5-2020

An Instrumental Case Study: Growth Mindset Instructional Best Practices for Learning Disabled Students

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This dissertation, directed and approved by the candidate's committee, has been accepted by the College of Graduate and Professional Studies of Abilene Christian University in partial fulfillment of the requirements for the degree

Doctor of Education in Organizational Leadership

Dr. Joey Cope, Dean of the College of Graduate and Professional Studies

Date: April 3 2020

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by

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May 2020

Dedication

I dedicate this work first to my Lord Jesus Christ for it is through him I can do all things. Secondly, I dedicate this to my husband, Mark Cornell, who is my rock, the love of my life, and my best friend. If it wasn't for his support, love, acceptance, encouragement, and never-ending servant heart, this life-long goal would have never been reached. I could have never done this without you, Mark. I love you.

Acknowledgments

I would like to acknowledge my three children, Shelby Cornell, Griffen Cornell, and Brendan Cornell, whose unending encouragement and support became wind beneath my wings. My fuel for this journey has come from Shelby with the admiration, love and support she gave me always saying she didn't know how I was able to do this with all I had on my plate; Griffen demonstrated his quiet love, support, and his dedication to pursue a Master's degree after watching his parents; and finally Brendan who had to share me with my doctoral work all through high school career, and who was the inspiration for my research study – I love you all so very much.

My deepest gratitude goes to Dr. Jennifer Butcher who has worked with me through this process with love, grace, patience, and so much respect. She has always worked to be true to my passion in my research. She dedicated herself to my success at the beginning of our journey together and has never wavered from that dedication and support. I could not have asked for a better chair.

I owe a great deal of respect and gratitude to Dr. Sandra Harris for her guidance and wisdom in helping me determine the methodology of this research. Also, I thank her for the quick and thorough feedback on my work that she consistently provided. Much thanks to her for her kind words and support in expressing to me the value of this study. I have been blessed to have her on my committee.

Deep thanks also go to Dr. Christie Bledsoe who helped guide my decisions on methodology and whose wisdom and skills sharpened me as a researcher and as a writer. She has been a valuable resource and a dedicated committee member whom I have great respect and admiration.

Thanks to Candice Jasmer for her partnership in this doctoral journey. She has been my support, my sounding board, my shoulder to cry on, my inspiration, and my dear friend. It has been an honor.

Finally, thanks to my parents and friends who supported me and who put up with my absence more than they liked but have always been my cheerleaders.

Abstract

The problem that drove this study was that students who struggle in school, especially those with a non-intelligence-based learning disability, suffer from a fixed mindset after years of feelings of failure in school. This mindset causes them to develop maladaptive approaches to learning that inhibit success. The purpose of this study was to describe the best practices of reading teachers who have a reputation for high student achievement and who adhere to a growth mindset in an effort to build a growth mindset culture with their students. This qualitative instrumental case study was conducted through interviews of eleven reading teachers/specialists from both elementary and secondary education. The findings indicated that students who have a fixed mindset of learning due a learning disability often demonstrate maladaptive approaches to learning that include shutting down, avoidance behaviors, and acting out behaviors. The findings revealed several strategies that can effectively help these struggling students move from a fixed mindset to more of a growth mindset. These strategies included creating a safe and trustful class environment, creating success experiences for students, and teaching brain science and mindset theory. Finally, the findings revealed obstacles that teachers face in their work to move these students to a growth mindset to improve their achievement and the practices they use to overcome those obstacles.

Keywords: learning-disabled, growth mindset, fixed mindset, academic achievement, teacher strategies, struggling students, brain science instruction

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Chapter 1: Introduction

There are many variables that affect student achievement including socio-economic status, family stability, involvement in extracurricular activities and diagnosed learning and/or reading disabilities (Baird, Scott, Dearing, & Hamill, 2009; Jensen, 2009; Payne 2013). Overall, one of the strongest determiners of student achievement is that of academic self-efficacy (Baird Scott, Dearing, & Hamill, 2009; Claro, Paunesku & Dweck, 2016; Haft, Myers, & Hoeft, 2016; King, 2012; Mangels, Butterfield, Lamb, Good, & Dweck, 2006; Paunesku, et al., 2015; Schleider & Weisz, 2016; Talsma, Schuz, Schwarzer, & Norris, 2018; Yeager & Dweck, 2012). According to Dweck (2006), the implicit theory of intelligence refers to a person's belief that intelligence is malleable (Incremental Theory), or whether it is determined by heredity and does not change (Entity Theory).

Dweck (2006) used the terms "growth" for the belief that intelligence is malleable and "fixed mindsets" to refer to the belief that intelligence is unchangeable. Dweck presented a strong theory to explain why some students are successful in school while others struggle. Some key developers of a fixed mindset include many of the environmental contributors such as socio-economic status or family stability but also include how parents, teachers, and other adults contribute to their belief that intelligence is limited (Dweck, 2006; Haimovitz & Dweck, 2017; Rattan, Good & Dweck, 2012). This chapter provides the background of the study, the statement of the problem, purpose statement, theoretical framework, significance of the study and key terms.

Background

Students with a growth mindset understand that failure is part of learning and believe that they are able to achieve when challenged intellectually; conversely, students with a fixed mindset

who are faced with an academic challenge or failure attribute the failure to a lack of ability or intelligence (Aditomo, 2015; Dweck, 2006; Yeager & Dweck, 2012). Students with a growth mindset believe they can attain their learning goal, they see failure as part of learning, and they enjoy the challenge in the process (Dweck, 2006). Fixed mindset students constantly feel they must prove their intelligence through performance to the detriment of learning (Claro et al., 2016; Dweck, 2006; Paunesku, et al., 2015; Yeager & Dweck, 2012).

Too often the effects of the fixed mindset are that students avoid challenges and do not engage in learning because they think "they are not good at this" or "I am not smart enough for this" (Dweck, 2006). This thinking causes them to dread the challenges and failures associated with learning and work hard to avoid it (Baird et al., 2009; Dweck, 2006, p. 8). Many students, especially those diagnosed with learning/reading disabilities, struggle in school and later in life because they have a fixed mindset of learning and intelligence (Baird, et al., 2009; Claro, et al., 2016; Haft, et al, 2016; King, 2012). Without appropriate interventions, these students are at risk for dropping out, have low expectations for their future, and develop adjustment problems in overall well-being including self-esteem, relationship harmony, negative affect (mood), and overall motivation in life (King, 2012).

Causes and consequences. A child's mindset is something that is developed over the years from parents, caregivers, and other important mentors in their lives (Dweck, 2006; Haimovitz & Dweck, 2017; Rattan, et al., 2012). Aditomo (2015) asserted:

> Children's mindsets are likely to be shaped by feedback from caregivers. Praising a child and attributing his/her success to intelligence, as opposed to effort or process, encourages the development of a fixed mindset (Pomerantz & Kempner, 2013) and can undermine the persistence and enjoyment of an activity (Mueller & Dweck, 1998). (p. 201)

Teachers also play a part in creating a fixed mindset in students by trying to comfort them after failure by saying such things as "math is not for everyone" instead of teaching them that

failure is part of learning (Aditomo, 2015, p. 201; Rattan, et al., 2012). According to Rattan et al. (2012), teachers and college professors often develop fixed mindsets about the students, determine the student's ability in the subject, and do not expect improvement after their very first assessment. Consequently, students have reported that they understood that they were not smart enough for the subject and felt that the professor was less engaged in their instruction.

According to Aditomo (2015), "Individuals could attribute success and failure to factors within (intelligence, effort) vs. outside of one's self (social structures, pure luck): and stable (intelligence) vs. changeable factors (effort)" (p. 202). For students with a fixed mindset, intelligence is a stable and uncontrollable factor, and when students attribute academic failure or challenge to this stable and uncontrollable factor, "this will prompt negative emotions, de-motivation, and maladaptive behaviors such as withdrawal" (p. 202). Many with a fixed mindset will avoid situations in which they might struggle or fail because these experiences undermine their sense of their intelligence (Claro, et al., 2016). Often these students will refuse to take a test or assignment, or rebel against a perceived classroom challenging activity by acting out; others will become the class clown to avoid others' perceptions that they might not be smart (Baird, et al., 2009; Dweck, 2006). If these feelings of inadequacy continue, students can experience anxiety in school performance or even depression (Schleider & Weisz, 2016).

Highly affected population. Children diagnosed with a learning disability (LD) have been found to be highly susceptible to an entity theory of intelligence or fixed mindset (Baird, et al., 2009; Claro, et al., 2016; Haft, et al., 2016). Baird, et al., (2009) found:

> Students with a learning disability were more likely to possess low academic self-efficacy, to believe that intelligence was fixed and nonmalleable, to prefer performance over learning goals, and to interpret the exertion of effort as meaning they possessed limited levels of ability. (p. 881)

Baird et al., (2009) examined the cognitive self-regulation of youth with learning disabilities (LD) and found that students with LD believe their experience with academic failure and the label of learning disabled to be the determiner of their intellectual ability. In addition, students with LD tend to avoid challenging learning, are highly negatively affected by a perceived failure, and therefore do not put effort into learning because it is easier to choose to fail, than it is to put effort into learning only to fail and then feel unintelligent (Baird, et al., 2009). According to Haft, et al. (2016), children with the specific learning disability in the area of reading were more likely than students without an LD to have low self-esteem, face peer rejection, and develop anxiety or depression which created a vicious cycle of negative emotions and social interactions further limiting cognitive capacity and perpetuates academic failure.

Statement of the Problem

There are many variables that affect student achievement, but one of the strongest determiners is internal mindset or beliefs regarding learning and intelligence (Baird et al., 2009; Claro, et al., 2016; Haft et al., 2016; King, 2012; Yeager & Dweck, 2012). Many secondary school students, especially those diagnosed with learning disabilities (LD) such as Dyslexia and Attention Deficit Hyperactivity Disorder (ADHD) struggle in school and later in life, because they have developed a fixed mindset of learning and intelligence (Baird et al., 2009; Claro, et al., 2016; King, 2012). After years of feeling unsuccessful in school, students with LD begin to equate their academic struggles with their intellect even though their disability is not related to intelligence (Baird et al, 2009). The problem is not just about how they achieve academically but how it affects the way they feel about their ability to learn.

Consequently, student with LD are at a high risk for dropping out of school, they do not believe they will be able to achieve high in their life, and struggle with adjustment problems with

self-worth, relationships, negative affect, and have low motivation overall in their life (King, 2012). Baird et al. (2009) found that students with LD possess low academic self-efficacy, perceive intelligence is fixed and may interpret the label, learning disability, as being a determiner of intelligence. Therefore, the problem further expands because students with LD develop a sense of hopelessness in their intellectual ability which pervades not only academic achievement but also other life achievements.

Baird et al. (2009) further determined that students with LD develop maladaptive approaches to learning such as "avoiding challenges, experiencing negative affect, exhibiting poor persistence and task abandonment, and showing a deterioration in performance following failure" (p. 899). Students with LD possess more fix mindset characteristics with low self-efficacy which causes cognitive self-regulatory patterns that are counterintuitive to the learning process. Therefore, student with non-intelligent based learning disabilities are in serious need for specialized instruction to improve their chances in academics and in life. King (2012) noted that there have been several studies that have successfully moved struggling students from fixed to a growth mindset, but this particular problem in the LD demographics requires further research.

Purpose Statement

The purpose of this study was to describe the best practices of reading teachers who have a reputation for high student achievement and who adhere to a growth mindset in an effort to build a growth mindset culture with their students. Currently, growth mindset is generally described as a person's understanding that their intelligence and ability to learn and grow are based only on the amount of effort they put forth to learn, that failure is a part of the learning process, and because of this they often possess a resilience that is vital for great accomplishments in all areas of life (Dweck, 2006).

Theoretical Framework

This study was influenced by implicit theory of intelligence which is part of Bandura's social cognitive theory (Bandura, 1977). Within social cognitive theory, Bandura identifies the concept of self-efficacy or a person's belief in their own abilities. Within the study of self-efficacy theory, Bandura presents implicit theories of intelligence, which refers to a person's belief that intelligence is either malleable (incremental theory), or is determined by heredity and does not change (entity theory) (Bandura, 1977; Dweck, 2006). Dweck (2006) advanced the theory and developed the terms "growth" and "fixed mindsets" to refer to these belief systems. Students with a growth mindset understand that failure is part of learning and believe that they are able to achieve when challenged intellectually; conversely, students with a fixed mindset who are faced with an academic challenge or failure attribute the failure to a lack of ability or intelligence (Aditomo, 2015; Dweck, 2006; Yeager & Dweck, 2012). Students with a growth mindset believe they can attain their learning goal, they see failure as part of learning, and they enjoy the challenge in the process. Fixed mindset students constantly feel they must prove their intelligence through performance to the detriment of learning (Claro et al., 2016; Dweck, 2006; Paunesku, et al., 2015; Yeager & Dweck, 2012).

Research Questions

The following research questions guided the study:

RQ1. What best practices do reading teachers implement to build a growth mindset within struggling students?

RQ2. How do reading teachers with a growth mindset define a growth mindset culture?

RQ3. What have reading teachers perceived to be the benefits of cultivating growth mindset within students?

RQ4. What are the challenges, if any, encountered by reading teachers when developing a growth mindset within struggling students?

Definition of Key Terms

The following terms are key concepts I used in this research. For clarity purposes, definitions for each key concept are provided.

At-risk students. An "at-risk" student is generally defined as a student who is likely to fail at school. Texas Education Agency uses 13 different determiners for the at-risk code for a student that range from achievement through all 12 years of school to life situation such as socio-economic status, pregnancy, police records, and many other guiding determiners that have caused students historically to drop out of school (E0919 At Risk Indicator Code, 2010).

Attention deficit hyperactivity disorder. The Attention Deficit Hyperactivity Disorder (ADHD) is a "genetic and neurological condition that compromises the academic performance since the early literacy" (Capellini, 2006, p. v).

Dyslexia. "Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction" (Krause, 2015, p. 286).

Fixed mindset. Fixed mindset people believe their basic qualities, like their intelligence or talent, are simply fixed traits. They spend their time documenting their intelligence or talent instead of developing them. They also believe that talent alone creates success—without effort (Dweck, 2006).

Growth mindset. Growth mindset people believe that their most basic abilities can be developed through dedication and hard work—brains and talent are just the starting point. This view creates a love of learning and a resilience that is essential for great accomplishment (Dweck, 2006).

Learning disability. Kavale, Spaulding and Beam (2009) defined learning disability as "A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, write, spell, or do mathematical calculations" (p. 40).

Mindset. "Mindset is defined as a particular way of thinking; a person's attitude or set of opinions about something" (Zurawski & Mancini, 2016, p. 91).

Reading disability. A reading disability is when a student has a specific difficulty in learning to read: dyslexia, decoding-based reading or reading comprehension disorder (Haft et al., 2016).

Secondary reading class. A remedial reading class for students who struggle with reading in secondary education also referred to as supplemental reading instruction (Harmon et al., 2016; Wilkerson et al., 2016).

Self-efficacy. "People's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave." (Bandura, 1994, "Self-Efficacy," para 1).

Summary and Preview of Chapter 2

Students belief about their ability to learn or self-efficacy of learning is a key factor in student success (Dweck, 2006). Dweck's (2006) mindset theory is significant in understanding

how to move students to have positive academic self-efficacy by distinguishing the concepts of fixed mindset and growth mindset. A growth mindset is one that perceives one's potential to learn and grow intellectually through effort and failure (Dweck, 2006). A fixed mindset perceives that intelligence is pre-determined and cannot be changed and that failure is proof of intelligence level (Dweck, 2006). Those who have a growth mindset are able to push through struggles and persevere to achievement goals (Dweck, 2006). Those with the growth mindset will try to prove their intelligence and often become apathetic or indifferent to learning goals (Dweck, 2006; Yeager et al., 2016; Yeager & Dweck 2012). Moving students who have a fixed mindset to a growth mindset and improved achievement has been proven successful in many demographic groups through teaching brain science including neuroplasticity to students (Dweck, 2006; Yeager et al., 2016; Yeager & Dweck 2012). Students with non-intelligence-based learning disabilities are one of the highest percentages of students that struggle with achievement because of a fixed mindset of intelligence (Baird et al., 2009; Claro, et al., 2016; King, 2012). This study focused on the investigation of best practices of reading teachers to develop a growth mindset in students.

Chapter 2 provides a review of literature focusing on the topics in this study. The topical overview includes the conceptual framework, the power of a growth mindset, brain science instruction, teacher's role, and a review of teacher practices that have been utilized to improve a growth mindset in the classroom. In chapter 2, I look deeply at the literature surrounding students with learning disabilities, their challenges as struggling students, their self-efficacy, mindsets, and brain science intervention potential for the learning disabled.

Chapter 2: Review of Literature

The purpose of this study was to describe best practices of exceptional reading teachers who adhere to a growth mindset in an effort to build a growth mindset culture with their students. The research literature for this chapter was found using the ACU online library and Google Scholar. The strategies used to find research involved these key search words: learning disabled and fixed mindset, learning disabled and academic achievement, growth mindset interventions, implicit theories of intelligence, social cognitive theory, development of a growth mindset, mindset and ADHD, mindset and dyslexia, reading class and mindset, self-efficacy and low achievement, self-efficacy and learning disabled students, academic self-efficacy, teacher practices and growth mindset, teacher role and growth mindset, and brain science and academic achievement. Additionally, many articles and books were identified by the webpages and research lists of Carol Dweck and Albert Bandura from their Stanford University webpages. Research articles were also obtained from David S. Yeager's webpage on the University of Texas at Austin website.

This chapter provides a review of literature with a focus on the following: self-efficacy theory, social cognitive theory, implicit theories of intelligence, learning disabled self-efficacy and mindset, the power of a growth mindset, brain science interventions, and brain science intervention potential for students who struggle in reading which includes many students with varied learning disabilities. Additionally, this chapter will investigate the role of teachers, the teacher's mindset, and teacher practices shown to be effective in improving student self-efficacy, and thereby, student achievement.

Conceptual Framework

The foundational theory of this research comes from behavioral science or the study of why humans do what they do. Bandura (1986) presented a theoretical framework for analyzing human motivation, thought and action from a social cognitive perspective. Bandura's theory is expansive and established a key factor of motivation being self-efficacy. Later, Carol Dweck (2006), built on his theory to further define the characteristics that affect self-efficacy.

Social cognitive theory. Bandura (1986) posited:

> Social Cognitive Theory embraces an interactional model of causation in which environmental events personal factors, and behavior all operate as interacting determinants of each other. Reciprocal causation provides people with opportunities to exercise some control over their destinies as well as sets limits of self-direction. The conceptualization of personal determinations of psychosocial functioning accords a central role to cognitive, vicarious, self-regulatory, and self-reflective processes. (p. xi)

Bandura (2001) explained that humans have minds that are thoughtful, creative, reflexive, proactive and not just reactive, and also that the human mind is a powerful tool for processing the world around them (Bandura, 1986). According to Bandura (2001), human functioning is explained through two divergent routes of psychological theory. First, the cognitive working of the mind in relation to one's self functions to make desired things happen rather than just be reactive. The second area is that of social situations related to human development, adaptation, and change. Bandura (1991) suggested, "In the Social Cognitive Theory, human behavior is extensively motivated and regulated by the ongoing exercise of self-influence" (p. 248). Self-influence refers to the judgments one has about their own behavior, affective self-reaction which also includes the mechanism of self-efficacy.

Self-efficacy theory. Albert Bandura (1977) self-efficacy theory suggests that "expectations of personal ability or efficacy are derived from four principal sources of information: performance accomplishments, vicarious experience, verbal persuasion, and

physiological states" (p. 191). Bandura (1986) argued that "people's beliefs about their operative capabilities function is one set of proximal determinants of how they behave, their thoughts patterns, and the emotional reactions the experience to taxing situations" (p. 393). Bandura noted that people make decisions and choices every day all day that is very much affected by their belief in their abilities; therefore, it is imperative for a person to have reasonably accurate appraisals of their own ability. Bandura posited that people who overestimate their ability will choose activities that are above their ability while those who underestimate or misinterprets their abilities will take self-limiting steps that will affect successful functioning in all aspects of life. This concept is particularly applicable to the specific self-efficacy related to learning.

Academic self-efficacy or judgments about how well one is able to execute a specific academic behavior in a given context has been a key focus in the effort to understand why some students achieve academic success and others don't (Baird et al., 2006; Bandura, 1986; Costello & Stone, 2012; Dweck, 2006; Haft et al., 2016). Baird et al. (2009) stated:

> When compared to students who doubt their academic ability, students who believe in their ability to learn are more persistent, less anxious, experience more enjoyment, and have greater intrinsic interest, set more challenging learning goals, use more effective cognitive strategies, and ultimately perform better in learning situations. (pp. 882-883)

Talsma, Schuz, Schwarzer, & Norris (2018) concluded that self-efficacy is a crucial and powerful influence on academic performance, accounting for approximately a quarter of the variance outcomes of performance research. The chicken or the egg question has been the center of self-efficacy studies trying to determine if it is the academic performance that affects self-efficacy or vice-versa (Haselden, Sanders, and Sturkie, 2012; Talsma et al., 2018).

Haselden, Sanders, and Sturkie (2012) found that students with a weak locus of control in educational situations become more apathetic toward the academic process causing low self-efficacy and thereby low achievement. Talsma et al. (2018) concluded through their review of

research that it is commonly known that academic outcomes significantly affect self-efficacy, but much research also proves that academic self-efficacy does, in fact, affect performance. Through their own research, Talsma et al. determined that interventions that target self-efficacy will affect performance and increase the instances of positive performance which will improve self-efficacy.

Stajkovic, Bandura, Locke, Lee and Sergent (2018) studied the big five personality traits, which are conscientiousness, agreeableness, extraversion, openness to experience, emotional stability, and self-efficacy in relation to academic performance in three different conceptual models; they found that in all of them self-efficacy positively related to academic performance with conscientiousness and emotional stability being predictive of self-efficacy and performance in some models. Additionally, Umaru and Umma (2015) explained that emotional intelligence is the ability to be self-aware of emotions and their impact, to be able to self-manage by controlling one's emotions and impulses in changing circumstances, and to possess social awareness, which is the ability to sense, understand and react to other's emotions. Umaru and Umma argued that emotional intelligence is directly associated to locus-of-control and through their research determined that teaching strategies in emotional intelligence on locus of control improved students' academic self-efficacy.

Catalina, Stanescu, and Mohorea (2012) found a significant positive correlation between a student's emotional intelligence and their academic self-efficacy. Bandura, Pastorelli, Barbaranelli, and Caprara (1999) found that students in their study were depressed due to their belief in their academic inefficacy rather than their actual academic performance. In a longitudinal study, students perceived self-efficacy to regulate their learning activities at the junior high level contributed to their academic achievement in high school and their likelihood to

complete high school (Bandura, 2008). Additionally, students' self-efficacy rather than their actual academic achievement was the key determinant of their perceived occupational self-efficacy and preferred choice of work life (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001). Taking the theories of self-efficacy to help explain student achievement or lack of achievement, Dweck (2006) conducted years of research before presenting implicit theories of intelligence which has contributed important developments in the understanding of the psychology of learning and achievement.

Implicit theories of intelligence. Over the last 10 years, there has been a great deal of research done that demonstrates the importance that theories of intelligence and their effects on self-efficacy play in determining student success and academic achievement (Baird et al., 2009; Blackwell, Trzesniewski, & Dweck, 2007; De Castella & Byrne, 2015; Dweck, 2006; Haimovitz, Worminton, & Corpus, 2011; Jodrell, 2010; King, 2012; Leonard, 2008; Mangels et al., 2006; Rattan et al., 2012; Talsma et al., 2018; Yeager & Dweck, 2012; Yeager et al., 2016; Zheng, Gaumer, Erickson, Kingston, & Noonan, 2014). Blackwell, Trzesniewski, and Dweck (2007) asserted that students may hold two different implicit theories of intelligence.

Dweck (2006) argued that some students have an entity theory of intelligence or a fixed mindset in which they believe their intelligence is unchangeable, yet others may have an incremental theory of intelligence or a growth mindset understanding that their intelligence is malleable and can be developed through effort. Dweck dedicated her research to this and has determined that one's belief in their intelligence can determine their self-efficacy, motivation, achievement, and their ability to persevere through obstacles to develop grit (Duckworth, 2016; Laursen, 2015).

The fixed mindset (entity theory) is a key factor in students inability to be successful academically (Baird et al., 2009; Blackwell et al., 2007; Dweck, 2006; Dweck, 2008; Haimovitz et al., 2011; Haselden, Sanders, & Sturkie, 2012; King, 2012; Mangels et al., 2006; Paunesku et al., 2015; Talsma et al., 2018; Yeager & Dweck, 2012; Zheng et al., 2014). King (2012) reported that entity theory affects more than classroom achievement but also affects self-esteem, collective self-esteem, relationship harmony, mood, and overall human functioning. Once the significant effects of this mindset were established, researchers looked for answers to how this fixed mindset is developed in underachieving students (Baird et al., 2009; Blackwell et al., 2007; Dweck, 2006; Dweck, 2008; Haimovitz et al., 2011; Heselden et al., 2012; King, 2012; Mangels et al., 2006; Paunesku et al., 2015; Talsma et al., 2018; Yeager & Dweck, 2012; Zheng et al., 2014).

One of the key factors causing a fixed mindset is when students feel unsuccessful in school or experience failure often over a period of time (Aditomo, 2015; Baird et al., 2009; Haft et al., 2016; Haselden et al., 2012; Mangels et al., 2006). Moreover, Talma et al., (2018) extolled that performance has a much higher effect on self-efficacy than self-efficacy has on performance. Umaru and Umma (2015) added that emotional intelligence also plays a part in students' self-efficacy and mindset because their ability to sense, feel, know and judge emotions in mutual aid of one's thinking process will foster self-efficacy belief in an academic endeavor through their perceived locus of control.

Learning Disabled

Students who are diagnosed with a learning disability (LD) have been shown to consistently adopt a fixed mindset of intelligence (Baird, et al., 2009; Claro, et al., 2016; Haft, et al., 2016). Baird, et al. (2009) found:

> Students with a learning disability were more likely to possess low academic self-efficacy, to believe that intelligence was fixed and nonmalleable, to prefer performance over learning goals, and to interpret the exertion of effort as meaning they possessed limited levels of ability. (p. 881)

In their research, Baird et al., (2009) studied the cognitive self-regulation of youth with learning disabilities (LD) and found that students with LD believe that their experience with academic failure coupled with the label of learning disabled means that they have a low intelligence. In addition, Baird et al noted that LD students tend to avoid challenging learning, are highly negatively affected by a perceived failure, and therefore don't put effort into learning because it is easier to choose to fail, than it is to fail and it is attributed to intelligence.

According to Haft, et al. (2016), children labeled with a learning disability in the area of reading are highly susceptible to low self-esteem and develop social and emotional difficulties that include but are not limited to depression, anxiety, and difficulty with peer relationships which all further limit cognitive capacity and creates a vicious cycle of academic failure. Students who have been diagnosed with dyslexia and Attention Deficit Hyperactivity Disorder (ADHD) struggle in school and later doubt their abilities in life because of their fixed mindset of their ability to learn and their intelligence (Baird et al., 2009; Claro, et al., 2016; King, 2012). After years of feeling unsuccessful in school, LD students begin to equate their struggles with their intellect even though their disability is not related to intelligence (Baird et al., 2009; Claro, et al., 2016; King, 2012).

Consequently, LD students are at risk to drop out, have low expectations for their future, and develop adjustment problems in overall well-being, including self-esteem, relationship harmony, negative affect (mood), and overall motivation in life (King, 2012). Baird et al. (2009) found that LD students possess low academic self-efficacy, believe their intelligence is fixed and may interpret the label, learning disability, as being a determiner of intelligence.

Baird et al. (2009) further determined that students with LD develop maladaptive approaches to learning such as "avoiding challenges, experiencing negative affect, exhibiting poor persistence and task abandonment, and showing a deterioration in performance following failure" (p. 899). Thus, students with LD possess more fixed mindset characteristics with low self-efficacy which causes cognitive self-regulatory patterns that are counterintuitive to the learning process.

Schulte, Stevens, Elliott, Tindal, and Nesse (2016) reported in a longitudinal study that students with LD showed significant achievement gaps in reading more than general education students that began in the 3rd grade. Students with non-intellectual learning disabilities struggled significantly with word recognition and reading comprehension but this could vary depending on the disability. Their study noted significant improvement in reading gaps for LD students who received intensive reading intervention through reading groups or reading classes over their twelve years of school.

ADHD and dyslexia. Students with specific learning disabilities had the same normal intelligence of students who did not but often scored differently on intelligence tests because of their slower working memory and processing speed (Giofè & Cornoldi, 2015). Students with the specific learning disability of Attention Deficit Hyperactivity Disorder (ADHD) achieved the same intelligence levels as students without ADHD (Verma & Kushwaha, 2016). In fact, the students with ADHD had higher performance intelligence than students without ADHD, but they did have a lower verbal intelligence. Verma and Kushwaha (2016) determined that ADHD does not affect intelligence, as some would like to believe, but students with ADHD do struggled with the ability to apply the knowledge they have. ADHD is diagnosed on the basis of persistent,

developmentally atypical and impairing symptoms of inattention, hyperactivity and impulsivity (Maehler & Schuchardt, 2016).

Maehler and Schuchardt (2016) determined that students with ADHD or Dyslexia both have been determined to suffer with deficits in working memory. They stated, "Dyslexia corresponds with deficits in phonological loop and dyscalculia with deficits in visual-spatial sketchpad while ADHD have deficits in central executive working memory" (p. 341). Krause (2015) suggested that dyslexia and ADHD are similar in that students with dyslexia have sluggish attention shifting which makes transitioning between one activity to another difficult; specifically, they struggle with the transition from reading to writing or vise-versa. Because of these challenges caused by ADHD and the misinterpretation of their behavior in relation to their intelligence, many children with this and other learning disorders such as dyslexia suffer low self-efficacy, school anxiety, depression, psychosomatic disorders or antisocial behavior (Maehler & Schuchardt, 2016).

Gifted and talented with learning disabilities. Buica-Belciu and Popovici (2014) noted a group of students who often go unidentified are students who are gifted and talented but also have a learning disability. According to Buica-Belciu and Popovici:

> These students who are considered twice exceptional, have a higher-level intellectual ability, advanced vocabulary, exceptional comprehension of abstract concepts and ideas, productive imagination, subtle sense of humor, multiple and sophisticated interests, a keen sense of observation, on one hand; on the other hand spelling difficulties, reading problems, poor handwriting, poor phonemic awareness. (p. 520)

Buica-Bulciu and Popovici (2014) argued that because of their gifted abilities keep them above the line of LD identification, often their deficits are ignored, or their higher processing is missed due to the deficits; in both cases, the student does not receive the appropriate program or intervention for both areas of need. In fact, they stated, "Gifted learning-disabled students show

high level intellectual or creative abilities, but due to specific cognitive processing problems they usually perform below average levels in school settings, in certain subjects" (p. 521).

Gifted students with LD scored higher when tested in the area of working memory and processing speed than other children with LD but scored lower than equally gifted and talented children without LD (Toffalini, Pezzuti & Cornoldi, 2017). Toffalini, Pezzuti & Cornoldi (2017) noted the following:

> There was a significant difference in age-related growth trajectories: at a younger age, gifted children with LD resembled gifted children in terms of working memory but fell behind in working memory ability as they grew older; the opposite was true for processing speed. (p. 175)

Learning disabled self-efficacy and mindset. Children and adolescents who struggle with non-intelligence based learning disabilities such as ADHD and dyslexia are subject to the same causes of fixed mindset as any other student, but they can often experience a more consistent experience with failure due to the challenges to learning their disability creates (Baird et al., 2009; Costello & Stone, 2012; Haft et al., 2016; Zheng et al., 2014). Jodrell (2010) reported that disability labels and social identity due to such labels significantly decrease self-efficacy and performance in students with dyslexia. Research clearly demonstrates that students with reading disabilities are more likely than other typically developed peers to have low self-esteem, encounter peer rejection, and become anxious and depressed (Haft et al., 2006). This, coupled with a lack of resilience due to a fixed mindset of ability can create apathetic learners due to the vicious cycle of negative emotions and social experiences related to their reading disability.

Baird, et al. (2009) indicated that students with a learning disability possess a distinctive cognitive self-regulatory pattern: one that has been associated with such maladaptive approaches to learning as avoiding challenges, experiencing negative affect, exhibiting poor persistence and

task abandonment, and showing a deterioration in performance following failure. Baird, et al. found also that the learning disability endorsed more entity views of intelligence creating a lower than average self-efficacy in learning disabled (LD) students. Because of the low self-efficacy and fixed mindset that LD students develop, Baird et al found they often demonstrate maladaptive cognitive self-regulatory patterns. In other words, LD students do not believe they are smart because of their disability label and their frequency of failure which causes them to interpret the amount of effort needed to learn as a measure of their intelligence level (Baird et al., 2009; Jodrell, 2010).

Conversely, Cornoldi, Giofre, Orsini, and Pezzuti (2014) found that students with learning disabilities were not lacking in intelligence but rather demonstrated deficiencies in working memory and processing speed. Furthermore, Verma and Kushwaha (2016) determined through their research that Attention Deficit Disorder (ADD) does not affect intelligence, and it actually increased performance intelligence in students. Learning disabled students most need interventions that will move them from the entity theory or fixed mindset to an incremental theory of intelligence or a growth mindset (Baird et al., 2009).

The Power of the Growth Mindset

Dweck (2006) determined that a growth mindset helps students to handle setbacks and robustly affects motivation and achievement (Haimovitz & Dweck, 2017; Dweck, 2008). Haimovitz et al. (2011) determined that students with a growth mindset maintain their intrinsic motivation through a school year, unlike fixed mindset students who feel that they must set achievement goals to prove their intelligence. Students with a growth mindset understand that their intelligence is malleable allowing them to get smarter with effort and are

not discouraged by failure (Aditomo, 2015; Blackwell et al., 2007; Dweck, 2006; Laursen, 2015; Mendes, 2016; Yeager & Dweck, 2012).

Students with a growth mindset or an incremental theory of intelligence endorse stronger learning goals, hold stronger beliefs about the power of effort, and have fewer "helpless" attributes which cause them to choose more positive, effort-based strategies in response for failure which boosts academic achievement (Blackwell et al., 2007; Dweck, 2006; Dweck, 2008). Students with an incremental theory of intelligence or a growth mindset are more well-adjusted in regard to self-worth personally and socially, motivation for the future, healthy relationships, and overall positive emotions and outlook on life (King, 2012).

Additionally, students living in poverty were more likely to have a fixed mindset compared to more financially affluent students of the same age because students in poverty characteristically struggle with developmental and working memory, lower reading development, and immature emotional development (Claro, et al., 2016). Conversely, those students in poverty who did have a growth mindset were able to overcome hardships and maintain high academic achievement (Claro, et al., 2016).

Growth mindset contributes to the development of grit. Research has revealed one of the benefits of a growth mindset is the development of resilience even in students with reading disabilities (Haft et al., 2016; Lauren, 2015; Yeager & Dweck, 2012). Self-determination and resilience are key characteristics in the increased achievement of students with learning disabilities (Zheng et al., 2014). A growth mindset brings resilience which is the key characteristic in the development of grit or the tendency to sustain interest in an effort toward very long-term goals which contributes significantly to successful outcomes in school and in life (Duckworth, 2016; Laursen, 2015; Fitzgerald & Laurian-Fitzgerald, 2016). Wang et al. (2017)

conducted a neuroanatomical correlation study between grit and growth mindset and found "novel evidence for the neuroanatomical basis underlying grit and reveal a potential contributing mechanism of grit in which growth mindset explains the covariance between brain structure and grit" (p. 1694). Developing grit in students, in which they work hard at something for an extended period of time, is a key indicator to increased achievement (Duckworth, 2016).

Conversely, Steinmayr, Weidinger, and Wigfield (2018) studied the relative importance of grit for GPA, math grades and test performance in math with 586 adolescent students in which their findings using relative weight analysis revealed that the grit subscales added little explanatory power and caused the researcher to question grit's prediction of academic success. Laursen (2015) argued that relying on teaching academic standards is not enough to ensure student success in school and in life, but rather, education must also teach and develop in students the positive psychology to learning, failure, and perseverance. Teaching growth mindset and grit will help engage students into learning and diminish their frustration with failure helping to create, what is hoped to become, life-long learners (Duckworth, 2016; Dweck, 2006; Laursen, 2015).

Brain Science

There are many myths about the brain and intelligence that have influenced learning for centuries according to Deprez (2015). These include: everything about the brain is decided by age three, there are critical time periods in which things must be taught or the window of opportunity will be lost, we only use 10% of our brain power, people are right brained vs. left brained, gender differences outweigh individual differences when it comes to learning, and young children can only learn one language at a time. Recent brain research has dispelled all of these beliefs of the brain to be neuromyths. According to Deprez (2015), "One of the most

influential findings of the 21st century is the discover of the brain's plasticity" (p. 11). Brain plasticity means that the whole brain works as a systematic unit which was best demonstrated in the research by Immordino-Yang (2007) who studied two people who each only had half a brain due to traumatic brain injury but were able to regain skills because the other parts of the brain took over to provide the skills needed (Deprez, 2015).

Additionally, neurogenesis is another ability of the brain to rebuild synapses and other neuro systems which also contributes to the changes in the brain (Jensen, 2005). In other words, "the brain is shaped not only by its inherent genetic code but also by its environment" on a constant basis (Deprez, 2015, p. 12). Based on what has been learned about brain plasticity and brain development in recent years, the brain is an evolving organ that is affected by life experiences and social emotional interactions; therefore, if areas of the brain are used more, they will develop more (Deprez, 2015; Dweck, 2006; Immordino-Yang, 2007). Brain development begins at three weeks of conception and continues throughout life until death; with that there are factors that can affect that development such as prenatal care, good nutrition, early social-emotional interactions after birth, and opportunities to play and exercise (Deprez, 2015; Jensen, 2009). Jensen (2009) and Payne (2013) noted that this explains the lags in development of the brain in areas of working memory, cognitive development, and emotional development with children of poverty. With this understanding, Jensen and Payne emphasized that it is vitally important for teachers in the classroom to understand that their student's environment outside of school, the stress of poverty, violence, divorce, loss, neglect - has a direct effect on their brain's readiness to learn.

Because of brain plasticity, when effort is put into learning the brain will remap itself to grow to make new synapsis connections in the area of effort (Dweck, 2006; Jensen, 2005; 2009).

It is very significant for students to understand that the brains' ability to learn is determined by the effort they put forth due to their brain plasticity; this discovery can bring new hope and motivation to students with a fixed mindset and help move them to a growth mindset of intelligence (Deprez, 2015; Dweck, 2006; Jensen, 2005; 2009). Yeager and Dweck (2012) stated that students' mindsets can contribute to their resilience; if students understand their brain's ability to learn, their resilience improves as does their perseverance.

Brain Science Instruction

In understanding the significance that mindset plays on student achievement and overall well-being, the conclusion by Dweck (2006) that mindset can be changed is significant in finally being able to affect the outcome of low achieving students with a fixed mindset. Blackwell, Trzesniewski, and Dweck (2007) developed an intervention experiment in a longitudinal study in which a group of sixth-grade students was given an incremental theory therapy intervention in which they were taught about the brain, how it learned, its characteristics, and its potential for growth. The teaching of the malleable theory of intelligence intervention was successful to improve achievement performance and trajectory because of increases in the students' incremental theory of intelligence or growth mindset (Blackwell et al., 2007).

Over the last ten years, this malleable theory of intelligence intervention plan has been repeated, improved upon, developed electronically, and performed on different underachieving groups all over the country with one common result: underachieving students develop a growth mindset which affected an improved academic success, but also brain-science instruction has been proven to improve emotional and personality traits (Dekker & Jolles, 2015; Paunesku et al., 2015; Yeager et al., 2016; Yeager & Dweck, 2012). With all the success of brain science intervention, Carol Dweck (2008) developed a computer-based program called

"Brainology." After the pilot test with students in New York City, it proved a significant intervention in changing students' mindset to a growth mindset and became available to the public and schools at MindsetWorks.com. Additionally, Sarrasin et al., (2018) posited that their research results showed that "inducing a growth mindset by teaching neuroplasticity has an overall positive effect on motivation, achievement, and brain activity; the results also reveal that this intervention seems more beneficial for at-risk students" (p. 22).

Brain science instruction potential for the learning disabled. There is much research discussing the current fixed mindset that many low achieving students with learning disabilities currently suffer (Baird et al., 2009; Costello & Stone, 2012; Haft et al., 2016; Zheng et al., 2014), but even with all the past success with underachieving students that the brain science intervention has had, there has yet to be an examination of whether this intervention would improve the mindset of student with a learning disability. Schleider and Weisz (2016) noted that just one malleability intervention was all it took to reduce the risk of anxiety and depression in adolescents which is a significant issue for LD students.

The message of a malleable brain communicated to many is hope in the potential of ability and achievement (Dekker and Jolles, 2015; Dweck, 2006, 2008; Paunesku et al., 2015; Yeager et al., 2016; Yeager & Dweck, 2012). Orly and Margalit (2014) determined that students with learning disabilities have greater success when hope is a mediating factor between risk and protective factors and academic self-efficacy. More specifically, Costello and Stone (2012) determined that college students with LD or ADD can improve self-efficacy through positive psychological practices by faculty. It is easy to deduce then that if students with LD experience improved success when hope is present and they can improve their self-efficacy when they feel better about themselves, a brain science instruction, having been so effective with other

underachieving students, could also provide significant improvements for LD students (Baird et al., 2009).

Teacher's Role

Schmidt, Shumow, and Kackar-Cam (2015) determined that the teacher is an important factor in sustaining the positive outcomes of mindset interventions. Haimovitz and Dweck (2017) reported, "Extensive research on expectancy effects showed that parents' and teachers' perceptions of an individual child's level of competence predict the child's own perceptions of competence" (p. 1850). They asserted that growth mindset or a fixed mindset can be reinforced or even created by a teacher based on their responses to success and to failure. Thus, teachers with a growth mindset will give feedback and respond to students in a way that does not limit their potential or define abilities limit but emphasizes the importance of effort in order to succeed and grow intelligence.

Teachers' lack knowledge and understanding. Unfortunately, many researchers have determined that the biggest obstacle in moving students to a growth mindset is teachers' lack of knowledge of brain science and how the brain learns (neuroplasticity and neuroregeneration) which contributes to their fixed mindset of their students' abilities which causes negative mindsets, low expectations, and negative assumptions concerning their struggling students (Boylan, Barblett, & Knaus, 2018; Dekker and Jolles, 2015; Rattan, Good & Dweck, 2012). Moreover, many teachers do not realize how their responses even in an effort to praise or comfort can reinforce a fixed mindset in students (Dweck, 2006; Haimovitz & Dweck, 2017; Rattan, et al., 2012).

Fixed mindset. Parents and teachers play a key role in the mindset development of students of all ages (Dweck, 2006; Rattan, Good, & Dweck, 2012). Often parents and teachers

can help create a fixed mindset in students when their intention is to encourage a student after failure by using an entity theory comfort such as, “Don’t worry, math is not for everybody” (Rattan, et al., 2012). Teacher beliefs play a large role in the contribution to student fixed mindset (Dweck, 2006; Dweck, 2008; Haimovitz & Dweck, 2017; Ratton, et al., 2012). Often, teachers’ efforts to comfort a student can reinforce a fixed mindset by saying, “Its OK. Not everyone can be good at math” or “Wow! You are really good at this” (Dweck, 2006; Haimovitz & Dweck, 2017; Rattan, et al., 2012). Conversely, teachers can reinforce the growth mindset by responding with, “I can tell you worked really hard at that or you found a great way of doing that” or “You are doing a great job working at this; you don’t have it yet, but keep working, you will get there” (Dweck, 2006; Haimovitz & Dweck, 2017; Rattan, et al., 2012).

Schmidt, Shumow and Kackar-Cam (2015) found that teachers who, rather than providing strategies that helped students be successful with effort, alerted students to whether particular tasks were “easy” or “hard” by saying things like “I know this is boring, but its easy-peasy and you are going to be tested on it” significantly undermined students’ motivation and self-efficacy. Additionally, they found that teachers who immediately offered assistance instead of promoting the value of challenge and effort for learning perpetuated a helpless mindset for these students. Rissanen, Kuusisto, Tuominen and Tirri (2019) asserted that it is significant how the lack of knowledge about the mindset phenomenon limits teachers understanding of how their practices can hinder a student’s mindset and limit their ability to correctly interpret student behavior.

Teacher mindset and assumptions. Brooks (2004) asserted that teachers’ mindsets and assumptions concerning students are significant to the student’s success. Brooks demonstrated this fact by interviewing a student with a learning disability who was experiencing academic

difficulty. If a teacher has a belief that the student cannot do something or is a problems student, subsequently the student does not like the teacher either. Conversely, when a teacher described a student as struggling but having the potential to do better, the student felt cared for which caused the student to love the teacher. People begin to behave in accordance with our expectations and assumptions of them; when they do, we tend to use that as evidence that the assumptions and expectations are true. As demonstrated by the example, it is significant how often teachers do not appreciate how their assumptions, either subtle or not subtle, shape the behaviors of students and mindsets of students (Brooks, 2004; Schmidt, Shumow & Kackar-Cam, 2015).

Through years of research, Brooks (2004) explained that highly effective teachers who help students develop a growth mindset focus on more than just the academic health of a student; they must focus on the social-emotional health, demonstrate empathy toward students, and teach them in ways that they learn best. This teacher will have the mindset that is demonstrated in word and deed that "I believe that all students come to school wishing to succeed. If they don't, we must figure out how best to help them" (p. 3). Rissanen et al. (2019) explained:

> Teachers with a growth mindset are less likely to make quick, stereotypical judgments about students' talents or moral character than teachers with a fixed mindset, and they spend more time in one-on-one interactions with students in order to get to know them and give them individualized support. (p. 205)

Conversely, many researchers have found that teachers may have a growth mindset but have no idea how to translate that to their students with their instruction (Schmidt, et al., 2015; Boylan, Barblett, & Knause, 2018)

Based on the social-emotional nature of brain development, one of the most significant differences a teacher can make for a student in their learning is by developing a positive relationship based on caring and mutual respect (Deprez, 2015; Jensen, 2005; 2009). Teachers must have a growth mindset about their students dealing with them not based on their behavior,

which could be caused by social-emotional stressors in their life or based on their fixed mindset, but rather, treat them based on their potential to learn which would help promote their growth mindset (Deprez, 2015; Dweck, 2006; Rattan, Good & Dweck, 2012; Jensen, 2005; 2009). Al-Yagon (2016) explained that student with learning disabilities who felt their teachers rejected them contributed to their externalizing behavior and difficulties. Additionally, students with learning disabilities who received high praise from their caring teacher showed a significant positive effect in behavior and achievement. McLaughlin (2008) emphasized the importance of positive relationships with adults in the development of student self-regulatory control, positive development of emotional intelligence, and development of positive self-efficacy.

Teacher practices. Once teachers understand the significance of mindset and understand neuroplasticity, and neuroregeneration, the teachers' focus must be on instruction and practices, the teachers' mindset, and the teachers' response to success and failure, which will work together to move students toward a growth mindset (Brooks, 2004; Dweck, 2006; Fitzgerald & Laurian-Fitzgerald, 2016; Haimovitz & Dweck, 2017; Rattan, et al., 2012; Rissanen et al., 2019; Schmidt et al., 2015; Zurawski & Mancini, 2016). With the goal of helping teachers to improve their practice, Haimovitz and Dweck (2017) asserted in their research that teachers who promote a growth mindset give feedback that is specifically targeting a growth mindset with process-focused thinking. Reframing language when communicating feedback and expectations to students; "teachers should emphasize process rather than correct answers so students understand their abilities can grow" (Robinson, 2017, p. 19). Successful pedagogy that promoted a growth mindset in students utilized process-focused thinking that included praising student courage, strategies, and effort; teaching the positive role of failures, mistakes, and challenges in learning; and teaching learning strategies emphasizing learning-to-learn goals (Rissanen et al., 2019). In

responding to success, effective teachers do not focus on praising intelligence, ability, or talent but their praise focuses on the effort of the success (Haimovitz & Dweck, 2017; Dweck, 2006; Rissanen et al., 2019; Schmidt, et al., 2015). Haimovitz and Dweck (2017) reported, "The research shows that tying the process (e.g. effort or strategies) to an outcome (learning or attainment) can promote a growth mindset" (p. 1852).

Maintaining a process-based instruction means responding to failure differently to inspire a paradigm shift in the meaning of failure to students from the fixed mindset of a measurement tool for intelligence to an understanding that failure is part of the learning process (Brooks, 2004; Dweck, 2006; Fitzgerald & Lauria-Fitzgerald, 2016; Haimovitz and Dweck, 2017; Rissanen et al., 2019; Schmidt, et al., 2015). Dweck (2006) explained that failure is an important part of the learning process in that failure is how we learn what not to do on our way to success. Haimovitz and Dweck (2017) posited that students who heard "yet" in critical feedback such as, "You haven't got this concept yet, keep trying" endorsed more of a growth mindset feeling more encouraged and motivated. The role of failure in the course of learning is an important concept to integrate into the classroom culture. Classes that celebrate their mistakes and struggles and discuss how these setbacks enhanced their learning creates a culture of growth mindset.

In order for students, especially those with learning disabilities, to be increasingly motivated to learn we must meet their needs; specifically, we must create a safe environment where even through failure they feel competent in their abilities because failure is an expectation for learning (Brooks, 2004; Fitzgerald & Lauria-Fitzgerald, 2016; Robinson, 2017). Openly acknowledging the fear of failure often renders it less destructive (Brooks, 2004). "One teacher reported that when she engaged her class in this type of discussion [fear of failure] at the beginning of the year, she had the 'most discipline-free year' (Brooks, 2004, p. 7). Rissanen et al.

(2019) found that teacher modeled failure is effective in communicating the role of failure to students; teachers purposefully making mistakes in front of students and modeling the growth mindset thinking regarding failure was effective in developing a classroom "failure is good" culture.

Instructional strategies that promote a growth mindset. There are several well-established pedagogical practices that have been proven effective in promoting growth mindset development. Student-centered instruction is most effective because teachers give student choice, promote students as the investigators to learning, and encouraged student-led instruction which promotes the feelings of autonomy and competence (Brooks, 2004; Haimovitz & Dweck, 2017; Rissanen et al., 2019; Schmidt, Shumow, & Kackar-Cam, 2015). Additionally, differentiation, or supporting each student's individual learning processes, as a basis for pedagogical practice, is highly effective for development growth mindset because in using it teachers avoid quick stereotypical judgments of students, have one-to-one interaction with students, and learn about students individual barriers and helping them overcome them (Brooks, 2004; Rissanen et al., 2019, Schmidt, et al., 2015).

There is no room for the one-size-fits-all mindset in a growth mindset classroom. Finally, cooperative learning strategies are significant in grouping students, so they work together to investigate learning (Brooks, 2004; Rissanen et al., 2019, Schmidt, et al., 2015). Based on Lev Vygotsky's theory of the zone of proximal development students have a level of learning they are able to achieve by themselves or with the instruction of a teacher, but because of our social ability to learn, students working together in cooperative learning groups can help raise the level of learning a student can achieve with the help of their peers (Karpov, 2014). Therefore, Karpov (2014) explains, cooperative learning helps students to persevere through struggles, promotes

working together through challenges, and is student-centered pedagogy that is focused on learning.

Reading Teachers and Supplemental Reading Classes

Because of the significant percentage of students in secondary education who have poor reading skills, researchers have recommended supplemental reading classes that target reading comprehension, reading fluency, and higher order thinking skills (Wilkerson et al., 2016). Such supplemental classes offered in secondary education are often associated with increased in literacy skills (Wilkerson et al., 2016). The students in these classes dislike reading, don't feel they are good at reading, and feel they struggles in other content areas; because of this, reading teachers must deal with not only the abilities of the students but also their belief systems and emotional states (Harmon et al., 2016). The strategies that reading teachers use in these supplemental classes for struggling readers must be student centered, data driven, and address the emotional needs of the students as well and the skill needs (Duke, Cervetti, & Wise,2017; Harmon et al, 2016). Exemplary reading teachers, according to Duke, Cervetti, and Wise (2017) used the following effective strategies to move students to high reading achievement: using small group and collaborative learning groups, teaching for equity, being responsive, focusing on higher order thinking, teaching for depth, offering choice and control, being purposeful, teaching explicitly, fostering success, emphasizing effort, being positive, and carefully constructing the classroom environment, promoting self-regulation, and connecting with students and their families (Duke et al., 2017).

Summary and Preview of Chapter 3

Social cognitive theory maintains that human behavior is based on one's internal beliefs of one's abilities, perspectives of self, and regulation of self as well as how one relates all this to

social context and social belief systems (Bandura, 1991; 2001). Self-efficacy is key in understanding human behavior and more specifically student achievement (Bandura, 1991; 2001, Blackwell, et al., 2007). In an effort to explain the influence of self-efficacy on motivation and achievement, the implicit theories of intelligence were introduced which states there are two belief systems in human motivation; entity theory and incremental theory (Blackwell, et al., 2007; Dweck, 2006; King, 2012). A person with an entity theory of intelligence believes that their intelligence is unchangeable or fixed while a person with an incremental theory of intelligence believes that their intelligence is malleable and can increase or improve with effort (Blackwell, et al., 2007; Dweck, 2006). Substantial research has proven that students with an entity theory of intelligence or a fixed mindset perform significantly lower than students with an incremental or growth mindset (Blackwell, et al., 2007; Dweck, 2006; King, 2012).

Students with non-intellectual learning disabilities are some of the most at-risk for the fixed mindset due to the ability labels, lack of success, and their equating achievement with intelligence (Baird, et al. 2009). However, the work of Carol Dweck (2006) has proven that the growth mindset promotes significant increases in achievement in even low achieving and economically disadvantaged populations of students (Aditomo, 2015; Baird, et al., 2009; Blackwell, et al., 2007; Dweck, 2006; King, 2012).

Dweck (2006) has demonstrated how to move students from a fixed mindset to a growth mindset by providing brain science interventions that teach students how their brain is designed and how it works (Deckker & Jolles, 2015; Dweck, 2006; 2008; Yeager & Dweck 2012; Yeager, et al., 2016). Research has determined that the role of the teacher is significant in the effort to move students from a fixed mindset to a growth mindset through their effective teaching practices of a growth mindset, knowledge of brain science, process-based focused instruction,

and how they respond to success in failure in their classroom (Brooks, 2004; Dweck, 2006; Fitzgerald & Lauria-Fitzgerald, 2016; Haimovitz & Dweck, 2017; Rattan, et al., 2012; Rissanen et al.,2019; Schmidt et al., 2015; Zurawski & Mancini, 2016). Effective pedagogical practices that help promote a growth mindset are student-centered instruction, differentiation, and cooperative learning (Brooks, 2004; Rissanen et al., 2019, Schmidt, et al., 2015). Chapter 3 includes the research methodology and design, qualitative methodology, population, sampling, instruments for data collection, and analysis plan, the role of the researcher, limitations, and delimitations.

Chapter 3: Research Method and Design

The purpose of this study was to describe the best practices of reading teachers who have a reputation for high student achievement and who adhere to a growth mindset in an effort to build a growth mindset culture with their students. The central research question was as follows: What best practices do Reading teachers implement to build a growth mindset within students? Through a qualitative instrumental case study research design, participants were selected based on their reputation as distinguished reading educators.

Many elementary and secondary school students, especially those diagnosed with learning disabilities (LD) such as dyslexia and Attention Deficit Hyperactivity Disorder (ADHD) struggle in school and later in life, because they have developed a fixed mindset of learning and intelligence (Baird et al., 2009; Claro, et al., 2016; King, 2012). After years of feeling unsuccessful in school, LD students begin to equate their struggles with their intellect even though their disability is not related to intelligence.

The following research questions guided the study:

RQ1. What best practices do reading teachers implement to build a growth mindset within struggling students?

RQ2. How do reading teachers with a growth mindset define a growth mindset culture?

RQ3. What have reading teachers perceived to be the benefits of cultivating growth mindset within students?

RQ4. What are the challenges, if any, encountered by reading teachers when developing a growth mindset within struggling students?

In this chapter, the research design and methodology are presented as well as research participant selection, sampling, data collection and analysis procedures, methods for establishing

trustworthiness, researcher's role, ethical considerations, assumptions, limitations, and delimitations.

Research Design and Method

According to Creswell and Guetterman (2019), a case study is a form of ethnography but differs in that it is an "in-depth exploration of a bounded system (e.g., activity event, process, or individuals) based on extensive data collection" (p. 477). In this case study, I analyzed the shared patterns of the activities, events, and processes of a group over time; they are not necessarily looking for patterns of behavior. Creswell and Guetterman (2019) noted there are three specific types of case studies: intrinsic case study, collective case study, and instrumental case study. A qualitative study that is "focused on a specific issue using one or several different cases to illustrate is considered an instrumental case study" (Creswell & Guetterman, 2019, p. 477).

This study focused on the issue of teacher practices that effectively contribute to the development of a growth mindset in students who have deficits in reading and struggle academically particularly those with a label of learning disability. Additionally, the study analyzed the perceptions of teachers concerning the value of a growth mindset as well as the value of having a growth mindset culture. The study also examined the teachers' perceived obstacles or barriers, if any, to successfully moving students from a fixed mindset to a growth mindset including, more specifically, those students with a learning disability. To thoroughly explore this topic, it was essential that the research include several different cases or teacher's experiences and perceptions which is the reason the qualitative instrumental case study is the most appropriate.

According to Patton (2015), the purpose of an instrumental case study with multicase sampling is "to select multiple cases of a phenomenon so as to understand the phenomenon and, in applied multicase studies, generate generalizable findings that can be used to inform changes in practices, programs, and policies" (p. 295). Patton quoted Stake (2006) who noted, "When the purpose of case study is to go beyond the case, we call it 'instrumental' case study" (Patton, 2015, p. 295). Patton explained that instrumental case studies are often used by policy decision makers, practitioners, or funders to make evidence-based decisions. This evidence-based research in an instrumental case study should enable people to have a deeper understanding and resolution of how things work and what can be done to improve them. Patton suggested that the sampling of an instrumental case study, therefore, must be purposely identified.

There are three main criteria for selecting the cases: "(a) relevance of each case to the multicase phenomenon that is the focus of inquiry, (b) selecting cases that provide diversity across contexts, and (c) selecting cases that provide good opportunities for learn about complexity and contexts" (p. 295). In this study, the research analyzed the instructional practices of reading teachers who teach remedial reading classes. These remedial classes are designed for students who struggle with reading; therefore, students in this class often have learning disabilities such as dyslexia and ADHD because both are causative to reading difficulties as well as overall academic struggles. The design has very specifically identified the growth mindset practices that are targeted in a specialized class of students with learning disabilities that cause reading difficulties. In the effort to be thorough, there have been several different teachers in different areas which make the instrumental case study the most appropriate design.

Population

A purposeful sampling of 11 reading teachers with reputations for high student achievement and a self-professed teacher of growth mindset were selected from a snowball sampling from a large, urban, Title 1 public-school district in Texas. The district is located in one of the large cities in the state and is considered a Title I district because a large percentage of schools, but not all, are Title 1 campuses. The teacher population consisted of both elementary and secondary reading teachers/specialists who work as interventionists to struggling readers due to various learning disabilities. There was a variety of Title 1 and non-Title 1 campuses represented by the participants. The teachers were varied in years of experience but have all worked teaching remedial reading classes in which 50-100% of the students had a learning disability (Appendix B).

Sampling

According to Patton (2015), snowball, or chain sampling, is a strategy for "identifying information-rich key informants or critical cases" by asking well-situated people who else they know that might have similar knowledge which leads to the next sampling (p. 298). Using a qualitative snowball sampling method, inquiries were made of reading teachers with reputations for high student achievement and who were self-professed teachers of growth mindset. (Creswell & Guettman, 2019; Leavy, 2017; Patton, 2015). When the reading teachers were identify as having the criteria needed for the purposive sampling, the teachers were requested to participate in the study and were asked for other teachers that the participants knew of that also fit this purposive sampling criterion (Creswell & Guettman, 2019; Leavy, 2017; Patton, 2015).

The initial inquiries for participants using the snowball method began with recommendations from a teacher-leader who has been recognized on the state level for excellence in teaching and from district content specialists at a mid-Texas public school district.

Inquiries were made asking to identify reading teachers who have demonstrated their ability to show academic growth with low achieving students. Once the participants were identified, they were asked for other possible inquiries that fit the purposive sampling criterion until all 11 participants were located and agreed to participate by signing a consent form (Appendix C).

Materials/Instruments

This researcher conducted one-to-one qualitative interviews using guided protocol questions with the 11 participants as the means for collecting data (Creswell & Guetterman, 2019; Leavy, 2017; Patton, 2015). A standardized open-ended interview design was utilized based on research questions, experience, and literature review (Patton, 2015). Open-ended questions were designed that focused on the exploration of the teacher experiences, teacher perceptions of growth mindset, teacher practices that they perceive to help students move to a growth mindset, and the perceived barriers that keep kids from moving to a growth mindset (Appendix D). During the interview, I utilized more informal conversational interview practices that explored and investigated fully the understandings and perceptions of the participants after standardized open-ended questions were asked (Creswell & Guetterman, 2019; Patton, 2015). According to Patton (2017):

> The combined strategy offers the interviewer flexibility in probing and in determining when it is appropriate to explore certain subjects in greater depth, or even to pose questions about new areas of inquiry that were not originally anticipated in the interview instrument's development. (pp. 441- 442)

Chenail (2011) explained that curiosity-driven qualitative researchers will often ask follow-up questions based on the responses offered by the interviewee in an effort to explore with more details the respondents' experiences. Interviews were conducted face-to-face using online video conferencing technology. In all cases, the interviews were recorded video recording

from the video conferencing program (Creswell & Guetterman, 2019; Patton, 2015). Additionally, I took notes during the interview adding inferences drawn from body language and other non-verbal communication as well as researcher's internal dialogue in reference to depth of understanding (Patton, 2015). To protect confidentiality, pseudonyms have been used in reference to all the participants.

Data Collection and Analysis Procedures

Before starting data collection, I first obtained approval for research from IRB (Appendix A). According to Creswell and Guetterman (2019), there are six steps in analyzing and interpreting qualitative data. This process began with the collection of the data; in the case of this study, it was collected via one-to-one interviews. All interviews were recorded using audio and video for transcription accuracy. Next, I prepared the data for analysis through transcribing field notes and interview dialogue. Otter.io program was used to transcribe the interviews. Additional data was collected from participants including lesson plan templates, class activities, and units of instruction.

According to Creswell and Guetterman (2019), it is important for me, for the third step, to conduct preliminary exploratory analysis by reading through the data entirely to get familiar with the data and to get a general sense of the data. Finally, I coded the data looking for text segments and assigned code labels; simultaneously, I coded for themes to be used in the research report (Creswell & Guetterman, 2019; Leavy, 2017; Patton, 2015). I coded and analyzed the qualitative data by hand from this study. According to Patton (2015), triangulation strengthens a study by using several different kind or methods of data. Therefore, validation of findings was obtained by triangulation of interview data, instructional unit, and individual lesson data requested from the teachers during their interview, and field notes.

Coding. Once the transcription process was completed, the first coding step was the preliminary exploratory analysis of the data in which data was reviewed and evaluated for segments. Segments were grouped using brackets and boxes that pertained to perceptions of teacher, strategies, barriers, values, results, significance (Creswell & Guetterman, 2019; Patton, 2015). Keywords or phrases significant to the research questions were highlighted. The second pass of coding continued the inductive reasoning process drawing inferences and thematic connections to data. According to Patton (2015), "Findings emerge out of the data, through the analyst's interactions with the data" (p. 542). Using the inductive to deductive qualitative analysis method, I used the inductive analysis of categories, patterns, and themes through cross-case analysis to make propositions of the data. These propositions were then be applied to the study research questions.

Methods of establishing trustworthiness. Often in these cases, the investigator's biases are the greatest threat to reliability (Chenail, 2011). Therefore, I conducted an expert review of the interview questions and procedures in an effort to eliminate biases, get subject feedback on questions, identify any ambiguities, record the interviewee's time commitments in the IRB protocol, assess whether the questions would inspire the information intended, and to determine if revisions were needed (Chenail, 2011). The expert review was conducted with two people who are knowledgeable of the content, specializing in teacher practices, and who have current teacher certifications. Additionally, for triangulation purposes, participants provided lesson plan templates, activities, and instructional units, and member checking of transcripts was conducted which helped establish trustworthiness.

Researcher's role. I have worked as an instructional leader at four different public high schools in the district and as an assistant principal at two middle schools always with a central

goal of high achievement for all students. I worked with many students over the years who have suffered from a fixed mindset that created apathy and hopelessness for success. As an instructional leader and a campus leader, is was imperative that this problem be researched and tested in search of help in the form of effective strategies for these students. My role was very objective as the facilitator of the research process, specifically, in the gathering of data and interacting with the research participants during the interviews.

Ethical Considerations

Because teachers and teacher practices were a part of the study, confidentiality was of the utmost importance. All teacher information and data were obtained only after an informed consent form is obtained, and all teacher data has been represented in data collection and analysis by only teacher research identifying T1-T11. All data was stored securely in accordance with IRB requirements. To protect the participants, participant full disclosure to the research, the process of the research, and the purpose of the research were disclosed to all participants in an informed consent document. No action toward data access or collection took place until full IRB approval and full informed consent was obtained.

Assumptions

Terrell (2016) noted, “Assumptions are just as they sound; things we believe to be true but cannot verify” (p. 41). There was an assumption that all teacher participants understand the basic concepts of a growth mindset and a fixed mindset but may not be fully trained on the research behind it. There was also an assumption that all participating reading teachers had students with learning disabilities due to the fact they taught a remediation class for struggling students. It was assumed that not all students in their classes had a learning disability label. There was a question that confirmed this assumption. It was further assumed that upon signing the

informed consent, the teachers would be fully honest and truthful in their responses to the interview questions.

Limitations

Roberts (2010) explained, “Limitations are particular features of your study that you know may negatively affect the results or your ability to generalize; they are usually areas over which you have no control” (p. 162). The study is limited by the understandings of the participants and their ability to discuss their experiences accurately.

Delimitations

According to Terrell (2016), “delimitations are further limitations actively put into place by the researcher in order to control for factors that might affect the results, or to focus more specifically on a problem” (p. 42). This research was limited to the study of reading teachers from public education who had a reputation for high student achievement and who taught remedial reading classes for students with reading difficulties and academic struggles. Reading teacher participant selection was focused on reading teachers with reputations for high student achievement and a self-professed teacher of growth mindset.

The research collection was limited to teacher perceptions, opinions, and experiences teaching students with low self-efficacy due to experiences with failure and the practices that help them. The study looked at the best practices of teachers who had success with students who struggled academically, specifically with reading.

Summary and Preview of Chapter 4

This instrumental case study focused on the issue of teacher perceptions of growth mindset value, effective strategies to help improve student self-efficacy, and perceived barriers to a growth mindset utilizing guided protocol interview questions (Creswell & Guetterman, 2019;

Patton, 2015). The eleven participants for the study were selected using a snowball sampling method that started with a local state award winning teacher who knew many reading specialists who had an excellent reputation for success with struggling and learning-disabled students and had a self-professed understanding and focus on growth mindset development.

Data were collected from one-to-one interviews taken through the six steps of interpreting and analyzing data (Creswell & Guetterman, 2019). Coding was a significant step in that there were at least three coding passes of the data using qualitative research data analysis software (Chenail, 2011; Creswell & Guetterman, 2019).

My role, as the researcher, was as an objective observer who interacts with participants through a direct protocol questioning in an interview. The participants' rights were protected by providing a detailed informed consent and by identifying each participant in the data by an identification number of T1-T11 (Patton, 2015).

This research assumed the knowledge the teachers had of the growth mindset was not based on any in-depth training; they had students with learning disabilities in their classroom, and they answered questions thoroughly and truthfully. The limitations of this research were misconceptions on the teacher's part of his/her knowledge and understanding of the research-based growth mindset principles since participants were self-identified to focus on mindset in their instruction. The delimitation of this research was focused on teacher perceptions and experiences in working to improve student self-efficacy and move them to a growth mindset. At no time were student participants in this study or any student data used other than the question to the teacher asking the number of students in their classes with a learning disability label.

Chapter 4 includes the results of this case study. Chapter 4 begins by reiterating the purpose of this study. Also discussed is the report findings based on the results of the data

analyses to include themes that emerged. Chapter 4 includes text, tablets, and figures to demonstrate and document the data analysis results. Chapter 5 contains a summary of the study, discussion and conclusion of the findings, and implications for practice and future research.

Chapter 4: Results

The purpose of this study was to describe the best practices of reading teachers who have a reputation for high student achievement and who adhere to a growth mindset in an effort to build a growth mindset culture with their students. A qualitative instrumental case study approach was used to identify best practices and strategies used to move academically struggling students, as well as those labeled with a learning disability, from a fixed mindset to more of a growth mindset of learning and intelligence. Five high school secondary reading teachers, one middle school secondary reading teacher, and five elementary reading teachers who reported to have 30-100% of their students to be students with a learning disability in their remedial reading classes were interviewed using a guided protocol addressing the following research questions:

RQ1. What best practices do reading teachers implement to build a growth mindset within struggling students?

RQ2. How do reading teachers with a growth mindset define a growth mindset culture?

RQ3. What have reading teachers perceived to be the benefits of cultivating growth mindset within students?

RQ4. What are the challenges, if any, encountered by reading teachers when developing a growth mindset within struggling students?

The purpose of this chapter was to report the results of the data analysis gathered through the experiences and practices of the eleven reading teacher participants and to discuss how the data collected answers the research questions. The eleven volunteer participants were interviewed, and data were transcribed and analyzed. Each participant was assigned a pseudonym T1, T2, and so on to T11. The transcribed data were read through multiple times, highlighted for key concepts related to research question, and emerging themes were identified

and grouped in a coding matrix (Creswell & Guetterman, 2019). The groupings of ideas, concepts, and descriptions (Appendix E) became the foundational support for the emerging themes and the narrative findings. The results of this research are important in the aiding of teachers and parents who long to help struggling learners, with or without a learning disability, who have a fixed mindset and low self-efficacy.

Research Question 1: What Best Practices Do Reading Teachers Implement to Build a Growth Mindset Within Struggling Students?

Research question one explored the best practices of reading teachers who had a reputation of effectively working with students who struggled to improve their student academic achievement. The question focused on three components of teacher's work with students: their instructional practices, their feedback to students and their relationships with students. Based on the interviews, lesson plans, activities, and instructional units, students show improvement in mindset when the teacher develops a safe classroom environment of collaborative learning where social emotional needs are met, and students feel safe to take risks. Findings included: establishing an environment of trust, creating successes for students, and teaching brain science and mindsets.

Environment of safety and trust. The importance of creating a classroom environment that is safe and provides positive social/emotional development for students through peer collaboration and interactive learning was mentioned by almost every participant during the interview. T5 stated, "I work to build a community in the room to where they are willing to take a risk, read out loud, answer questions in front of the class without feeling embarrassed. I have found that what can be really beneficial is for everyone to get to know each other and feel like we are a team, working on things together, struggling together." Several of the participants

mentioned that creating a safe environment where students who struggle can struggle, make mistakes, but not feel less than others in the class was key to helping them put in effort toward learning. T8 posited:

> It is vitally important to create a safe environment where they can take risks and are not alone in their struggle. I had a student read aloud in class, and another student said, 'why are you reading here, you won't read in our other classes?' The student said, 'because it is safe here.' It really breaks those walls down.

Teamwork and cooperative learning strategies were also a key concept communicated by teachers to help develop that safe environment and to meet the student's social/emotional needs in the learning environment. T1 discussed the value of the zone of proximal development which is a learning theory developed by Lev Vygotsky based on this work with social interaction and cognitive development (Karpov, 2014). T1 explained how the social interactions between the students in groups and in paired work facilitated the students helping each other to achieve the required learning goals. Many participants mentioned their use of paired reading, pair share strategy, and teamwork activities to help bridge the gaps in learning.

Another value to cooperative learning for struggling students is the learning engagement that comes through the feeling of safety. Two of the high school reading teachers shared that they use competition as a collaborative learning tool. T5 shared an activity in which she puts the students in teams and gives each group an envelope with answer stems. She then gives the teams the questions. They must work together to figure out which answer stem fits what questions. If they get it wrong, they have to start all over again. The team to get the correct questions and answer stems put together wins. "I announce while they are working which team is ahead and who is falling behind like a sports caster. They really get into the competition, especially the boys."

One of the most important aspects of creating a safe and trusting environment is the positive relationship the teachers develops with the students. The relationship that the teacher develops with her students was by far the most frequently mentioned strategy for impacting struggling students. T10 summed it up best when she said, “It is all about building that relationship and maintaining that positive relationship with the students. You have to. If you do not, you will not have the trust and that fear of risk that fear of effort is going to run rampant in your classroom.” T7, T5, T2 and T4 all shared how students with a fixed mindset often put up a wall. “It’s a fear of failure because they see failure as a gauge of their intelligence,” T4 explained. T7 and 5 both agreed that they just shut down and won’t do anything because they feel if they put in effort and fail, they are stupid. If they don’t try; it is just their choice. T2 posits, “Some kids who experience little success come in with a wall built. It is harder to develop a relationship with them, but once you break through that wall, that is when the growth begins to happen.” Many teachers referred to the trust the relationship building brings between teacher and student. T3 explained, “once I establish a connection with the student, they feel safe to take risks and they know I am here to support them.”

Teachers had many different strategies for getting to know their students. The educational level had much to do with the relationship building strategies the teacher used. T6, an elementary teacher, stated, “I spend a lot of time with my students; we eat lunch together. I also do an inventory of things they love which also help me construct high-interest lessons.” T4, the middle school teacher, shared, “I ask questions to learn more about them, share pictures, and talk about our lives so they develop that feeling of trust.” T2, a high school teacher explained, “I try and build relationships with my students during the passing period. Ask them about their weekend and get to know them as individuals.” T10, who is a high school teacher as well, noted,

"Knowing who my students are and their outside story (they have a lot in their lives), checking in with them every day, and making sure they feel loved and welcome; it creates a safe place for them." T7 posits, "I know my students. I really know them, their struggles, their lives and their goals for the future. That is important in high school."

These relationships are built and maintained the consistent positivity from the teacher. According to all teachers interviewed, positive words, focus, praise, and feedback from the teacher have a profound effect on the progress of struggling students. T1 stated, "It is important that you showcase that you believe in them and that they have the ability to learn." T1 illustrated the effects of positivity by sharing an experience with one of her students:

> A student in my class didn't believe he was a good reader. I said, 'of course you can read!' During group every time he read a word, we high fived and praised his effort. Afterwards, we went to the principal and had him read for her. She gushed over his reading ability and it really boosted his confidence.

A key concept of growth mindset is that intelligence is grown through effort not by any predisposed ability to learn. (Dweck, 2006). It is this concept that drives these teachers to focus on and praise the effort students put in to learning because they know that effort will bring growth.

Feedback to students from their teacher is an important opportunity to develop a growth mindset, according to several of the teachers interviewed. T8 supplied an example of growth mindset feedback: "I am so excited you got that! That was super hard. I love the effort you put into getting that!" T1 explained, "I take the student to their classroom teacher and in front of the student praise them for their accomplishments and specific skills they have developed. I explain how proud I am of the effort they are putting into reading group." Praise and feedback must be positive so they will feel strong enough to tackle something harder. T11 stated, "I fill up kids

with all the good things they are doing and use that as the springboard to move onto something harder." T4, T6, and T9 all shared that they create moments of success before starting something harder. They do something that everyone does really well to create a feeling of success and confidence in their students before they try something new.

T11, T5, and T9 all shared that feedback while positive must also be very explicit and poignant. T11 explained, "It is a great strategy to restate the good things you see them doing and no just say good job. It should be: 'I notice how when you came to that word and you didn't know it, you went back to the beginning of the sentence to figure out what the word meant.' It is all about reinforcing the good habits and the effort." Another positive strategy that T11 and T6 shared is that they find videos or stories of people who have dyslexia, ADHD, or other issues and it demonstrates how they worked hard and became successful. T11 stated, "They are really amazed by this. It really gives them hope."

Create successes for students. Teachers communicated consistently the need for struggling fixed mindset student to regularly experience successes in order to move from a fixed mindset to a growth mindset. The majority of teachers interviewed agreed that setting goals and monitoring progress measures with struggling students helps establish the feeling of success. All participants but one mentioned during the interview the importance of setting small learning goals and monitoring progress through data for each student. The teachers explained that students who are in their classes, especially the students with learning disabilities, have experienced very little successes in school which has contributed to the development of their fixed mindsets. To move students forward and into a growth mindset, they must feel some successes. T7 provided a great example of this:

> Goal setting is key for the students to feel success. I had a student who had failed his STAAR test several times and worked hard at passing it, but we

> got the scores back and he failed it. We sat down together, looked at the test data. and compared it to the prior test data. He saw how much he had improved over the prior year and said, “I really did learn a lot last year, if I keep working hard, I’m sure to pass it the next time.” He walked away and worked hard in class every day.

All four of the elementary teachers, the middle school teacher, and five of the high school teachers mentioned the importance of goal conferencing one on one with students. T11 posited, “I conference with students on their goals and their reflections of learning. I want to talk to them about their data, their progress, celebrate them, and discuss what the next steps in their learning will be.” Additionally, T6 asserted, “It is important to help them understand when you cannot do something and you want to, you have to have a goal, then you have to have a plan on how to get there. My job is to help them see every step as an accomplishment.” Other teachers commented on the value of developing goal setting habits as a life skill especially for people with learning disabilities.

Alongside of the goals setting is the use of reflection to help students take responsibility for their learning and their successes. According to many of the teachers interviewed, student reflection is a strategy and life skill that serves struggling students well in setting goals, planning for goals, reflecting on feelings to better understand themselves and their mindset, and to better understand the learning process. T2 stated, “We do a lot of reflection. I ask them, what do you think, how do you feel, what are you proud of, and what is your nest step for growth. I find this is helpful for them to process their success and be cognizant of their thinking.” T11 stated, “I ask my students to reflect on their glow and grow which means what are they proud of that they have accomplished and what is the next are of growth they will work on.” T5 explained, “After a test, especially the STAAR, we reflect on how we approached it, did we do our best, what did we do

well, where could we do better next time?" T7 asserted, "Reflection goes hand in hand with goal setting in that it helps the students to take ownership of their learning."

T2 expressed a dedication to student reflection as an everyday routine. "We do a lot of reflection journaling. It is where I give them the most feedback highlighting something great that they did, always focusing on the growth ideas they share." T10 who works in a title one high school explained that often her kids are dealing with a lot at home and work almost full time to help support their families. She uses journal reflection as a way to help her students process their feelings about school and about home. She explained how when a student comes to class upset, she might say, "I can tell you are not yourself today. Is there something you want to chat about? Is it something you want to chat about with your journal? Often they will write about what is bugging them and feel better ready to work." According to these teachers, reflection is a very good cognitive development strategy.

Another consistent strategy the participants mentioned was teacher modeling of learning strategies and thinking strategies to promote student success experiences. According to six of the participants interviewed, teacher modeling is a fundamental part of all instruction to promote success in struggling students. T6 shared, "When I ask them to do something, I model it and provide the scaffolding for them to be able to do it. That makes them feel successful." T9 stated, "Modeling the specific strategy and restating it when you see them do it affirms their effort and achievements." T1, T5, T3 and T6 all explained that to help students be successful, you must model what you want them to do whether it is reading, writing, or thinking. T2 added, "I model reading and thinking, and we have a conversation." She even modeled strategies for specific struggles; she asserted "If you feel your mind wondering, you can do this, and I model it for them. It's all about metacognition and what they are thinking." T10 talked about how she models

struggling with writing, “I with them. I cross out, I erase, I start over. They need to know that it is all ok when you are writing.”

Teaching brain science and mindsets. Teacher agreed that helping students understand how their brain learns, how it is different, and about mindsets will help them move to a more growth mindset. Six of the eleven teacher interviewed stated that they in various ways explicitly teach about fixed and growth mindset. T4 teaches an entire unit called, *Mind[set]fulness: How Can I Control My Brain*, developed by Trinity University in San Antonio, Texas. T4 shared that she has seen great strides in her students’ growth and mindset development because of this unit. She asserted:

> We did a unit on mindfulness in which I taught breathing strategies for stress. We talked a lot about their brain, how it develops, how it learns, and neuroplasticity. We taught vocabulary words on growth mindset and did a gallery walk looking at famous people who were determined to learn and achieve something. It has worked amazingly.

T7 shared the vocabulary for fixed and growth mindset that she teachers her students (Appendix G). She, too, teaches her students about the brain-- how it learns and neuroplasticity. She explained, “We also talk about how our brains are all different. We stress that everyone’s brains have special features and process differently. We talk about the different types of learners and that everyone learns their own way. They always seem to feel a little better about themselves after that.”

Evaluating students for mindset was also an important step in helping those with a fixed mindset move to a growth mindset T4 does a mindset inventory using the Dweck Mindset Measurement at the beginning of the year (Appendix H). She explained, “We learn all about the different mindsets and we talk about changing our mindsets.” T2 uses growth and fixed mindset quotes at the beginning of every class to reflect on in their journal and then discuss. T6 stated, “I

have posters of mindsets in my room and we talk about them. 'What mindset to you think you have right now?' or 'I love your growth mindset!' or 'how could we change our mindset to a growth mindset?'" T10, T5, T4, and T11 all shared that they choose stories to read that depict a main character that is struggling with something they need to do, but they work hard at it and succeed. T11 added, "It is my sneaky way of teaching the mindset that if you want something, with effort, you can make it happen."

As part of teaching mindset, teachers expressed the importance of teaching and redirecting students fixed mindset thinking and offering comments to help them develop more growth mindset practices. Students with a fixed mindset often say things like "I cannot learn this," "I cannot read," or "I am not good at this" (Dweck, 2006). Several of the participants interviewed shared that redirecting this language and self-talk is important in moving them to a growth mindset. T4 noted, "I redirect them when I hear a negative, I can't statement. I will say that is a fixed mindset statement. How could you change that to a growth mindset? The student would say, 'I can't do it yet." T10 explained, "They come in and say, 'I can't,' and I say, 'You can't yet.' Soon, as I teach them and they get more confidence, they start saying 'I can't yet, but I will.'" T5 suggested, "It is all about focusing on the growth. When they focus on the failures or challenges, it is up to me to redirect them to their growth thinking. It is the celebration of the small steps along the way-- the parts working to the whole." Self-talk for students is also are area of redirections according to T3 who said, "I will often use our reflection journals to have the kids reflect on what they are saying to themselves. Is it a fixed mindset or a growth mindset?"

One of the key concepts of the growth mindset is that failure is a part of learning and is expected. Teachers agreed that this concept must be taught and reinforced until it becomes part of the student culture. But this is a lesson that teachers have said is a hard one to make stick

when you are dealing with students who think failure means they are stupid. Many of the teachers spoke of how important it is to develop a safe environment and a strong positive relationship so that trust can be developed. That trust and safety is what is needed for students to take risks, according to many of the participants. The risk they are referring to is the risk of failure. Students with a fixed mindset fear failure because failure defines their intelligence or in more student terms, it makes them feel stupid, according to T10, T5, and T7. It is important for students to feel safe to make mistakes or fail so they can learn that the mistakes or failure is a part of learning.

Several teachers shared strategies they use to begin that lesson from the very start of the school year. T2 explained, "I start the year with a discussion about failure being normal and a part of learning. I show this video, 'Famous Failure' from Youtube. They are always amazed by it, and it sets the tone for the year -- it is just a part of learning." T6 stated, "One of the things I work on a lot is their idea of failure. I keep reinforcing that it is part of learning. That is constantly being talked about. So, when they fail at something and their head is low, I will look at them and they will say, 'I know now I have learned how not to fail like this again. I am going to get better." T3 teaches the students to answer with a growth mindset response when she asks the question, "How do we learn, students?" Then they will say, 'From our mistakes and failures.' We then look at what we need to do better for the next time." Helping students overcome their fear of failure is a key objective for teacher participants.

Research Question 2: How Do Reading Teachers with a Growth Mindset Define a Growth Mindset Culture?

This question is designed to investigate the teachers' mindset toward their students and their ability to learn, their perceptions of what a growth mindset culture is, and their experiences

of what a growth mindset culture presents like in a classroom. Based on the interviews, lessons, and instructional units, findings are that a growth mindset culture is a teacher growth mindset toward students, a community of learners with common understandings, and students' self-efficacy promotes effort.

Teacher growth mindset toward students. All teacher participants agreed and asserted with confidence that all of their struggling students can learn and become as equally intelligent as any other students. They unanimously agreed that all students learn differently at different rates and in different ways. They believe that there is no one size fits all for learning. T3 stated, "All kids can learn but they will all do it in their own way and own time." T10 explained, "When I was a new teacher, I thought everyone learned the same way. It didn't take long for me to realize that everyone learns but different ways and at different speeds. They are always growing and evolving as learners." Several teachers referenced different learning styles. T4 asserted, "All can learn but all don't learn the same way or same speed. Some need scaffolding, repetition, some learn visually, some learn auditorily, while others learn kinesthetically." T6 agreed stating, "Of course, they all have the ability to learn; they just all have different learning styles." T7 posited, "My kids can learn like anyone else at their grade level." Two participants referenced more specifically how they reach the learning levels of other students. T9 stated, "They all can learn but different ways. We have to work with the data to figure out what works best for them to help them get there." T2 noted, "They can learn and do anything they set their minds to. They just need the tools to get there which is what I provide them." Finally, T11 explained, "Their effort is what makes the difference. Practice makes progress. They can do it with effort." Based on the participant responses, they all do have a growth mindset concerning their students' abilities.

All teachers agreed without reservation that their students with learning disabilities could learn as much and be as intelligent as any other student at grade level, but they needed more support to get there. T10 explained, “They have the capability to learn as everyone else they just need more hands-on accommodations which I call an extra sprinkling of me.” T6 stated, “They can learn but the struggle sometimes. They just need the strategies to be successful and lots of support.” A few of the participants discussed the fact that students with a learning disability might learn at a different rate. T1 noted, “They can certainly learn at the same grade level as their classmates, maybe not as soon as their classmates, but they can.” T3 posited, “They have the capability; it just takes them a little bit longer than others.” T5 also asserted, “They can make progress, but they will do it at a different rate. Some makes progress faster than others.”

A few of the teachers referenced the need for learning disabled students to find the specific strategy that works best for them. T7 stated, “They all have the same abilities just as any other kids, but they have to find the way to compensate for their disabilities that works for them. They certainly can do that.” T2 pointed out, “I know they can learn just like everyone else, but it will take longer, and we just need to figure out their button.” T4 explained, “I know if I give them the tools, they can do it an learn anything.” T11 referenced specific needs of a learning-disabled students when she stated, “Learning disabled kids need to see things different ways many different times often to learn particular skills.” And finally, T10 explained how important it is to get the students to not focus on their disability as a reason they are achieving when she stated, “Of course they can learn like everyone else. I tell them they don’t need to get hung up on the learning disability. It’s no big deal. We all have something that is an obstacle. We just have to figure how to get around the obstacles.” Based on the interview responses from the teacher

participants, it is clear that all participants have a growth mindset concerning their students with a learning disability.

A community of learners with common understandings. According to the participants, a growth mindset culture happens when a community of learners that include the teacher who have a common understanding of learning and act on that understanding. T11 pointed out:

> We are all learners. We are learning from each other. We all have abilities, and we all have areas to grow in. A growth mindset culture is when everyone understands that I'm going to grow no matter what and is not warried about what everyone else is doing.

T7 added, "It is a class in which everyone is really positive about learning and their potential and the potential of others in the class." T6 explained, "It is a class full of independence and confidence in learning -- a belief system shared by all." T2 shared T6's perception stating, "It is students who are confident in their ability to learn."

Several of the teachers referred to the environment and how it effects the growth mindset culture. T4 noted, "It is a community of learners who feel safe, take risks, and aren't afraid to fail." T2 agreed, "It is an engaging, safe environment where the students feel comfortable to participate and not scared to take risks." Other teachers discussed the element of no fear in a growth mindset culture. T5 posited, "Growth mindset culture is a group of students that are excited about school and about learning. They are not afraid to fail." Also important to the growth mindset culture, according to the participants, was positivity and teamwork. T10 pointed out, "It is all about positivity and word choice. The language you use in the class, how you deal with setbacks. We do not say failures, we say setbacks. We do not say weaknesses; we say areas of growth." T3 asserted, "It is when everyone understands the power of *yet*: I do not know it *yet*, but I am going to get there. Students working to figure out what works for them because they are excited about learning." T8 focused on the positive relationship and teamwork of the growth

mindset culture stating, “It is all about kids encouraging each other and not only the teacher encouraging. The kids pulling each other along in a safe classroom.”

Students’ self-efficacy promotes effort. Based on the experiences of the teachers having or seeing a growth mindset culture, they shared a number of common characteristics that one would see if walking into a classroom with a growth mindset culture. One of the key characteristics they all spoke of is the students’ belief in their ability. T2 stated, “You would walk in to see kids believing in their abilities. They might say I could not do this before, but now I can. They all are pushing past the struggle.” T9 explained, “You would see young people who work to overcome and achieve believing they can do it with effort. The students’ eagerness to work and put effort into their success was another key characteristic identified. T7 suggested, “You would see a class of students who are confident in their abilities, who are positive about their struggles, and are willing to work at it.”

T10 explained, “You would see kids that will be trying even if they do not want to when they know it is hard. They will demonstrate a willingness to push through it and put the best foot forward because they feel they are going to make growth.” T11 asserted, “If you ask a kiddo in the class, they will know how they are making progress in their learning. They will be able to name it. They will be having conversations about their strengths and weaknesses in an effort to grow.” This independent learner idea was continued, but also added the social/emotional support of a growth mindset culture in the explanation from T10 who posited, “You would see social contracts, teamwork, peers helping each other. You would see encouragement from students to students. You would see independent learners.”

The most consistent comments by the teachers referred to the students’ belief in themselves, the effort of students, and the success that comes from that effort. T4 asserted, “You

would see a lot of student success and hard work. Students helping students, and a safe environment to fail and learn." T2 stated, "You would see positive mindset quotes for daily journals, students who are self-reflecting learners, always wanting to do more or do better because they know they can with work. They all are very engaged, putting in lots of effort, and finding success." T3 explained, "You would see kids excited about learning, not afraid to fail. They are a team working strategies to find success." The idea of setting goals, working a plan of strategies is continued in the response from T8, "Any task that is put before the students, they self-reflect, consider what they need to do to get there, and they set goals to make it happen."

Research Question 3: What Have Reading Teachers Perceived to be the Benefits of Cultivating a Growth Mindset Culture?

Research question three explored the teacher perceptions of the benefits of a growth mindset culture. Based on the interviews, lesson plans, activities, and instructional units, the findings are that the benefits are universally positive for the class and the individual student potentially changing their trajectory in life providing lifelong benefits. Increasing student successes due to a developed level of grit was a key benefit.

Universal life-long benefits. The benefits of a growth mindset culture and developing growth mindset in the individual student were consistent with all participants. T5 stated, "The students own their learning. They own their successes and their failures but keep pushing and striving." T2 noted, "The kids believe in their abilities and their futures. The work hard to do the best at whatever they do." T7 further explained, "Overall, a real positive effect on their learning and an expectation that they are going to have failures, but they can get through them." Other participants discussed the value of overcoming fears as a benefit that moved them to develop that grit. T10 stated, "The risk taking is probably the greatest benefit and the getting rid of the fear of

failure that moves them forward." T4 explained, "The benefit is definitely more independent learning and thinkers. They will have the freedom to try new things and not be afraid."

These benefits then lead to the longer-term benefits of future successes. T3 explained, "The students who learn this mindset will benefit them in school, in careers, college and the long run far past the classroom." T9 posited, "It is a long-term goal for the students to be a productive part of society. They do not settle or give up in life. Kids who have struggled and work to develop a growth mindset have so much more to offer to employers compared to those who do not." Finally, T11 summed it up, "Life will throw them a lot of curve balls; if they have a growth mindset, they will be able to figure it out."

Research Question 4: What Are the Challenges, If Any, Encountered by Reading Teachers When Developing a Growth Mindset Within Struggling Students?

This question was designed to investigate the teachers' experiences and perceptions of obstacles and struggles they experiences in helping students that struggle academically. Based on the interviews, lessons, and instructional units, teachers shared that one consistent barrier was when environmental or internal events reinforced the fixed mindset. Another obstacle that teachers found difficult to overcome was the stigmas that comes with a learning disability label or a learning level label. Finally, teachers felt that learned helplessness and years of a fixed mindset were hard to overcome.

Reinforcements of the fixed mindset. Teachers reported that one the of most consistent obstacles that would get in the way of students developing a growth mindset was events that would reinforce the fixed mindset. T10 commented, "When failures in their lives outweigh their successes. Once they start defining themselves by their failures, it can be hard to break that habit." T6 explained, "Students would only get a growth mindset intervention in my class. In

other classes, teachers would tell them that they can't do it because they are dyslexic." T11 stated, "They will be doing great in class making great progress and growth, and then the STAAR test will happen and they will fail it. All the old emotions return and suddenly the test is defining their intelligence in their mind."

According to several teachers interviewed, parental influences can become barriers for the student's mindset development cementing them in a fixed mindset. T6 pointed out, "Parents can undo much of what we work on by just a couple words like, you are not smart enough or you are so stupid." T3 posited, "Parents can be a real barrier telling the kids they are not enough, they are lazy, and never tell them they are proud of them. The parent who has a fixed mindset is really hard to reverse." T10 stated:

> The biggest obstacle is those naysayers at home-the parents. I had a student tell me that their parents tell them they are stupid and just need to get through high school and get a job. They have more powerful influence than I have in only 45 minutes a day.

Finally, the fixed mindset is reinforced when they experience feelings of being different from peers, from other teachers, or even because they need extra support. T9 explained, "A real obstacle comes from peers teasing them for being different, from teachers treating them like they have less abilities, and even feeling inadequate because of the accommodations they get."

Labels. Teachers found that a learning disability and other label will become an obstacle for a student to move into a growth mindset. T6 stated, "Reading level labels can cause a kiddo to define themselves or their abilities: 'I am just a B level; I cannot do that. It will be too hard for me.'" T1, T11, and T6 all agreed that learning disability labels will often become a crutch for the student. They will say, "I cannot do that; I am dyslexic." Or they may think, "I am not going to try that; it will be too hard to do with my ADHD." Parents can also use the label as a crutch that debilitates a student's mindset growth. T4 commented, "Parents will often tell the kids, 'Just

pass. You don't need to worry about doing really good." Also, parents who share the disability will share their fixed mindset with their children. T8 posited, "Parents giving the students excuses not to achieve by saying, 'You are dyslexic; you will not be able to read well' or 'You will always struggle in school because I did.' They are trying to be supportive, but it is destructive to the student. They do not get that." Finally, T6, T3, T1, and T8 all felt that parents who refuse to get their kids tested for dyslexia or ADHD are also an obstacle because the students are not able to get the supports needed. T1 explained, "There are several students who I know are ADHD, but the parents refuse to get them tested so they will not get the medicine that could help them to avoid the struggles that come with it."

Learned helplessness and dominating fixed mindset habits. Elementary teachers reported that students in the early years do not develop fixed mindset or learned helplessness until or after third grade, but after three years of struggle and the introduction of the STAAR test, they begin to demonstrate a fixed mindset and begin developing a learned helplessness. Several secondary teachers explained that so many of their students have a fixed mindset that is hard to break because of years without a feeling of success, years of feeling stupid, and development of maladaptive approaches to learning such as apathy and avoidance behaviors. T10 explained, "School is a torturous place for students with learning disabilities where they never feel good about themselves. They shut down and do not want to be here. It is hard to break through that level of apathy in only 45 minutes a day." T4 asserted, "Students who have developed avoidance behavioral habits or act out in class to draw attention away from that fact they feel stupid have a hard time overcoming these deep-seated habits and beliefs."

Several of the teachers, both elementary and secondary, stated that students' habit of comparing themselves to other students becomes a bit barrier for them. T7 noted, "Their biggest

barriers come from their lack of belief in themselves, constant comparisons, and feeling that failure or struggle defines their lack of intelligence. It creates a wall that takes hard work to break through." T5 expressed, "Their biggest obstacle is the learned helplessness they have developed over the years believing that because they have a learning disability, they cannot achieve." T10 pointed out, "It is the wall they put up. They refuse to try because when they try hard and fail, it means they are stupid; so, if they refuse to try, it is just a choice they are making and does not define them. I see many kids with learning disabilities come in my class with this learned helplessness."

Summary and Preview of Chapter 5

This chapter began with a review of the purpose of the study and the research questions that were being investigated. Major themes that arose out of the analysis of the eleven participant teachers were identified and discussed. Chapter 5 contains a discussion of the summary of the findings, implications, recommendations for future research, and conclusion.

Chapter 5: Discussion, Recommendations, and Conclusion

The purpose of this study was to describe the best practices of reading teachers who have a reputation for high student achievement and who adhere to a growth mindset in an effort to build a growth mindset culture with their students. Students' belief in their ability to learn, or their self-efficacy, is vitally important in their academic success (Bandura, 1994). Because of this, students who develop a fixed mindset, which is indicative of a very low self-efficacy of intelligence, struggle in school and in life (Dweck, 2006). Students with learning disabilities have been shown to demonstrate a fixed mindset and develop maladaptive approaches to learning that do not promote success (Baird, et al., 2009).

This qualitative instrumental case study was designed to examine the best practices and strategies to move academically struggling students, as well as those labeled with a learning disability, from a fixed mindset to more of a growth mindset of learning and intelligence. The foundational theories of this study come from Social Cognitive Theory and Mindset Theory (Bandura, 1986; Dweck, 2006). Finding were gathered from 11 public school reading teachers/specialists from both elementary and secondary education in a large Central Texas School district. The four research questions guiding this study were:

RQ1. What best practices do reading teachers implement to build a growth mindset within struggling students?

RQ2. How do reading teachers with a growth mindset define a growth mindset culture?

RQ3. What have reading teachers perceived to be the benefits of cultivating growth mindset within students?

RQ4. What are the challenges, if any, encountered by reading teachers when developing a growth mindset within struggling students?

This chapter includes a discussion and interpretations of the finding, the importance of emerging themes, and how they answer the research questions. First, recommendations are included for practice among teachers, educational leaders, and parents is discussed. Secondly, recommendations are discussed for future research in this area of study. The chapter ends with a reflection and conclusions.

Interpretation of Findings

Data collected was based on participants who identified their students as students with a fixed mindset when they first arrived in their class. The eleven teachers also stated that 30-100% of their students had a diagnosis of dyslexia, ADHD, or other non-intellectual based learning disability. It is also significant that the elementary teachers did not see the fixed mindset characteristics until after three years of struggling and failure on the first state STAAR test in the 3rd grade. Secondary teachers who reported that their students with a fixed mindset for learning demonstrated maladaptive approaches to learning such as shutting down, putting up a wall refusing to try, or severe avoidance behavior. Baird (2009) supported these findings stating that students with a learning disability often developed maladaptive approaches to learning. High school teachers who reported that the fixed mindset and low self-efficacy affected the students' ability to project their future and lowered their ambition and goals for their lives and careers after graduation.

Research question 1: What best practices do reading teachers implement to build a growth mindset within struggling students? The question was answered by 11 volunteer reading teacher/specialist participants from a large public-school district from both the elementary and secondary levels. Data collection provided three key emerging themes each of which are multi-dimensional. The first theme was to help struggling students move from a fixed

mindset to a growth mindset, teachers must create an environment of safety and trust in their classrooms. Often students compare themselves to others and worry about 'looking stupid' with their peers which makes them avoid trying or putting in effort. As well, the fear of failure often keeps these students from trying. Students' consistent lack of success over the years academically has caused them to equate failure with their lack of intelligence (Aditomo, 2015; Dweck, 2006). According to the teachers, students would not try because if they tried and failed it meant they were stupid; if they did not try, it was just a choice. This is where creating the safe environment to take risks was so important. Because of their fear of failure defining their intelligence, the students needed to feel safe and unjudged to be able to take risks in learning (Bandura, 1986).

There were specific practices that were key to creating this environment; one of which was providing social-emotional engagement through cooperative learning practices. This theme is supported by the Lev Vygotsky's theory of cognitive development in which he asserted that learning is a social event and kids learn better socially (Karpov, 2014). Cooperative learning strategies that helps kids learn includes group collaboration in learning where students at a higher level can help kids who are at a lower level increase their achievement level which is called the zone of proximal development (Karpov, 2014). For struggling students, this collaboration of learning with other students provides a social-emotional support that helps them feel safe to not stand out as a low achieving student (Brooks, 2004; Rissanen et al., 2019, Schmidt, et al., 2015). Cooperative learning includes group work, partner work, and any number of peer collaborations.

Another important component to the development of a safe and trusting environment is in the teacher working to create a positive relationship with the students (Brooks, 2004; Fitzgerald & Lauria-Fitzgerald, 2016; Robinson, 2017). Unanimously, teachers agreed that working to

develop a positive relationship with students was the first order of business when the school year began. These findings were consistent with the research of Deprez (2015), and Jensen (2005; 2009) who explained that the relationship the teacher builds with the students can overcome many of the challenges of struggling students. These relationships are built through numerous conversations, questions, and sharing between the teacher and the student to get to know each other. The positivity of the teacher toward the student and the work of the student is exceedingly important in developing the relationship and help developing the trust (Deprez, 2015; Jensen, 2005, 2009). Teachers did this through positive feedback to students that expressed the teacher's belief in the students' ability to achieve, learn and grow. These findings were supported by McLaughlin (2008) who posited that when teachers express their belief in their student's ability, it is the start to the student's belief in themselves. Over a short time, teachers reported that students began to develop a trust that the teacher was going to help them, that the teacher believed in them, and that the teacher was there to help them. Once this trust is developed, teachers reported that students would be willing to take risks and put in effort toward learning which was the first step in overcoming their low self-efficacy and fixed mindset.

Positivity as a focus of the class between all in the class was very important. Teachers said it was important for the students to feel that they all in this together, and they are all different but we all can learn and grow. With that, teachers also said that praise must always focus on the effort and not on their achievement level. These findings were supported by Dweck (2006), Haimovitz and Dweck (2017), and Robinson (2017) in which all researchers emphasized that focusing praise on effort is one of the keys to developing a growth mindset. The findings showed that if you focus on the academic level of achievement, it creates a label that reinforces the fixed mindset. Instead, the focus of the teacher's praise should be on effort (Dweck, 2006).

Examples of such effort-based praise are “I’m so proud of how hard you worked at that,” and “It was all the effort you put into learning that made you do so well.” Haimovitz & Dweck (2017) and Rattan et al. (2012) explained that parents and teachers have the power to develop or reinforce a growth mindset by focusing encouragement and comfort language on effort.

The second theme that emerged was teachers must create success experiences for their students. Unanimously, teachers agreed that teacher and student developed learning goals are vital for creating the feeling of success. Rissanen et al. (2019) supported this finding by asserting that student-led and student-centered instruction helps students feel a sense of autonomy and ownership. Teachers reported that conferencing with students, setting attainable and measurable learning goals, and then using assessment data to help student experience success was a proven strategy to help students overcome their “I cannot do this” mindset. The key to this strategy is focusing on growth and the effort that helped create that growth (Haimovitz & Dweck, 2017). Teachers shared several stories of students who began to believe they could be successful in learning and because of that belief became motivated to put more effort into their achievement which produced higher achievement. Teachers explained that students learned where they were academically based on scaffold learning goals, they analyzed the data with the teacher, and together they would celebrate the growth and set the next growth goal. During the course of the year, teachers said they would look at learning growth charts to help the student see their learning growth and be able to see how far they had come over the year.

Reflection was also reported to be a key strategy used by teachers. They explained that through reflection writing, students could reflect on their learning, their growth, how to handle their setbacks, and it promoted positive cognitive skills. Daily journal writing helped student process concepts, process emotions related to learning, and helped them to focus their thinking.

Teachers provided students with positive quotes of growth mindset to write about. They would also reflect on their setbacks, how they could recover, and what they would need to do to move forward. Several teachers discussed a "Glow and Grow" strategy for reflective writing. After they had a conference with the teacher to discuss their growth measures and their learning goals, they reflected on their glow or what they did to achieve the success and how they feel about that success, and then their grow by coming up with a plan to reach their next learning goal.

Another strategy used to create successes for struggling students is teachers modeling everything for students. Teachers all agreed that if they wanted to set students up for success, they had to first model everything they wanted students to do. Modeling thinking was a big modeling strategy used by these teachers. They would do the writing or reading they wanted the students to do, and they would think aloud to model what the students needed to think about during the process. This strategy helps struggling students become more metacognitive or be aware of their thinking which helped them not only in learning but also in correcting negative self-talk. Teachers explained how they even modeled struggling to show students that struggling is part of the learning process, and they would model the thinking to overcome that struggle. This finding is supported by Rissanen et al. (2019) who asserted that student-centered instruction will help students feel more capable and confident in their achievement efforts.

The third theme that emerged was the strategy of teaching brain science and mindsets directly to students. Not all teachers taught brain science, but those who reported a noticeable effect on students' motivation. When teachers teach brain plasticity, how the brain learns, and the ability to get smarter just by putting in effort, students begin to change their belief in their ability (Blackwell et al., 2007; Paunesku et al., 2015). Additionally, teachers who wanted to move students with a fixed mindset to a growth mindset taught students about the two different

mindsets through direct teaching units and through mindset vocabulary (Appendix G). One teacher started the year by giving the students the Dweck Mindset Measurement (Appendix H) to identify where their mindset was at the beginning of the year then again at different intervals to measure their mindset growth progress. Reflection was also used in the teaching of mindset by having students reflect on their mindset and to determine which mindset they had or how their mindset has changed over the year. Reinforcement of growth mindset verbally was also key to shifting student mindsets. Teachers reported that the power of "yet" to transform student thinking and self-talk was highly effective. In other words, the student would say, "I cannot do that," and the teacher would say "You cannot do that, *yet*" which suggests with effort they can. When the students are taught to think of their lack of success in terms of "yet" it transformed their thinking about their ability to achieve (Haimovitz & Dweck, 2017). Haimovitz and Dweck (2017), Dweck (2006), Rissanen et al. (2019), and Schmidt, et al., (2015) supported the findings that feedback and praise must focus on the process of learning, on student effort, and on student successes.

Teachers stated that a very important component of teaching growth mindset is teaching students about failure and how to deal with it. Failure must be taught as a process of learning that is expected when trying to learn anything new (Haimovitz & Dweck, 2017; Dweck, 2006; Rissanen et al., 2019; Schmidt, et al., 2015). Struggling students often equate their failure with their ability or intelligence which causes them to develop a fear for failure. Teachers who taught their students that failure is part of the learning process reported that their students began to let go of their fear of failure. This approach to failure must be taught and reinforced repeatedly according to teachers for students to begin to absorb it.

Research question 2: How do reading teachers with a growth mindset define a growth mindset culture? Teachers all expressed unanimously that they felt strongly that all

their students had the ability to learn like any other student even though they struggled. They further expressed that their struggling students might not learn at the same pace or in the same way, but they could learn to the same level as everyone else. They acknowledged that every student learns differently. Some students learn kinesthetically, others learn auditorily, others visually, and some have a combination of learning styles. Additionally, teachers all agreed that their students with learning disabilities, as well, had the ability to learn to the level of everyone else, but they just needed more support. Teachers expressed that students with learning disabilities like dyslexia and ADHD need multimodal and repetitive learning opportunities to be successful. It is clear by teacher responses that the growth mindset of a teacher toward her students is a significant part of helping students develop a growth mindset, especially those with learning disabilities. Rissanen et al., (2019) explained that a teacher's belief in their students' abilities will move the students to believe more in themselves.

The second theme that emerged was that teachers believed that a growth mindset culture was a community of learners who all had the same understandings. They described a classroom where the teacher and all the students understand that effort is what makes you smarter and helps you to achieve. Dweck (2006) and Haimovitz and Dweck (2017) noted that when students understand how their brain learns and that the only limit to their learning ability is the effort they put into learning, their achievement and motivation increase. According to the teachers, a growth mindset culture is an environment where everyone understands the importance of being positive, working together, helping each other, and where failure is expected. In a growth mindset culture, students are excited about learning, about helping each other achieve more, and about what they can achieve with effort (Haimovitz & Dweck, 2017; Dweck, 2006; Rissanen et al., 2019; Schmidt, et al., 2015). And of course, they see a growth mindset culture manifest in a classroom

in which students feel safe and where relationships between teacher to student and student to student are positive and supportive. Everyone in the class see themselves as a team working together to grow.

The third emerging theme was that students in a growth mindset culture have a high self-efficacy of learning and intelligence that promotes effort. Blackwell et al. (2009), Dweck (2006), and Dweck (2008) asserted that students with a growth mindset have a confidence in their ability to learn and develop their intelligence. That understanding and effort creates resilience and perseverance in the students (Duckworth, 2016). Teachers explained that in a growth mindset culture, students understand and know their areas of growth in learning and the areas they still needed to develop. Because they know that they can achieve with effort, the students in this culture would encourage each other through struggles and help redirect fixed mindset after setbacks (Haimovitz & Dweck, 2017; Dweck, 2006; Rissanen et al., 2019; Schmidt, et al., 2015). In this culture, teachers stated that social emotional needs of the students would be met through collaborative learning and positive, supportive relationships with teacher and peers. A growth mindset culture in a class produces goal-oriented and reflective students who can work through struggles and setbacks effectively.

Research question 3: What have reading teachers perceived to be the benefits of cultivating a growth mindset within students? The clear theme that emerged from this was a growth mindset cultivates life-long benefits for students in their current life and in their future. All eleven teachers agreed that a growth mindset will help students currently to raise their achievement in school. This achievement would be possible for students with a growth mindset because they would not have any fear of failure and would understand that effort is the key to learning (Dweck, 2006; Haimovitz & Dweck, 2017). Teachers stated that students with a growth

mindset become independent learners who take ownership of their achievement. Teachers also felt that students who have struggled but developed a growth mindset are going to have what future employers want. The growth mindset is believed to develop resilience and grit in students (Dweck, 2006; Duckworth, 2016; Haft et al., 2016; Lauren, 2015; Yeager & Dweck, 2012). Students with a growth mindset, according to the teachers, will reach for high achievement in their college experiences, their careers, and every other aspect of their life.

Research question 4: What are the challenges, if any, encountered by reading teachers when developing a growth mindset within struggling students? In interviewing all eleven teachers, a key emerging theme was that some instances in the life of the child will reinforce a fixed mindset which can be a barrier to developing a growth mindset. Teachers all stated that only having them in their class a short time every day meant that some days it was one step forward two steps back. Teachers explained that they worked hard during their time with their struggling students to use all the wonderful strategies discussed in research question one, but when events happened that reinforced the students' fixed mindset, it set them back. For instance, in elementary, the teachers stated they have the kids for pull outs for an hour a day. The students have another teacher for the rest of the school day. Often, those teachers will reinforce the fixed mindset with words that provide labels or encouragement that reinforces a fixed mindset like, "it is ok, you do not have to read. I know you struggle." These findings are supported by Brooks (2004), Rattan et al. (2012), and Schmidt, et al. (2015) who noted that words that are meant to be encouragement or support often help develop a fixed mindset. The way the teachers combat this challenge is to educate other teachers on the growth mindset as well as share the strategies they are using and the progress their shared student is achieving. It often

helps the teachers to better understand the student and to partner with the reading teacher to support the student consistently.

This theme also includes the negative influence of peers outside of the class who tease kids because they are different which reinforces the fixed mindset. When peers' achievement is highlighted and is considerably different from the student's achievements, they feel different and begin to compare themselves with other students. This, too, according to the teachers, reinforces the fixed mindset in struggling students and can be a setback for their mindset development. These finding are supported by Brooks (2004) who posited that struggling students develop a fixed mindset because they feel different from others because of their disability. Teachers stated that the way they combat this is to teach the students how everyone is a different type of learner, and they are going to learn different than everyone else. Teachers shared that teaching the students about brain science helps students better understand their brains which improved motivation. Paunesku et al. (2015) supported this finding in their research that demonstrated teaching brain science can improve student achievement.

Teachers all agreed that the Texas STAAR test which is a state standardized test for achievement is an obstacle as well. When students struggle to achieve with this test, it creates a fixed mindset quickly at all grade levels. Elementary teachers believe that it is the standardized test that creates the beginning of a fixed mindset development in the struggling student when they first take it in third grade. High school teachers reported that students will be making great growth in the class and feeling confident in their ability because of the improvements, and then the STAAR test will happen and set them back. If they fail it, it is an automatic retraction into a fixed mindset that takes them a while to get past again. Teachers asserted that this is where the goal setting and growth monitoring is most effective. When they feel defeated, the teachers go

back and look at how much growth the student has had, and the teachers show them the difference in the score the last time they took it compared to this time. If the student can see the growth, it will restore their hope they can pass it next time and motivate them to keep working.

The second theme that emerged was that of labels being an obstacle. Jodrell (2010) posited that disability labels and social identity due to such labels significantly decrease self-efficacy and performance in students with a reading disability. According to the teachers, when students are labeled with a learning disability or even a learning level, it can cause them to limit themselves and their abilities. “I am only a level 4 reader; I can’t read this.” Parents can also have the same effect when they have the same disability and try to comfort their child by saying things such as “Just do what you can; I have dyslexia. I have never read well; you won’t either.” Some teachers reported that in more economically challenged areas, parents can be very negative to students assuming they are stupid because of their disability and never expecting much from them. These parents are reinforcing that the label defines the child’s abilities. Teachers stated that the parents have a much greater influence over the students in a day than they have; therefore, when the parents reinforce a fixed mindset with the student, it is a difficult barrier to overcome. Teachers shared that to overcome this obstacle, they often work to develop relationships with the parents, which takes time, that will allow them to educate the parent and help them to develop a more growth mindset toward their child.

The final theme that emerged answering this research question was that of learned helplessness as a barrier to student developing a growth mindset. When a student does not feel successful at school for a long period of time overall, they will develop an apathy for learning. Students begin to develop maladaptive approaches to learning that include shutting down and putting their head down refusing to deal with instruction (Baird et al., 2009). Teachers referred to

the students ‘putting up a wall’ between themselves and the classroom environment. Often these students will resist any relationship development with the teacher or peers.

Teachers reported other students will demonstrate other forms of this maladaptive behavior such as various forms of avoidance, which was supported by Baird et al. (2009). This might take the form of a student who negatively acts out in class because they are angry about their feeling of helplessness. It might also take the form of a student who is the “funny guy/girl” in the class. Teachers explained that this student is often trying to avoid their learning and works to take the attention of their peers away from their learning struggles. Often this learned helplessness with take the form of a student who uses their disability label as a crutch. “Miss, I cannot read that; I’m dyslexic,” or “I will not remember any of that; I have ADHD.” Finally, secondary teachers stated that a huge avoidance behavior seen by their apathetic students is using their cell phones to avoid their learning. This has become an increasing problem with more and more kids having phones at a younger and younger age. This learned helplessness is often seen in students with learning disabilities because they have a more consistent experience with failure due to the challenges to learning their disability creates (Baird et al., 2009; Costello and Stone, 2012; Haft et al., 2016; Zheng et al., 2014). Teachers explained that to combat this learned helplessness, they have to never give up and keep encouraging, keep believing in their ability, keep showing them they can, keep supporting and praising their effort, and work hard to develop a relationship with the student as the first step to getting through their apathy. These findings are supported by Costello & Stone (2012), Dweck (2006), and Haimovitz and Dweck (2017) who asserted that the impact and positive persistence of the teacher to reinforce a growth mindset can help overcome a fixed mindset. Brooks (2009) supported the finding that the love and

determination of the teachers allowed them to get through the walls of learned helplessness with their students.

Implications for Practice

The findings of this study have implications for not only the educational setting but also with parents of students with learning disabilities. First, teachers of any content area at any educational level who have struggling students, especially those with fixed mindset because of a learning disability, can implement the strategies discussed, in part or in whole, to increase student achievement. The findings of this research should also help teachers to better understand their students who struggle, to understand their behaviors better, and to be able to see the needs behind the behaviors. Not only does the findings present a means to give hope to students, but it also provides hope for teachers who struggle knowing how to help these students effectively.

One of the key messages of this research is in order help these struggling students, it is imperative for teachers to develop a positive relationship with their students and to create an environment in their classroom that is safe to take risks. This takes a student-centered approach in teaching. The findings of this research also suggest that teachers need to educate themselves about fixed and growth mindset as well as brain science to better understand the capacity of all students' brains to learn, even those with learning disabilities. It is clear from this study, that teachers must have a growth mindset about their students' ability to learn to be able to effectively move them into higher achievement. As well, teachers not only should understand brain science and mindsets, but they must put it into practice by teaching brain science and mindsets to their students. To help struggling students, mindset instruction needs to be a focus in day-to-day instruction and planning.

Many teachers use instructional data to guide planning and instruction, but this research reveals the value of using data and progress measures with students to create success and inspire hope in abilities. Teachers should use this data with students to set learning goals and review progress measures to create successes for struggling students. This can be done in any class and in any content area. Educational leaders who would like to transform school achievement could start by implementing this practice as a standard practice in all classrooms.

Educational leaders could implement many of these strategies on the campus level to create a growth mindset culture in their school. The first step for leaders would be to educate the staff and the faculty about brain science and mindsets and focus their staff develop for the year around a growth mindset culture. This could be done by emphasizing a student-centered instructional and planning practice. Additionally, training teachers in the value and ways to develop positive relationships with students (this doesn't come easily for all teachers) would be important to implementing a growth mindset culture initiative. Leaders could develop school-wide instructional practices that teach brain science and mindsets to students at the beginning of the year and programs throughout the year to support and reinforce it. A common message from all staff and faculty in all situations should be – that all kids can learn, failure is a part of learning and is expected, and effort to learn is what improves achievement. This belief system among all constituents could have dramatic effects for the school achievement and for the community in supporting their students.

Finally, the findings of this research can help parents to understand their child's needs and behaviors due to the fixed mindset they have developed. In understanding what creates a fixed mindset for children and the characteristics that come with that mindset, parents can better know how to intervene with their children's mindsets and be a positive influence for a growth

mindset. Parents can also be equipped to have conversations with their children about their feelings about their ability to learn to help them overcome or prevent a fixed mindset.

Recommendations for Future Research

Recommendations for future study would include a quantitative experimental research in which struggling students with learning disabilities are studied before and after a brain science intervention to measure the specific effects on their achievement which would build on the work of Paunesku et al. (2015). It would be significant to see how the online brain science intervention specifically affected achievement of students with a fixed mindset of learning and intelligence due to the label of a learning disability.

Another recommendation for future study would be for researchers to delve deeper into the needs of each individual learning disability. A study that researches the individual types of learning disabilities such as dyslexia or ADHD, their individual mindset tendencies, their challenges, the different interventions specific to the needs of that disability, and the effects of individualized mindset interventions could have a significant impact for education and student achievement. It would also be significant for educators to be able to identify the specific challenges and strategies that are effective with each of the most commonly seen learning disabilities.

Finally, a future recommendation for study would be to look deeper into the relationship factor that teachers have with students who struggle. Research investigating the key characteristics of the teachers who can effectively develop a positive relationship with their struggling students, the strategies that are used to develop that relationship that are most effective, how mindset of the teacher effects the development of that relationship, the obstacles

that struggling students perceive to have in developing a positive relationship with their teacher would be a significantly deeper look in one of the key aspects of helping struggling student.

This research is a foundational study into how we can help struggling students and students with a learning disability overcome the fixed mindset that comes from years of feeling unsuccessful as a learner. This issue is complex and there are many areas of research into this problem that are still left to investigate.

Reflections

Throughout my career as an educator and an educational leader, I have encountered many students who suffered from a fixed mindset because of years of struggle. I have led and coached many teachers who did not know how to best help these kids find high achievement not only academically but also in life. Even in my own home, my youngest son struggled for years in school. Once he was diagnosed and we were able to provide accommodations to help him, it was not enough. He had already developed a fixed mindset of intelligence, had extremely low self-efficacy, and develop a wide variety of maladaptive approaches to learning. As a parent and as an educator, I struggled to find answers to help this population of student. I knew that the students I had encountered, and my son were very intelligent and could learn whatever they put effort into. But, my efforts to help them had, what I felt, a minor impact. This problem became my focus as a teacher, as an administrator, as a mom, and finally as a researcher.

My hope in this study was to provide educators and parents tools to understand their struggling student and to help them find high achievement. I feel blessed to have been given access to such high-quality, dedicated teachers who were so willing to share their knowledge, wisdom, and skills. The work to solve this problem has only just begun. My hope, more than any other, would be that through this research even just one student who struggles with learning

because of a learning disability would be helped to learn that they can do anything they put effort into and can become anyone they can dream to be. That would make all my efforts in this research worth it.

Conclusion

The goal of this study was to investigate and provide strategies used by reading teachers who have had success in moving students with learning disabilities and those who struggle academically from a fixed mindset to a growth mindset thereby improving their achievement. Utilizing the instrumental case study method provided me with the opportunity to look at the ideas and perceptions of eleven different teachers at both the elementary and secondary levels.

The interviews of all eleven teachers helped identify characteristics of students with a fixed mindset due to years of perceived failure possibly caused by a learning disability. Additionally, the teachers identified strategies that have been proven to be effective in moving these students to a more growth mindset. And finally, the obstacles that students and teachers face as well as the strategies to overcome those obstacles were identified and discussed. The findings provide teachers and parents a better understanding of the mindset, its effects on their students, and ways in which they can help those students move into a growth mindset that will benefit them for the rest of their lives.

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Appendix A: IRB Approval

ABILENE CHRISTIAN UNIVERSITY
Educating Students for Christian Service and Leadership Throughout the World

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885

December 11, 2019

Brenda Cornell
Department of Organizational Leadership
Abilene Christian University

Dear Brenda,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled "An instrumental Case Study: Growth Mindset Instructional Best Practices for Learning Disabled Students",

(IRB# 19-136)is exempt from review under Federal Policy for the Protection of Human Subjects.

If at any time the details of this project change, please resubmit to the IRB so the committee can determine whether or not the exempt status is still applicable.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs

Appendix B: Participant Data

Participant	Years Teaching	Level Teaching	Gender	% of students with LD in classes
T1	14	Elementary	female	70%
T2	12	High School	female	85%
T3	16	Elementary	female	50%
T4	13	Middle School	female	75%
T5	14	High School	female	100%
T6	19	Elementary	female	100%
T7	12	High School	female	50%
T8	18	Elementary	female	30%
T9	12	Elementary	female	50%
T10	15	High School	female	35%
T11	8	High School	female	75%

Appendix C: Online Informed Consent

Online Informed Consent Form

TITLE OF STUDY: An instrumental Case Study: Growth Mindset Instructional Best Practices for Learning Disabled Students

PRINCIPAL INVESTIGATOR:

Brenda Cornell

Abilene Christian University School of Educational Leadership

PURPOSE OF STUDY

You are being asked to take part in a research study being conducted for a dissertation at Abilene Christian University. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please read the following information carefully. Please ask the researcher if there is anything that is not clear or if you need more information.

The purpose of this study is to describe the best practices of reading teachers who have a reputation for high student achievement and who adhere to a growth mindset in an effort to build a growth mindset culture with their students. Growth mindset is generally described as a person's understanding that their intelligence and ability to learn and grow are based only on the amount of effort they put forth to learn, that failure is a part of the learning process, and because of this they often possess a resilience that is vital for great accomplishments in all areas of life (Dweck, 2006). Many students in supplemental reading classes struggle with reading and overall academics due to a learning disability such as ADHD or dyslexia. Because of their lack of success in school, these students develop a fixed mindset or a belief that their intelligence and their ability to learn is limited. From this research, we hope to learn effective teaching strategies that will help this specific group of struggling students to develop more of a growth mindset of their intelligence and have improved achievement in school and in life.

STUDY PROCEDURES

You will be asked to answer open ended questions about the strategies you use to help students in supplemental reading classes with or without learning disabilities move from a fixed mindset of intelligence to more of a growth mindset of intelligence. Approximately 60 minutes of your time will be requested to complete a face-to-face or online interview. The interview will be recorded and later transcribed.

RISKS

There is always the risk, however slight, of breach of confidentiality. Also, you find some questions difficult to answer. You may decline to answer any or all questions and you may terminate your involvement at any time if you choose.

BENEFITS

The results of this study may have positive benefits for teachers and educational leaders who are interested in strengthening instructional practices that will help improve the mindset of students with learning disabilities and their future achievements.

CONFIDENTIALITY

Your interview and the responses you provide will be kept confidential. The researcher will make every effort to preserve your confidentiality including the following:

- Assigning code names/numbers for participants that will be used on all research notes and documents

- Keeping notes, interview transcriptions, and any other identifying participant information in a locked safe in the personal possession of the researcher.

Participant data will be kept confidential except in cases where the researcher is legally obligated to report specific incidents. These incidents include, but may not be limited to, incidents of abuse and suicide risk.

CONTACT INFORMATION

If you have questions at any time about this study, or you experience adverse effects as the result of participating in this study, you may contact the researcher whose contact information is provided on the first page. If you have questions regarding your rights as a research participant, or if problems arise which you do not feel you can discuss with the Primary Investigator, please contact Dr. Jennifer Butcher the Dissertation Chair at XXXXXXXX or Megan Roth, IRB Chair and Executive Director of Research, XXXXXXXXXX

VOLUNTARY PARTICIPATION

Your participation in this study is voluntary. It is up to you to decide whether to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

CONSENT

I have read, and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any

time, without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Write or type your name in the box below to indicate agreement to participate in this study.

Appendix D: Interview Protocol

Interview Protocol

Project: An instrumental Case Study: Growth Mindset Instructional Best Practices for Learning Disabled Students

Time of Interview:
Date:
Place:
Interviewer:
Interviewee:
Position of Interviewee:

This study is to analyze the best practices of excellent teachers to improve academic self-efficacy of students who struggle in reading and who are labeled with a learning disability. This research will collect the data from these interview questions of several participants and analyzed to identify the experience of great teachers in helping these students. You have been given and will be asked to sign the informed consent that details the research process. In the research analysis and reporting, only assigned numbers will be identified to represent the research participants. No names or personal information will be identified. This interview will take 30 – 40 minutes. (Read and sign consent form).
(Turn on the recorder and test it)

Questions:

a. How many years have you been teaching reading?

b. Please explain what you know about fixed and growth mindset, how they are developed, and any understanding of how to change a fixed mindset.

c. What do you notice about your reading students in relation to their mindsets?

d. How many students do you teach that have a learning disability label such as ADHD, Dyslexia, or others than affect their learning?

e. What do you notice about their self-efficacy to learn?

f. What student characteristics demonstrate their feelings about their ability to learn?

RQ1. What best practices do reading teachers implement to build a growth mindset within struggling students?

a. What strategies do you use in your instruction to help improve how students feel about their ability to learn?

b. What strategies do you use in your feedback to help promote a growth mindset?

c. What strategies do you us in your relationships with students to help promote a growth mindset?

d. What other strategies do you use to teach the growth mindset in your class?

RQ2. How do reading teachers with a growth mindset define a growth mindset culture?

a. What is your understanding concerning your student's ability to learn?

b. What is your understanding concerning your students' with learning disabilities ability to learn?

c. What does it mean to have a growth mindset culture in your classroom?

d. What does a growth mindset culture look like in a classroom?

RQ3. What have reading teachers perceived to be the benefits of cultivating a growth mindset within students?

a. What benefits do you perceive in developing a growth mindset culture in your c What strategies do you utilize to establish this culture?

b. What obstacles or challenges, if any, have you experienced with reading classes in your efforts to create a growth mindset culture?

RQ4. What are the challenges, if any, encountered by reading teachers when developing a growth mindset within struggling students?

a. What barriers, if any, have you experienced in your classroom that keeps students from moving into a more growth mindset?

b. What barriers, if any, have you experienced specifically with learning disabled students?

c. What strategies do you use to overcome the barriers?

d. What experiences have you had moving students from a fixed mindset to a growth mindset.

Appendix E: Qualitative Coding Matrix

RQ1: What best practices do reading teachers implement to build a growth mindset within struggling students?

Themes	Categories	Descriptions	Supporting Evidence
Environment of Safety and Trust	-social emotional engagement through cooperative learning -environment safe to take risks	The environment and relationship between the teacher and the student that creates an environment of trust and safety that promotes risk taking and successes.	I want to meet them in their learning with the Zone of Proximal Development and use group work to move them forward. They do a lot of peer reading and pair share to discuss their learning. I work to build a community in the room to where they are willing to take a risk, read out loud, answer questions in front of the class without feeling embarrassed. I have found that what can be really beneficial is for everyone to get to know each other and to feel like we're a team, working on things together, struggling together. We work in teams using technology like Quizlet where they are competing. The competition really gets them engaged. We work in teams where they all get answer stems to a question and the teams work together to discuss and help each other use their strategies to figure out which answer stem is correct. If they get it wrong, they have to start all over. The team that gets the set of questions right first wins. I announce all

			through it which team is ahead. They get into the competition of it especially the boys. It is vitally important to create a safe environment where they can take risks and are not alone in their struggle. You will see them say why are you reading in here but not in our other class. And they will say, because its safe here. It breaks those walls down.
	-trust developed by positive relationship with student	The connection that teachers make with students academically, socially, and emotionally that creates a trust between teacher and student.	I try to learn about them and tell them about my family. I try and build relationships with my students during passing period. Ask them about their weekend and get to know them as individuals. I ask questions to learn more about them, share pictures, and talk about our lives so they develop that feeling of trust. I share with my students my struggles with reading so they know I can help them too. Once I establish a connection with the student, they feel safe to take risks and they know I'm here to support them. Because of the relationship I built, I feel they feel safe to set goals.

			Knowing who my students are and their outside story (they have a lot in their lives), checking in with them every day, and making sure they feel loved and welcome; It creates a safe place from them. I try to get to know my students as best I can, share my life with them, and in turn, they share their life with me. I found this is very helpful in building trust needed to move their mindset. I know my students. I know them, their struggles, their likes and their goals for the future. That is really important in high school. It's important to know their homelife too. Some kids get pulled out of school to watch their siblings or have a close to full time job to help pay the bills. When they come into school tired and disengaged, I know they closed at work the night before and I can work with them. I spend a lot of time with my students; we eat lunch together. I also do an inventory of things I love. It helps me to construct high interest lessons. Some kids who have experience little to no success come in with a wall built. It is harder to develop a relationship with them but once you can break through that

			wall, that is when the growth begins to happen. It is building that relationship and maintaining that positive relationship. You have to. If you don't, you won't have the trust and that fear of risk, that fear of effort is going to run rampant in your classroom. I give all my students a survey at the beginning of the year about them and how they feel about themselves as a learner. I talk to them a lot and work hard to get to know even the really quiet ones and build them all up. I will often go back to the survey during the year to check to see if they are making progress in how them feel about themselves.
	- positivity important to move students forward. -A belief in student abilities -positive feedback -praise focused on achievement and effort	The positive words, focus, and feedback of the teacher has a profound effect on the progress of a struggling student.	It's a great strategy to restate the good things you saw them do and not saying "good job." More of the "I noticed how when you came to that word, and you didn't know it, you went back to the beginning of the sentence and you rewrote it to figure out what the word was." It is all about reinforcing the effort and the good habits. A student in my group didn't believe he was a good reader and I said, of course you can read! During group every time he read a word, we high fived and praised his effort. Afterward, we

			went to the principal and had him read for her. She gushed over his reading ability and it really boosted his confidence. It is important that you showcase that you believe in them and that they have the ability to learn. I always find something positive to focus on and something to work on in their writing. It is important from time to time before we start a harder level that we do work on or even a little below the level they are at so they will feel some success before we move on to experience struggle introducing a harder level of work. I take the student to their classroom teacher and praise them in front of them praising their effort and their accomplishments with specific skills. I explain how proud I am of the effort they are putting forth. I'm so excited you got that! That was super hard. I love the effort you put into getting that! That was a really tough reading passage and you went for it. I'm really proud at how you worked at reading that. At least once a week we do something that everyone is good at to build successes.

			I read stories about successful people who have Dyslexia and ADHD and other issues and how they worked hard to be successful. Feedback of anykind always needs to focus on the positive. It may be hard to find something positive they did, but you must point out something positive. They must know that my whole purpose for being is to help them be successful. I will be there guide and support them. I can't do it for them; they have to put in the effort to make the gains. I wouldn't be here if I didn't know you could do it. Not everything needs to be corrected. Sometimes we grade for effort. If they work hard, they try new things, they take risks, they get graded for the excellent effort. I fill up kids with all the good things they are doing and use that as the springboard to move onto something harder.
Create Successes	-no labels just goals -weekly skill goals -use assessment data to measure progress -conference with students weekly on growth -little skill goals that are attainable and measurable	Setting learning goals that help focus students on little goals and growth they can achieve working toward a bigger goal to develop feelings of success and hope.	I conference with students on their goals and their reflections. I want to talk to them about their progress, celebrate them, look at the data, and discuss what the next steps in their learning will be. Goal setting is key for the students to feel success. I had a student come as a junior bummed out that they

			failed the STAAR again. We sat down and conferenced over the data of how they did and compared it to last year. They saw the growth that they made from last time and they walked away saying, if I keep doing what I'm doing, I'll pass it next time. Ok let's do it. He then was ready to set his goals for that week. We map out their progress in their fluency so that they can see their growth. It is common to become less fluent when reading a harder text. They have to focus on the growth chart to keep motivated. Helping them understand when you can't do something and you want to, you have to have a goal, then you have to have a plan on how to get there. My job is to help them see every step as an accomplishment. It won't happen fast. It's a process that take effort.
	-daily journal writing about feelings, frustrations, struggles. -regular reflections on "Glow and Grow" -Promotes good cognitive strategies	Students reflect on their work, skills, achievements, struggles to set goals and to better understand their learning process to promote success experiences.	We do a lot of reflection. I ask them What do you think, how do you feel, what are you proud of, and what is your next step for growth. I find this is helpful for them to process their success and be cognizant of their thinking. We do a lot of reflection journaling. It is where I give them most their feedback highlighting something great they did always focusing on the growth ideas they share.

			After a test, especially the STAAR, we reflect on how we approached it, did we do our best, what did we do well, were could we do better next time. I actually like the students to give themselves feedback before I do. What is one thing you did that you liked? What did you feel that you struggled with and need to learn more about? Using the rubric grade your own work. They learn so much more this way then me writing on it stuff that they probably won't even read. If I conference with them, then we become partners of their growth. I can't tell that you are not yourself today. Is there something you want to chat about? Is it something you want to chat about with your journal? Often they will write about what's bugging them and feel better ready to work.
	-Model thinking to develop metacognition -Model writing -Model struggles and how to overcome -Model reading -Model reflection -Model peer dialogue	Teacher demonstrates what the students need to do, what effort they need, what struggles they might have to aid in understanding promoting success experiences for students.	I think when I ask them to do something, I model it and I provide the scaffolding for them to be able to do it. That makes them feel successful. Modeling the specific strategy and restating it when you see them do it affirms their effort and achievement. I model reading and thinking, and we have a

			conversation. Like if you feel your mind wondering, you can do this, and I model it for them. It's all about metacognition and what they are thinking about. I model struggling in writing. I write with them, I cross out, I erase, I start over. They need to know all of that is ok when you are writing.
Teacher brain science and mindsets.	-Mindfulness unit that introduces brain science and mindsets at the beginning of the year. -reinforce mindsets visually with posters and displays in class. -verbal reminders of mindset and how the brain works during activities or struggles. -vocabulary words taught specific to mindset and brain science -Growth mindset quotes	Directly teaching brain science or how the brain learns, as well as mindsets has been shown to have dramatic effects on moving students with a fixed mindset to a growth mindset.	I have growth and fixed mindset quotes that we write and reflect on. We did a unit on mindfulness in which we taught breathing strategies for stress, we talked a lot about their brain and how it develops, how it works, neuroplasticity. We taught vocabulary words on growth mindset and did gallery walks about famous people and how they were determined to learn and achieve something. I have posters of growth mindset in my room that we talk about all the time. What mindset to you think that you have right now? Or I love your growth mindset! I do a mindset inventory at the beginning of the year and we learn all about the different mindsets. We talk about changing our mindset. We do vocabulary words that are focused on the growth and fixed mindset. We also learn about our brain. We talk about our brains

			plasticity and what that means for learning. We also talk about how our brains operate differently because of the Dyslexia and ADHD. We stress that everyone's brains have special features and process differently. We talk about the different types of learners and how everyone learns but everyone learns their own way. They always seem to feel a little better about themselves after this. I choose stories with a main character who is struggling with something, and they either overcame and showed the process of getting through it. It's my sneaky way of teaching the mindset that if you want something, with effort you can make it happen.
	-I haven't got it yet -All I have to do is try -Mistakes are part of learning	When students demonstrate a fixed mindset verbally, teachers redirect to reinforce mindset instruction and help students move to a growth mindset.	I redirect them when I hear a negative, I can't statement. I will say that is a fixed mindset statement. How could we change that to a growth mindset? The student would say, "I can't do it, yet" I will often ask the kids to reflect on what they are saying to themselves. Is it a fixed or growth mindset? Why do you say those things about yourself? You know you are smart and you can do anything you put effort into. Its all about focusing on the growth. When they focus on the failures or

			challenges, it is up to me to redirect them to their growth. It is the celebration of the small steps along the way – the parts working to the whole. They come in and say I can't, and I say, you can't yet. Soon they start saying I can't yet but I will, you know as I teach them and they get more confident.
	-Mistakes are how we learn. -Famous failures video -Stories of successful people who struggle, fail, but are successful in the end.	Students are taught that failure is not a bad thing that defines them but rather, just a process in learning which is a key concept of growth mindset instruction.	I also start the year with a discussion about failure being normal and part of learning. I show this "famous failures" video on Youtube. They are always amazed by it. It really sets the tone – It's just part of learning its ok. One thing I work on a lot is their idea of failure. I keep reinforcing that it is part of learning. That is constantly being talked about. So when they fail at something and their head is low, I will look at them and they will say. I know now I have learned how not to fail like this again. I'm getting better. How do we learn students? They all say from our mistakes and our failures. We then look at what we need to do better for the next time. When you build that trust the students say, "I know miss is not going to let me fail. She said as long as I try I will never fail"

RQ2: How do reading teachers with a growth mindset define a growth mindset culture?

Themes	Categories	Descriptions	Supporting Evidence
Teachers' growth mindset toward students	-All students can learn but at different rates and different ways.	All students learn differently at different rates. No one size fits all for learning.	All kids can learn but they will all do it in their own way. When I was a new teacher, I thought everyone learned the same way. It didn't take long for me to realize that everyone learns but in different ways and at different speeds. They are always evolving as learners. All can learn but all don't learn the same way or same speed. Some need scaffolding, repetition, some learn visually while other learn kinesthetically They all can learn but different ways. You have to work with the data to figure out what works best for them. Of course, they all have the ability to learn they just all have different learning styles. Kids can learn like anyone else at their grade level. They can learn and do anything they set their minds to. They just need the tools to get there. Their effort is what makes the difference. Practice makes progress. They can do it with effort. Everyone is different but can learn equally. Just differently.

	-Student with LD can learn like any other student but needs different support, multimodality and repetition	Student with non-intellectually-based learning disabilities like ADHD and Dyslexia can learn as much as any other kiddo but they need support getting there.	LD kids need to see things different ways many different times often to learn particular skills. They have the capability; it just takes them a little bit longer than others. They have the capability to learn as everyone else they just need more hands-on accommodations which I call an extra sprinkling of me. I know they can learn just like everyone else, but it will take longer, and we just need to figure out their button. They all have the same abilities just as any other kid, but they have to find the way to compensate for their disabilities. They certainly can do that. They definitely an learn at the same grade level as their classmates maybe not as soon as their classmates but they can. Of course, they can learn like everyone else. I tell them they don't need to get hung up on the LD. It's no big deal. We all have something. They can make progress, but they will do it at a different rate. Some make progress faster than others. I know if I give them the tools, they can do it an learn anything.

			They can learn but they struggle sometimes. They just need the strategies to be successful and lots of support.
Community of learners with same understandings	-everyone is putting in effort -everyone is helping each other -Everyone is positive -Everyone will grow with effort. -Everyone is excited about learning -Everyone feels safe to take risks -	What it means to the teacher to have a growth mindset culture in a class.	We are all learners. We are learning from each other, we all have abilities, and we all have areas to grow in. A growth mindset culture is when everyone understands that I'm going to grow no matter what and is not worried about what everyone else is doing. It is positivity and word choice. The language you use in the class, how you deal with setbacks. We don't say failures; we say setbacks. We don't say weaknesses; we say areas of growth. It's when everyone understands the power of yet: I don't know it yet but I'm going to get there. Students working to figure out what works for them because they are excited about learning. It is a class that is really positive about learning and their potential and the potential of others in the class. Students that are excited about school and about learning. They are not afraid to fail. A community of learners who feel safe, take risks, and not to be afraid. Kids encouraging each other and not only the teacher. The kids pulling

			each other along in a safe classroom. It is an engaging safe environment where they feel comfortable to participate and not scared to take risks. Students who feel confident in what they are learning. Independence and confidence in learning – a belief system is in place.
Students' self-efficacy promotes effort	-Students can tell you the areas they are good at and where they need to work. -students are encouraging each other through struggles -Social/emotional support strong through teamwork and cooperative learning -A safe environment where student are not afraid to fail. -Students experience successes through hard work and effort. -Goal setting and self-reflection -Students are willing to work through struggles because they know they can achieve with effort.	The characteristics of a classroom with a growth mindset culture.	If you ask a kiddo in the class, they will know how they are making progress in their learning. They will be able to name it. They will be having conversations about their strengths and weaknesses in an effort to grow. You would see social contracts, you would see teamwork, you would see peers helping each other, you would see encouragement. You would see independent learners and you would see equity in the classroom. Lots of student success and hard work. Students helping students, and a safe environment to fail and learn and its ok. You would see kids excited about learning, not afraid to fail. They are a team working strategies to find success. Positive mindset quotes for daily journals, they are self-reflecting learners, always wanting to do more or do better because they know they can with

			work. They all are very engaged and putting in effort lots of effort. You would walk in to see kids believing in their abilities. They might say I couldn't do this before but now I can. They push through struggle. People who work to overcome and achieve believing they can do it with effort. An environment that is safe community of learners. Independent learners-they don't wait for me. Kids will be trying even if they don't want to when they know it is hard. A willingness to push through it and put the best foot forward because they feel they are going to make growth. Any task that is put before them, they self-reflect and consider what they need to do to get there. And they set goals to make it happen. They have positive self-talk. Students who are confident in their abilities who are positive about their struggles and willing to work at it.

RQ3: What have reading teachers perceived to be the benefits of cultivating a growth mindset with students?

Themes	Categories	Descriptions	Supporting Evidence
Lifelong benefits	-school successes	The benefits of establishing a growth mindset culture.	The students own their learning. They own their successes and their

	-Student take ownership of their learning. -Develops independent risk takers who aren't afraid to fail -Future success in college, career, and life.		failures but keep pushing and striving. The risk taking is probably the greatest benefit and the getting rid of the fear of failure. A culture of positive support and continued successes for students. The benefit is definitely more independent learning and thinkers. They will have the freedom to try new things and not be afraid. This mindset will benefit them in school, in careers, college and the long run far past the classroom. The kids believe in their abilities and their futures. They work to make the best at whatever they do. Life will throw them a lot of curve balls. If they have this mindset, they will be able to figure it out. It's a long-term goal: for the students to be a productive part of society. They don't settle or give up. The kids with a growth mindset are going to be more desirable for jobs. Kids who struggle, if they get it will have more to offer than those who don't. Overall a real positive effect on their learning and an expectation that they are going to have

			failures, but they can get through them. Growth mindset will help them with life-long lessons. They are successful in school and other things they work towards.

RQ4: What are the challenges, if any, encountered by reading teachers when developing a growth mindset within struggling students?

Themes	Categories	Descriptions	Supporting Evidence
Reinforcements to the fixed mindset	-Low self-efficacy -habitual behavior -learned helplessness -Closed off refusing to drop the walls -comparing themselves to others. -fear motivated behavior	The feelings and emotions that struggling students that get in the way of developing a growth mindset.	When the failures outweigh the successes. Once they start defining themselves by their failures, it can be hard to break that habit. They are doing great in class making great progress and growth. Then the STAAR test comes around and they fail, and all the old emotions return that the test defines your intelligence and so on. The biggest obstacle are those naysayers at home- the parents. I had a student tell me that their parents tell them they are stupid and they just need to get through high school after that they just need to get a job. They have more powerful influence than I have in 45 minutes a day. Peers can be an obstacle as they treat them differently. The mindset of teachers and the language they use can transfer to the student, like reading labels, reading remediation

			group labels, and so on. Or even trying to be supportive like giving them accommodations in class in a way that makes them feel different from the other students. Parents can be a real barrier telling the kids they are not enough, they are lazy, and never tell them they are proud of them. The parent has a fixed mindset about them. That is hard to reverse. That STAAR test and reading levels can be set backs and in their mind label their abilities. Reading level labels can cause a kiddo to define themselves or their abilities, "I'm just a B level, I can't do that. It will be too hard for me."
Labels	-LD labels and the stigmas they create -Family negative empathy and enabling to not try -Parents who refuse to test their child for an LD	Students will LD are often influenced to have a fixed mindset due to the influences of those around them.	The label of LD is a real obstacle in a lot of ways. They families compare them to themselves, "I had dyslexia and was terrible at school. You are just like me so just get through it and do your best." Parents set low standards for them. Their parents and how involved they are. Often they use the label of LD to enable them to not put in the effort. The labels of either reading level or the LD label can really stymie their growth. Parents giving the students excuses not to

			achieve like, “you are dyslexic you won’t be able to read well, or you will always struggle because I did.” They are trying to be supportive, but it is not helpful to the student. They don’t realize that Parents do not want to seek out testing or help their child by getting them ADHD meds.
Fixed Mindset and Learned helplessness	-Apathy from giving up -Negative coping behaviors such as avoidance or acting out -learned helplessness	Students with a LD develop many emotional coping mechanisms to deal with their lack of success and negative feelings that come from it.	School is a torturous place for them where they never feel good about themselves. They shut down and don’t want to be here. It’s hard to break through that in only 45 min a day. It is the apathy. When they get frustrated because we haven’t figured out what works for them yet. When failures outweigh successes. They think they are stupid. In their mind, it labels their intelligence. Students who have developed behavioral habits of avoidance behavior and acting out to draw attention away from their struggles. Their biggest barriers come from their belief in themselves, constant comparisons, and feeling that failure or struggle defines intelligence. Their biggest obstacle is the learned helplessness over the years. They use the disability as a crutch.

			Years of low self-efficacy in their learning ability. Behavior problems that are a reflection of how they feel about themselves that give in the way of them progressing. Avoidance tactics and reinforcement of the fixed mindset from home or from another teacher. They compare themselves to other students they want to be like everyone else. In middle school a barrier is their peers. They don't want to look stupid, so they avoid effort for fear of sticking out. Lots of avoidance behavior like picking up their phones when they are doing something hard.

Appendix F: Lesson Planning Template

Teacher Breakout EDU Planning Template

TEKS Addressed:

- Recognize characteristics and structures of informational text, including the central idea with supporting evidence.
- Monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.

Materials needed: Link general item titles to folder materials!

- 1 Winter Holiday book per student
- 1 Answer sheet for each student with job roles included
- Printed clues and QR codes (see instructions below)
- Box with lock for each student group
- "We Broke Out!" signs and "Congratulations/ Finished instructions" (put in Breakout boxes for each group)
- Reflection cards (put inside breakout box for each group)
- Hint cards (provided at the beginning of activity)
- Group member role cards for each group- cut out
- **Other objects needed specific to your clues**

Topic *(ex: "Great Compromise)*	**Question/Answer** *(include exact format of text if using "data validation" option on Google Forms)*	**Location of Next Clue** *(include links/QR codes here for your convenience)*
No Lock Kwanzaa	**Initial Clue** Each team will begin the BreakoutEDU activity with an introduction sheet. **Question 1**: What are the colors of Kwanzaa? **Answer 1**: After finding the answer to the question, students will write on their answer document: *black , red, and green* and the page number (*6*) to receive the 1st box.	Students receive the small box at this time and work on next question to breakout of the small box.

3 Digit Small Box	**Question 2:** Phonics Students will locate and highlight specific word types in their booklets and will count syllables. Page 9-11 -ing words 9) flickering, retelling 10) dancing Page 12 -sh and -ch words Changes, should, changes, should, should, should, chewing Page 13 identify & add syllables **Outside** the **window**, the bells **keep** on ringing. Code 3 7 5	Clue inside small box Strips of poem lines (pages 14-15)
4 Digit	**Question 3**: Sequencing Students will sort through 8 poem strips to determine which ones are correct/incorrect. Put correct ones in order. Answer on back of strips of paper. 1) Paint the front door happy (correct 1-stanza 1, pg 14)-9 2) Write poems on small red papers (correct 2-stanza 2, pg 14)-2 3) Fifteen days to share (correct 3-stanza 5, pg 15)-7 4) Will sparkle as we celebrate (correct 4-stanza 6, pg 15)-9 X) Paint the back door happy (incorrect 1-stanza 1, pg 14)-8 X) Write poems on little pink hearts (incorrect 2-stanza 2, pg 14)-3	Lock on large box Strips of poem lines (pages 14-15)

	X) Fifteen days of rich and joyful wishes (incorrect 3-stanza 5, pg 15)-4 X) We will light all the lanterns with friends (incorrect-made up-pg 15)-1 **Answer 3**: 9279 (numbers on back of strips of paper)	
Letter Lock	**Question 4:** Comprehension & context clues 1)Which holiday is celebrated February 29th? *Leap Day* 2)Which holiday is celebrates by with candy, oranges, and blossoms? *Chinese New Year* 3)Which holiday celebrates with a menorah? *Hannukah* 4)Read the line from Groundhog Day: "There's a groundhog in a hole with a mighty **vital** goal. What is a synonym for the word **vital**? important 5) Read the following lines from Hannukah: "We'll both spin the dreidel. But where will it stop?" What is a dreidel? *Spinning Top* Answer: pants (we could change this so it doesn't spell anything?)	Lock on large box
Key	**Question 5:** Fill in the blanks & growth mindset. Valentine's Day-Fill in the blanks. Work together Some people give **roses** Some people **send cards** Some people **write names** Creating life and school goals is an ongoing process. Think of something you can work on for one month. What is your February growth mindset goal? Answer this question in your own words.	Go to teacher for key to final lock

Appendix G: Growth Mindset Vocabulary Lesson

Neuroplasticity- the brain's ability to _____ or _____ connections between neurons.

Neurons- a special kind of _____ that can _____ by sending signals.

Malleable- able to _____ and _____ based on new learning and experiences.

Growth Mindset- the _____ that the brain can _____ and _____.

You can become more _____ by taking on _____.

Fixed Mindset- the _____ that intelligence _____ be changed.

Appendix H: Dweck Growth Mindset Instrument

1. If I have to work hard at something, it means that I'm not smart.
2. I like to try things that are hard.
3. When I make a mistake, I get embarrassed.
4. I like to be told I'm smart.
5. I usually quit when something gets difficult or frustrating.
6. I don't mind making mistakes. They help me learn.
7. There are some things I'll never be good at.
8. Anyone can learn something if they work hard at it.
9. People are born stupid, average, or smart and can't change it.
10. Doing my best makes me proud, even if it's not perfect.

How many of the odd-numbered statements did you think were true? _____

How many of the even- numbered statements did you think were true? ____

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