th

Perspectives on Mindset

Parent Perceptions of Students

Respondents will rate a teacher's ability to teach students with specific mindsets and characteristics using a five-point scale, where 1 represents *Very Difficult* and 5 represents *Very Easy.*

How easy or difficult do you believe it is for teachers to teach students with the following characteristics?

Students who ...

- Have drive and determination
- Believe that intelligence can change
- Have specific abilities at birth
- Believe that intelligence cannot change

Importance of Student Beliefs

Respondents will rate their level of agreement for 11 different student beliefs ~~or attitudes~~ that are important to school success using a four-point scale, where 1 represents *Strongly Disagree* and 4 represents *Strongly Agree*.

To what extent do you agree that the following student beliefs are important to school success?

Students believe that ...

- They can learn from failure and are willing to try new things in school
- They can find help at school when they have difficulties
- Their work in school has value for them
- They can be successful in school
- They belong in the school community
- Administrators and teachers know students personally
- Their academic abilities will increase through effort
- They have the ability to learn challenging material

- Administrators and teachers treat all students equally and fairly
- They have some autonomy and choice in the topics they study
- Doing well in school will lead to a good career

Familiarity with Growth Mindset
Respondents will rate their familiarity on a five-point scale, where 1 represents *Not at all Familiar* and 5 represents *Extremely Familiar*.

How familiar are the following people with growth mindset?

- You personally

Factors Affecting Student Achievement
Respondents will rate the importance of a variety of factors to student grades on a five-point scale, where 1 represents *Not at all Important* and 5 represents *Extremely Important*.

How important are the following factors to student grades?

- Student effort and goals
- Teaching quality
- School climate
- School safety
- Social and emotional learning
- Parental support and effort
- Use of growth mindset with students
- School discipline policies
- Family background

Fostering a Growth Mindset
Respondents will rate their level of agreement with certain student behaviors and outcomes that are related to a student's growth mindset using a four-point scale, where 1 represents *Strongly Disagree* and 4 represents *Strongly Agree*.

Growth mindset is the belief that the mind can change.

To what extent do you agree with the following statements?

- All students can and should have a growth mindset
- Fostering a growth mindset in students is part of my parenting duties and responsibilities
- I am good at fostering a growth mindset with my child
- Administrators at my child's school are good at fostering a growth mindset in students
- Other teachers at my child's school are good at fostering a growth mindset in students
- I have plans and ideas to use when my child does not have a growth mindset

Outcomes Linked to Growth Mindset

Respondents will rate their level of agreement with certain student behaviors and outcomes that are related to a student's growth mindset using a four-point scale, where 1 represents *Strongly Disagree* and 4 represents *Strongly Agree.*

To what extent do you agree that the following are related to a student's growth mindset?

- Excitement about learning
- Dedication to schoolwork
- High levels of effort on schoolwork
- Frequent participation in class discussions
- Good attendance
- Consistent completion of homework assignments
- Frequent participation in afterschool activities
- Good course grades
- High standardized test scores

Parent Training/Workshops

Training Experiences

Respondents will rate their level of experience with parent workshops and training related to growth mindset using a four-point scale, where 1 represents *I have had some training and want more,* 2 represents *I have had some training and do not want more,* 3 represents *I have had no training and want some,* and 4 represents *I have had no training and do not want any.*

Which of the following best describes your experience with parent workshops and training related to growth mindset?

Training Topics

If the respondents have had training, they will indicate any topics discussed during those training sessions.

Which of the following topics have been addressed in your training and parent workshops on growth mindset? (*Select all that apply.)*

- Encouraging your child to try a new plan when they are struggling to learn a concept
- Helping your child see error or failure as a chance to learn and improve
- Helping your child know that the brain is like a muscle and physically changes with training
- Using growth mindset with specific children (e.g., students with disabilities)
- Talking with other parents about growth mindset
- Curriculum materials and resources to reinforce using growth mindset at home
- Using growth mindset to support other school subjects at home
- Using growth mindset to support English/language arts and literacy at home
- Using growth mindset to support mathematics at home
- Other (box for text entry)

Preparation to Address Mindset
Respondents will rate their level of agreement with two sources of parent workshops and training using a four-point scale, where 1 represents *Strongly Disagree* and 4 represents *Strongly Agree.*

My training has prepared me to address student growth mindset.

- Parent PTO informational sessions/trainings
- Parent Workshops

Home Practices

Home Interaction
Respondents will rate how frequently they engage in nine different ways using a five-point scale, where 1 represents *Never* and 5 represents *Every Day*.

- Helping your child to try new strategies when they are struggling
- Praising your child for their learning strategies
- Asking your child seek help from other students on schoolwork
- Telling your child that it is alright to struggle, not everyone is good at a given subject
- Praising your child for their mind
- Praising your child for their effort
- Helping your child who is already doing well to keep trying to improve
- Praising your child for earning good scores or grades
- Helping your child by telling them a new topic will be easy to learn

Parent Comments to Students
Respondents will be given a list of eight comments that parents might say to their children. They will rate if each statement helps students to learn with a growth mindset using a five-point scale, where 1 represents *Not at all Helpful* and 5 represents *Extremely Helpful*.

How effective are these statements in helping your child to learn with a growth mindset?

- I really like the way you tried all kinds of ideas until you finally got it.
- You really studied for your test and your progress shows it.
- I love how you kept your focus in order to keep working on that problem.
- Great job. You must have worked really hard on this.
- See, you are good at this subject. You got an A on your last test.
- Look at how smart you are.
- You are one of the top students in the class.
- This is easy, you will get this in no time.

Integration of Mindset into Parenting
Respondents will rate the extent to which they have mixed the concept of students' growth mindset into their parenting beliefs and ways a five-point scale, where 1 represents *Not at all Mixed* and 5 represents *Extremely Mixed*.

To what extent have you mixed growth mindset into your parenting beliefs and ways?

Effect of Parenting and Learning
Respondents will rate their level of agreement with student outcomes that are related to mixing growth mindset using a four-point scale, where 1 represents *Strongly Disagree* and 4 represents *Strongly Agree.*

To what extent do you agree that mixing growth mindset into your parenting will create the following results?

- Progress with my child's learning
- Progress with my own parenting beliefs and ways
- Significantly change my parenting beliefs and ways

Survey Completion Incentive
If you would like to be entered in a random drawing for a $50 VISA gift card, please enter your first and last name and email address in the provided space.

First and Last Name _____

Email Address _____

Focus Group Participation
If you would like to participate in a focus group about growth mindset, please enter your name and email address in the provided space.

First and Last Name _____

Email Address _____

Appendix D

Growth Mindset: Teacher and Parent Focus Group Questions

Script for Researcher: *When participating in the focus groups, there are no right or wrong answers. Any thoughts and opinions you have are acceptable. To be entered into the random drawing for a $50 VISA gift card, the teacher/parent must remain as an active participant until the end of the focus group session. At the end of the focus group, I will ask you to write your name and email address on an index card if you would like to be entered into the random drawing. The drawing will be held after the fourth focus group session concludes.*

VII. Familiarity

1. What do you think about encouragement, praise, and attention?
2. Do you encourage your student(s) to persevere through challenging task? Why or why not?
3. Do you think all students embrace challenges in the classroom? Why or Why not?
4. What factors do you feel strongly affect student achievement? Why or why not?

II. Beliefs

5. How do teachers' beliefs about their students' abilities affect student achievement?
6. How do parents' beliefs about their students' abilities affect student achievement?
7. How have you integrated student growth mindset into your expectations and practice?
8. What are the most significant challenges you have faced in trying to foster a growth mindset in students?

III. Summary

9. How do you encourage your student(s) when they are faced with failure?
10. Can intelligence be developed through effort? Why or why not?

Appendix E

CSU IRB Approval Letter

Institutional Review Board
Columbus State University

Date: 11/18/2019
Protocol Number: 20-038
Protocol Title: Growth Mindsets: A Mixed Method Study of Teachers Beliefs Compared to Parents
Principal Investigator: Jadedra Gilmore
Co-Principal Investigator: Jennifer Brown

Dear Jadedra Gilmore:
The Columbus State University Institutional Review Board or representative(s) has reviewed your research proposal identified above. It has been determined that the project is classified as exempt under 45 CFR 46.101(b) of the federal regulations and has been approved. You may begin your research project immediately.
Please note any changes to the protocol must be submitted in writing to the IRB before implementing the change(s). Any adverse events, unexpected problems, and/or incidents that involve risks to participants and/or others must be reported to the Institutional Review Board at irb@columbusstate.edu or (706) 507-8634.
If you have further questions, please feel free to contact the IRB.
Sincerely,
Manasa Mamidi, Graduate Assistant
Institutional Review Board
Columbus State University

Appendix F

Informed Consent: Participating School District

[redacted]
Superintendent
[redacted]
[redacted]
[redacted]

Dear Dr. [redacted]
I am enrolled in Columbus State University's Curriculum and Leadership doctoral program. The subject of my dissertation is *Growth Mindsets: A Mixed-Methods Study of Teachers' Beliefs Compared to Parents*. Dr. Jennifer Brown, my dissertation chair this dissertation is under, can be contacted at brown_jennifer2@columbusstate.edu.

This explanatory sequential mixed methods study will compare beliefs and perceptions of growth mindset between P-12 teachers and parents. From grade levels P-12, all teachers and parents, district-wide, will be invited to participate in an online survey related to their growth mindset beliefs and perceptions. In the qualitative phase of this study, twelve teachers and parents from the elementary, middle, and high schools will participate in four focus group sessions based on their descriptive quantitative survey scores. Four $50 gift cards used in a random drawing will serve as incentives for two survey and two focus group participants.

Your permission to conduct research with P-12 teachers and parents will be greatly appreciated. All teacher and parent focus groups will be held after school hours in a school conference room. Any additional communication with participants will also be held after school hours.

If the terms and conditions are acceptable, please provide a letter from the school district that indicates the cooperation from the district in the proposed study. Additionally, please check the three items on the following page that are applicable and include them in your district letter. Thank you for your time and consent.

Sincerely,
Jadedra Gilmore
Doctoral Candidate
Curriculum and Leadership (Leadership Track)
College of Education & Health Professions
Columbus State University

Check any applicable:

☐ I hereby authorize Jadedra Gilmore to access [redacted] County P-12 Schools to access participants, send online surveys, and conduct focus groups related to the study titled, *Growth Mindsets: A Mixed-Methods Study of Teachers' Beliefs Compared to Parents*

☐ I hereby authorize Jadedra Gilmore to recruit [redacted] County P-12 Schools teachers and parents through district P-12 schools (recruitment letters, emails, and web page post) for participation in the study entitled, *Growth Mindsets: A Mixed-Methods Study of Teachers' Beliefs Compared to Parents*

☐ I hereby authorize Jadedra Gilmore to collect and utilize data that does not contain any teacher or parent participants' information, of the organization, facility, university, institution, or association identified above when publishing results from the study entitled, *Growth Mindsets: A Mixed-Methods Study of Teachers' Beliefs Compared to Parents*

Appendix G

Recruitment Email

11/12/19

Dear Teacher,
My name is Jadedra Gilmore, and I am currently a Math and Science Academic Coach and previous teacher. I am also enrolled in Columbus State University's Curriculum and Leadership doctoral program. The subject of my dissertation is *Growth Mindsets: A Mixed Methods Study of Teachers' Beliefs Compared to Parents*.

I am sending you this email to ask your permission to participate in an online survey. The information you provide will serve as a basis for planning professional development to improve student achievement. If you choose to participate in the electronic web-based survey, your identity will remain anonymous, and your answers will remain confidential. Your identity will not be attached to the survey. The survey should take no more than 20 minutes to complete.

If you have any questions or comments about this survey, please feel free to contact me at gilmore_jadedra@columbusstate.edu or my chairperson, Dr. Jennifer Brown, at brown_jennifer2@columbusstate.edu. When your survey is completed and I receive it, you will have the opportunity to be entered into a random drawing to win a $50 VISA gift card. I will randomly select one teacher survey participant. Thank you in advance for your time and participation. The survey link is below.

Sincerely,

Jadedra Gilmore
Doctoral Candidate
Columbus State University

Appendix H

Recruitment Announcement for Teachers and Parents

Your input concerning your beliefs about student learning is needed! Please go to your student's school webpage, and click the "Beliefs About Student Learning" link. You will be prompted to enter your email address to receive an online survey to complete via email. If the survey is completed, you can be entered in a random drawing to win a $50 VISA gift card. You may also be selected to participate in a focus group for another chance to win a $50 VISA gift card. Thank you in advance for your participation.

Appendix I

IRB Modification Approval

Nov 21, 2019

The submitted modification requests for Protocol 20-038 have been approved by the IRB.

Please note any further changes to the protocol must be submitted in writing to the IRB before implementing the change(s). Any adverse events, unexpected problems, and/or incidents that involve risks to participants and/or others must be reported to the Institutional Review Board at irb@columbusstate.edu or (706) 507-8634.

If you have any questions or concerns, please feel free to contact the IRB.

Sincerely,
Manasa Mamidi, Graduate Assistant
Institutional Review Board
Columbus State University

Appendix J

Hard Copy Recruitment Letter for Teacher and Parents

11/12/19

Dear Teacher/Parent,
My name is Jadedra Gilmore, and I am currently a Math and Science Academic Coach and previous teacher. I am also enrolled in Columbus State University's Curriculum and Leadership doctoral program. The subject of my dissertation is *Growth Mindsets: A Mixed Methods Study of Teachers' Beliefs Compared to Parents*.

I am sending you this letter to ask your permission to participate in an online survey. The information you provide will serve as a basis for planning professional development/parent workshops to improve student achievement. If you choose to participate in the electronic web-based survey, your identity will remain anonymous, and your answers will remain confidential. Your identity will not be attached to the survey. The survey should take no more than 20 minutes to complete. If you choose to complete the survey, please refer to the announcement on your school's website entitled "Beliefs About Student Learning".

If you have any questions or comments about this survey, please feel free to contact me at gilmore_jadedra@columbusstate.edu or my chairperson, Dr. Jennifer Brown, at brown_jennifer2@columbusstate.edu. When your survey is completed and I receive it, you will have the opportunity to be entered into a random drawing to win a $50 VISA gift card. I will randomly select one teacher survey participant and 1 parent survey participant. Thank you in advance for your time and participation.
Sincerely,

Jadedra Gilmore
Doctoral Candidate
Columbus State University

Appendix K

Informed Consent Form (Web Survey)

You are being asked to participate in a research project conducted by Jadedra Gilmore, a doctoral student in the College of Education & Health Professions at Columbus State University. Dr. Jennifer Brown, the Director of Doctoral in Education, will be supervising this study.

I. Purpose:
The purpose of this project is to compare beliefs and perceptions of growth mindset between P-12 teachers and parents.

II. Procedures:
1. Using the participating school district's email group, a recruitment email will be sent to all teachers.
2. A recruitment announcement will be posted on the school webpages for teachers and parents. The teachers and parents will be prompted to enter their email address, and anonymous survey link will be sent to their email for completion.
3. A hard copy letter will be sent to teachers via their school's mailbox and sent home with students to parents asking them to participate in the survey by logging on to their school's homepage/child's school homepage to view the recruitment announcement.
4. The beginning of the web-based survey will include information regarding informed consent. The participants will be prompted to choose the appropriate selection within the web-based survey as to whether they agree or disagree to participate in the study. If the participants choose not to participate, the survey will be concluded, and the response will be recorded. If the participants choose to participate, they will be prompted to respond to each of the survey items.
5. A random drawing for the teacher participants and parent participants will be held when the survey window closes.
6. After the data has been downloaded from Qualtrics, any identification will be deleted from the dataset, including IP addresses, names, and email addresses.
7. After cleaning the data, the researcher will code the data for analysis.
8. The dataset will be uploaded in SPSS statistical program.
9. Descriptive statistics will be conducted by group (i.e., teacher and parent) to answer Research Questions 1 and 2. The researcher will use the descriptives, including the mean and standard deviation, to summarize the participants' responses.
The time to complete this survey should not exceed 20 minutes. The data may be used for future research projects.

III. Possible Risks or Discomforts:
There are no possible risks or discomforts associated with this study. The participants will have the option to stop the survey at any time if the individual feels the potential risk or emotional discomfort.

IV. Potential Benefits:
Parent workshops and teacher professional development sessions may be created due to the study's findings.

V. Costs and Compensation:
The survey participants will be asked to enter their first and last names and email addresses if they would like to be entered into a random drawing for a $50 gift card. Two $50 VISA gift cards will serve as incentives for survey participants. One $50 VISA gift card will be given to a teacher survey participant, and one $50 VISA gift card will be given to a parent survey participant. The random drawing for the survey will occur after the survey window closes.

VI. Confidentiality:
After the data have been downloaded from Qualtrics, conducting the random drawings, and selecting focus group participants, any identifying information will be deleted from the dataset, including IP addresses, names, and email addresses. Confidentiality of the collected data will be maintained by the researcher using a password-protected computer at the PI's home. The electronic data will be stored on the password protected computer and will be available only to the researcher for a minimum of 10 years. The paper data will be stored in a locked cabinet at the PI's home. After 10 years, all paper data, including signed informed consents, will be shredded, and all electronic files will be deleted from the PI's home computer.

VII. Withdrawal:
Your participation in this research study is voluntary. You may withdraw from the study at any time, and your withdrawal will not involve penalty or loss of benefits.

For additional information about this research project, you may contact the Principal Investigator, Jadedra Gilmore at [redacted] or gilmore_jadedra@columbusstate.edu. If you have questions about your rights as a research participant, you may contact Columbus State University Institutional Review Board at irb@columbusstate.edu.

I have read this informed consent form. If I had any questions, they have been answered. By selecting the *I agree* radial and *Submit*, I agree to participate in this research project. All participants must be 18 years of age or older to participate in this study.

- ○ I agree.
- ○ I do not agree

Submit

Appendix L

Informed Consent Form (Focus Groups)

I. Purpose:
The purpose of this project is to compare beliefs and perceptions of growth mindset between P-12 teachers and parents.

II. Procedures:
1. The summarized survey data for the teacher and parent groups will be ordered from least to most and divided into four quartiles.
2. Participants with means in the Quartile 1 will be considered the low perspectives group, and participants with mean in the Quartile 4 will be considered the high perspectives group.
3. From the lo w perspectives group, three teachers and three parents from the elementary, middle, and high school levels will be selected purposively to participate in focus groups.
4. From the high perspectives group, three teachers and three parents from the elementary, middle, and high school levels will be selected purposively to participate in focus groups.
5. The researcher will contact the selected participants via email to schedule the four group sessions.
6. After the focus group participants have been selected, any identification will be deleted from the dataset, including names, and email addresses.
7. At the beginning of each focus group an informed consent form will be distributed for completion to all participants. The participants will be prompted to read and sign the informed consent to indicate whether they agree or disagree to participate in the study. If a participant chooses not to participate, the focus group session will be end for that participant, and the participant will be thanked for his or her time and asked to exit the conference room. If the participant chooses to participate, he or she will remain in the conference and participate in the questioning-answering session.
8. Four focus group sessions will be conducted. The focus group sessions will be audio recorded in a conference room of the participating P-12 schools after school hours.
9. At the end of each focus group session, participants will be asked to write their name and email address on an index card if they would like to be entered into the random drawing.
10. A random drawing for the teacher participants and parent participants will be held after the conclusion of Focus Group 4.
11. After the transcription using the Rev.com web-based program, the researcher will code the responses by highlighting themes and subthemes using pattern coding. The research will compare focus group data to survey data to answer Research Question 3. The expected duration of a focus group session is 60 minutes. The data may be used in future research projects.

III. Possible Risks or Discomforts:
There are no possible risks or discomforts associated with this study. A debriefing will be available with a qualified district employee if any participant needs counseling regarding the social or economic potential risks after all focus group sessions.

IV. Potential Benefits:
Parent workshops and teacher professional development sessions may be created due to the study's findings.

V. Costs and Compensation:
At the end of each focus group session, participants will be asked to write their name and email address on an index card if they would like to be entered into the random drawing. Two $50 VISA gift cards will serve as incentives for focus group participants. One $50 VISA gift card will be given to a teacher focus group participant, and one $50 VISA gift card will be given to a parent focus group participant. The random drawing will occur after the conclusion of Focus Group 4.

VI. Confidentiality:
After the data have been downloaded from Qualtrics, conducting the random drawings, and selecting focus group participants, any identifying information will be deleted from the dataset, including IP addresses, names, and email addresses. Confidentiality of the collected data will be maintained by the researcher using a password-protected computer at the PI's home. The electronic data will be stored on the password protected computer and will be available only to the researcher for a minimum of 10 years. The paper data will be stored in a locked cabinet at the PI's home. After 10 years, all paper data, including signed informed consents, will be shredded, and all electronic files will be deleted from the PI's home computer.

VII. Withdrawal:
Your participation in this research study is voluntary. You may withdraw from the study at any time, and your withdrawal will not involve penalty or loss of benefits.

For additional information about this research project, you may contact the Principal Investigator, Jadedra Gilmore at [redacted] or gilmore_jadedra@columbusstate.edu. If you have questions about your rights as a research participant, you may contact Columbus State University Institutional Review Board at irb@columbusstate.edu.

I have read this informed consent form. If I had any questions, they have been answered. By signing this form, I agree to participate in this research project. All participants must be 18 years of age or older to participate in this study.

Signature of Participant:
_____Date:_____

Appendix M

Focus Group Debriefing

Teacher/Parent Participants,

Thank you for your participation. If you feel you need any support after the completion of this focus group, please feel free to contact Dr. [redacted] for counseling.

Jadedra Gilmore