

The Growth Mindset Classroom: Where Classroom is a Verb

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Abstract

Educational reform is ongoing, yet although society is now high-tech and innovative, the educational model continues to lag in more of the industrialized society paradigm it was developed for many years ago. The achievement gap continues to widen, leaving increasingly more kids feeling unsuccessful in meeting the standards required of all students, regardless of their current standing and opportunities in society. Carol Dweck, a Stanford professor and psychologist, introduced the growth mindset in 2006 after 30 plus years of research with students on motivation, failure, and the brain. This mindset, or belief, is the way one views him or herself in the world, that guides him or her in all he or she does. The growth mindset focuses on intelligence as it relates to education, but one's mindset affects how they function in sports, their career and in life. Today, after much research, it is known that innate intelligence is responsible for only 25 percent of one's outcomes, 75 percent comes directly from non-cognitive indicators one can control such as effort, grit, consistency, and responsibility. Teaching this mindset to students in an intervention that includes teaching them about the control they have over their own brain growth and learning, empowers students. They realize that with effort, strategies, and help from others, they are capable of learning anything. Individuals all have a different starting place in life, but each person's potential is limitless, and everyone has a great deal more control over what they choose to do with their lives than was once thought. As my thesis project, I have created a website, The Growth Mindset Classroom, to guide teachers in creating their own growth mindset focused classrooms.

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Chapter I: Introduction

Life is hard! Yet, some individuals succeed no matter what they face, while others struggle, often eventually giving up. What is the difference between those who succeed in school, and in life, and those who do not? Why do some people push through and keep trying in the face of adversity and others quickly give up, feeling they are incapable of success? I am a mother of three kids, all with Attention Deficit Disorder; a social worker, who has counseled kids of all ages with a vast range of diagnoses; and now, after 14 years as a stay-at home mom, a (substitute) teacher, and that “why” is my biggest question. I am passionate about learning, easily described as a lifelong learner by anyone who knows me. While growing up, my mom used to have to make me stay home when I was sick; I loved school and that has never changed. However, I often felt defeated, although many teachers, counselors, and administrators *praised my intelligence*, telling me *how smart I was*. Throughout my childhood, I had a dream of being a doctor. After being “defeated” by higher math and chemistry in high school, I “reduced” my dream to becoming a nurse.

Fast forward to my first day of college chemistry; I perceived that everyone else in the class understood what the professor was saying, and I was the only “clueless” student. So, after I left class, I headed straight to the Registrar’s Office, and dropped it. It was time to find a new major because clearly, *I could not learn Chemistry*. I cringe when I think about that day! Why did I give up on my already “reduced” lifelong dream so quickly? What could I have done differently? Unfortunately, I didn’t figure that out for years to come. I spent my college career on a roller coaster with grades all over the board, dropping classes here and there that *I could not do well in, no matter how hard I tried*...yet in hindsight, I didn’t really try very hard, or effectively, at all. I also always felt something was “off,” but did not know what. Still, I fought

my way through. After several changes in my major, I graduated with a 2.9 G.P.A., questions about my future, and a great deal of debt. At the time, I thought I may eventually go to law school, quite an undertaking for a girl who was so easily defeated by challenges. For the next three years life distracted me. I went to cosmetology school after marrying my hairdresser/boyfriend. I did well and was the youngest member to be accepted onto the Rusk Design Team, but it was not “my calling” and my new husband was abusive. After a year, I left my husband, and not long after, my short career as a hairdresser, again in pursuit of “my calling.”

After much reflection, I decided to pursue my passion for helping others and fighting for justice, I decided to earn a Master’s Degree in Social Work. In my typical defeatist style, I decided to take classes, prove myself, and then apply. That quickly changed after my mom was diagnosed with lung cancer and I rushed home to take care of her as she beat cancer for the first of three times. Over the next two years, I somehow gained the courage to officially apply to graduate school and enter in the traditional manner. I applied to two colleges, was accepted into one and provisionally accepted into the other. I went to Barry University, where I had been provisionally accepted, due to their clinical focus. All I had to do was get a 3.0 the first semester and I was in. My new fighting spirit worked well! I persevered and got a 4.0 that semester and every semester thereafter. This was all done while I waitressed four to five nights a week, completed two internships, and held the position of Vice President of my graduating class. I still remember a fellow classmate who did not know me very well, telling me and our class, she saw “perseverance” when she looked at me. WOW, a new way from which to view myself. Yet, I still felt something was “off,” but didn’t know quite what. I explained my life and my inability to feel focused to the school’s counseling office, yet oddly no one mentioned I could have

Attention Deficient Disorder, and so I persisted in the only way I had come to know how. After years of struggling to make my way in life, I had learned how to compensate and even how to succeed.

As I began my career as a Social Worker (Child and Family Therapist), it became clear to me I had all the signs of ADHD. Finally, I had an explanation for the reason I felt “off” throughout my life, which had led, at least in part, to my many struggles and defeats. Yet, through it all, I ended up succeeding. I never really gave up but did allow myself to be derailed and defeated over and over, lowering my standards for myself too many times before *finally* believing in myself. Despite all my challenges, my life motto for as long as I can remember, has been, “grow, learn, and change,” and that I did. How did this girl who grew up in the negative environment of an alcoholic home with two immigrant parents, manage to be the first person in her family of origin (out of five kids) to complete college AND two graduate degrees with a 4.0 in each? My cumulative challenging past made me driven and passionate about helping my clients succeed and get past the dysfunctional environments they were trapped in and being shaped by. It was a hard “fix” though, since most parents seemed to want you to fix their kids; they ignored the family system that had often created, or at least perpetuated, the problem their child was having, and, many times these problems had been present for generations.

My new career brought me into the Whitesboro School District, working with kids who had been referred to our agency because they needed more intervention than the school social worker had time to take on. I of course, loved being in the schools and clearly saw the impact a teacher could make being with the kids all day, every day. After I gave birth to my first son two years into my Social Work career, I decided to pursue a career in teaching. Not only did I love the school environment and the positive impact teachers could have on so many kids at once, but

the schedule would allow me to be the best mom I could be. I even took on the challenge of two semesters of both math and a foreign language to be able to get that next degree, something that had paralyzed the old me, and I did very well! How had I ended up doing so well after such a rough start? What exactly had changed, evolved, or been uncovered in me? I continued to be led by my motto of, “grow, learn, and change” and I now believed in myself; I refused to let anything stand in the way of my goals. I worked hard and as I said, ended up completing my coursework for my Master’s in Education with a 4.0.

As a mom, I want my kids to succeed and believe in themselves from the beginning, not spend years struggling as I had, desperately trying to uncover the answers for myself. As a teacher, I want my students to find value, enjoyment, and success in learning. How can I ensure the many students who sit in my classroom have the best possible chance in my class, school, and eventually in life? As I began researching current trends in education today, for both future job interviews and for my thesis, I discovered Carol Dweck and her research on the growth mindset. It was everything I believed in and fit perfectly with my own lifelong motto and mindset, and so, my research began with reading her book, *Mindset: The New Psychology of Success*.

Trends in education have been changing for years, with anyone involved in education or making policies for education, looking to improve performance. Many have come and gone, but the growth mindset has been alive and well for many decades without the official name it has today. The growth mindset is, “the belief that your basic qualities are things you can cultivate through your efforts, your strategies, and help from others.” That despite our differences, “everyone can change and grow through application and experience. The passion for stretching yourself and sticking to it, even (or especially) when it’s not going well, is the hallmark of the

growth mindset” (Dweck, 2006, p. 30). Those with the fixed mindset believe they are born and stuck with a set of strengths and weaknesses. The students who say, “I’m just not good at math,” have a fixed mindset that is standing in their way of success, of overcoming the challenges that are keeping them from understanding the content that is defeating them.

A very similar and related concept that fits well and is even intertwined with growth mindset is “grit,” a concept explored by Angela Duckworth in her book, *GRIT: The Power of Passion and Perseverance*. In this book Duckworth talks about growth mindset just as Dweck talks about grit in her book. Duckworth (2016) defines grit as a four-step process, developed over time, a process of: interest, practice, purpose, and eventually hope, attained with passion and perseverance. Duckworth’s book was the second reading in my research process.

Since beginning my thesis this semester, I have been taking notes on every classroom in which I have substituted. While the lessons and assignments may vary, assumptions can be made about the teachers’ mindsets and classroom culture based on the classroom environment, since that is one of the important parts of creating a growth mindset classroom. One item the research discusses over and over is the evidence of a drop in the growth mindset exhibited by teachers as students get older, making the transition from elementary to middle school, and then middle school to high school (Barnes and Fives, 2016; Hanson, Ruff, & Bangert, 2016; Snipes, 2017) (See the graph in Appendix A). Learners need the growth mindset attitude more than ever as they transition and get older, because the work is getting tougher and they are developing a greater self-awareness.

I substitute mainly at the secondary level and do not see much evidence of a growth mindset as the attitude in the numerous classrooms I have been in, based mainly on their appearance, casual conversations with other teachers, and the statements students have made to

me. From my observations, they are not the stimulating or motivating environments that make up a growth mindset classroom. The two classrooms I found most stimulating were a French classroom and a Spanish classroom. These two teachers both have classrooms that inspire curiosity and excitement for the content to be learned. Both had things labeled in their respective languages and lots of items and posters representing the countries whose languages they were teaching. What they both lacked were motivational posters, sayings that make the students think about learning and believe in themselves. The various other classrooms have all been primarily barren and uninteresting in appearance, almost nothing hanging in these classrooms that represents what the kids are and will be learning, and very little to shift their perspective or motivation level. I had the opportunity to substitute teach one day at the one district elementary school with a growth mindset program and observed quite a contrast in the classroom décor (See the pictures in Appendix B).

Recently, I spoke with a local middle school principal about this research area, to which he said, “There is a 6th grade teacher who read a book on that and has some stuff hanging outside of her room.” This made me believe that the growth mindset is not being taught and encouraged in that middle school and made me wonder what the rest of the district is doing. Unfortunately, after searching growth mindset programs in the district, I came upon just one elementary school with an actual program in our very large district. Having recognized such a difference between schools in the northern and southern regions of the United States, I decided to speak with my kids’ elementary school (K-6) principal in Pennsylvania about my thesis topic and see what his response was. He said growth mindset is often spoken of in his school and in the district; I was not surprised by his response. The possibilities of what the growth mindset could bring to areas

where it does not exist, based on what it is doing to accelerate schools in the northeast, is encouraging.

The Purpose of the Research

The purpose of this research was to delve into the pertinent research that exists to answer the question I have been asking for a long time: why some people succeed and others fail when faced with the adversities that affect everyone in life, as viewed through the lens of the growth mindset. In understanding this, I can ensure my classroom is a “verb,” full of stimulating action and effective effort toward my students’ learning, growing, and subsequently succeeding in my class and in life. I feel my degrees in Social Work and Education tie in well with my growth mindset goals as a researcher and as a successful teacher. I also want to ensure that other educators have an easy to use resource to create a stimulating, growth mindset environment for their students to learn. In study after study, a change in mindset is shown repeatedly to bring low achieving students up and help to narrow the achievement gap (Dweck, 2006). I compiled all the ideas I learned about creating a growth mindset classroom in my vast research, and then created a website to guide teachers on, “how to build a growth mindset classroom.” My ultimate goal is that this project will lead to a presentation I can offer to schools on professional development days, to help transform education in a positive direction for all learners and educators. I want to be an agent of change in creating a growth mindset in many more classrooms than my own, I want to help ensure this positive mindset and approach to learning is alive and well throughout as many schools as possible. If the administrators and teachers do not buy in, the kids can not benefit from this amazing view of learners and learning. I also want to ensure that this lack of exposure to and knowledge about the growth mindset is not the reason it lacks presence in schools. Briceno, CEO of Mindset Works, has found that one third of teachers have heard of the

terms fixed and growth mindset, but do not know exactly what they are (Sparks, 2013, p. 3). I want to change that! Today, teachers are overwhelmed with meeting standards, standardized testing, and individual styles of learning that exist in the vast mix of today's inclusive classrooms. Having an easily accessible, all-inclusive site to teach them what a growth mindset is, how to create that type of classroom, and a way to access other resources, in addition to the evidence of its success with all students, will inspire many educators will jump on board.

Research Questions

This research project addressed the following research questions in answering my ultimate question of how to help all students succeed in the face of adversity:

- 1) What is a growth mindset, and a fixed mindset, as it relates to education?
- 2) How does a classroom teacher create a growth mindset classroom?

The Significance of the Research

This research created a project that provides educators with a central resource/website to assess and ensure their own growth mindset, to help them create their own growth mindset classroom, and to potentially encourage and influence a growth mindset in their home school, from the vast amount of research and ideas that exist. With my website, *TheGrowthMindsetClassroom.com*, educators and administrators will understand what a growth mindset classroom is; how it benefits students, educators, and administrators alike; and, will be able to access links to many amazing resources to create a growth mindset attitude in themselves, their students, their classrooms, and in their schools. Analysis of current literature gives clear ideas of what such an attitude is, why it is beneficial in our innovative world today, and how to implement this in one's own classroom. However, this would involve much time and

work/research by individuals to compile and begin using this information, if not for my website, which provides them with much of the needed research and resources all in one place. I am trying to simplify the process for them, so it does not feel like one more overwhelming task. In the Union County School District, just south of Charlotte, North Carolina, where I substitute teach and where my kids attend school, there is little evidence of growth mindset. There is a difference in the teaching and classrooms at these schools, although well rated, compared to the school districts I have had experience with for many years in the northeast region of our country. I am not sure why; I know the pay and financial resources are much less here and that is most likely a factor. What I have learned from my research, is that there is a way to bring the passion into these classrooms for very little money, just simply having a desire and putting in effort. Igniting this passion would help narrow the achievement gap and boost the interest and excitement in classrooms, so that students want to learn and teachers are excited to share their subject matter. My goal is to start in my home district and then spread out, helping to transform education in the southeast, through teaching about the growth mindset and providing an easy to follow process on my website, that educators and schools can build on overtime.

Chapter II: Review of the Literature

After decades of trends that have come and gone in an effort to improve performance in schools, it is obvious most are still dissatisfied with what schools provide as they prepare students for real life in the 21st Century. Life has changed immensely since the current and longstanding paradigm of schools was created for an industrialized society. Today, we live in a high tech, evolving world that connects people like never before. Society needs schools to shape and prepare students for this “new world” for so many reasons, from individual success to global competitiveness.

The following review examines the research literature on the growth mindset and how it can be used to create the change so desperately being sought after within our schools. The first section defines the growth mindset and how one’s beliefs about their abilities can shape their future. If students believe they can continually learn and grow, through mindful, meaningful effort and learning new strategies, and have teachers who believe the same, this has proven to be a strong predictor of their future success. The next section defines the fixed mindset, or one’s belief that people are born and “stuck” with a certain amount of intelligence throughout their lifetime. The third section depicts the current paradigm that exists in education and how it has unsuccessfully attempted to evolve since it was created for an industrialized society so many years ago. The fourth section explores the many facets needed to “create a growth mindset classroom,” all of which play a critical role: the teacher who is incredibly influential over so many students every day; the intervention that teaches students about their brain and empowers them; the climate and décor of the physical classroom that students spend their days in; the valued assets, of which effort is key toward learning; the praise and messages that are sent to students from every word teachers speak (or write) to them; the variety of strategies that is needed to

properly teach all students and keep them engaged; assessment which is used as a gauge of understanding and a guide to alter lesson plans to ensure all students are challenged and learning; and feedback that provides rich opportunities to learn from mistakes. The fifth section illustrates strategies to use in the four content areas of Language Arts, Social Studies, Science, and Math. The final section explores the impacts of a growth mindset on students and on society after 30 plus years of research on its effectiveness.

Growth Mindset defined

Carol Dweck, a Stanford Psychologist and Professor, is the individual who coined the term growth mindset in her 2006 book, *Mindset: The New Psychology of Success* (See the overview diagram in Appendix C). As a young researcher she was obsessed with how people cope with failure. She began studying this by watching students struggle with hard problems and from there her research took off. According to Dweck (2006), growth mindset is a belief or way of thinking, “the view you adopt for yourself which profoundly affects the way you lead your life” (p. 6). This view can determine the rest of your life, what you become and accomplish. It is a simple, yet transformational belief. In this mindset the “hand you’re dealt is a starting place” (p. 7). You are born with basic qualities and then you can choose to develop them through your efforts, perseverance, learning different strategies, and seeking help from others. Though everyone has different strengths and weaknesses, everyone can change and grow; intelligence is malleable, meaning it can be developed (Aditomo, 2015; Blazer, 2011; Dweck, 2006). Not everyone will achieve what Einstein did, but everyone’s true potential is limitless from their personal starting place. This is the mindset that allows people to thrive during some of the most challenging times in their lives (Dweck, 2006, p. 7). The belief that valuable qualities can be developed through one’s own effort, motivates individuals to persevere, to continue to learn

despite challenges, and creates a passion for learning as one is witness to one's own growth. The individual with a growth mindset will not run from setbacks but will strive to overcome them.

The idea that intelligence is malleable, that it can be developed, and it can become stronger, like a muscle, empowers students (Dweck, 2006). Studies repeatedly have proven that when students learn this as part of a necessary initial intervention, even a short one, to teach them the growth mindset, they feel they are in control of their learning (Blazer, 2011). These interventions teach students about the brain. They learn that through effort and practice, the connections in their brains get stronger and stronger, and that is why, what was once hard becomes easier and easier with continued practice (You can grow your intelligence, 2016).

Adversity is a part of everyday life for everyone. Individuals with a growth mindset embrace challenges as a necessary path to learning. If individuals do not stretch themselves past their comfort zone, they become complacent and cease to really learn and grow. To a student with the growth mindset, mastering tasks is key. They want to learn, not simply look smart, so they recognize setbacks as a natural part of learning. They exert effort and persevere when they encounter setbacks, and they willingly take on challenges. It is through overcoming challenges that students develop the necessary life skill of resiliency, or recovering readily from setbacks, which will allow them to continue to overcome future challenges.

Feedback is another avenue of learning and improving for those with the growth mindset. It requires praise that is focused on the effort one exerts rather than the abilities one is seen as having at any given time. This feedback is given for and about the process of learning. It requires educators to identify those who have clearly put in effort, sought to learn and use a variety of strategies, and reached out for help as needed to succeed, those who have persevered or shown grit. The result of this process is growth that students control. Questioning is vital; it

creates deeper level thinking and enhances learning. It is the questioning that causes learning to become personally meaningful, and when it is meaningful it is understood, not just information that is memorized (Wiersema, Licklider, Thompson, Hendrich, & Hayes, 2015).

The classroom must be a safe place to change one's beliefs about learning, but also to take risks and make mistakes as a part of learning (Wiersema et al., 2015). Mistakes, including those made by teachers, must be seen as rich learning opportunities. If individuals do not feel safe in admitting their mistakes, they will not seek to learn and grow from them, which is crucial to learning (Blazer, 2011). Students with the growth mindset find inspiration in another's success; it is something to learn from and model, not something to be jealous of. Motivation increases with one's success and growth; it is this growth that is to be celebrated within one's class and school.

Students with the growth mindset understand that effort is not just time spent studying, but a "work of the mind" (Wiersema et al., 2015, p. 2). Effort must be mindful and meaningful, an intentional process using one's attention to think about new information in different ways. Students must seek ways to really understand the material through new and varied strategies, questioning and reflection, and help from others. This help can come from the teacher, or from a student who understands the material and is thus able to teach it to others, thereby reinforcing their own learning. Students must perceive effort and strategies as a natural way to learn; they must see the value in and pursue learning. Effort is the key to learning; it must be viewed as how one learns and improves in school and in life (Duckworth, 2016; Esparza, Shumow, & Schmidt, 2014). Dweck (2007) points out that "it is virtually impossible to do anything worthwhile without sustained effort" (p. 8). Students are more motivated and empowered if they attribute

their success or failure to their own efforts (Aditomo, 2015). Wilson and Conyers (2016) refer to this as, “driving one’s brain” (p. 12).

Dweck (2007) says the cardinal rule of the growth mindset is to learn. Three additional rules she lists are taking on challenges, which stretches one’s abilities; working hard, the harder one works at something, the better one will become; and confronting and improving weaknesses. Miller (2013) sums up the growth mindset as working to improve by embracing challenges, being persistent when faced with setbacks, learning from constructive feedback, seeing effort as one’s road to mastery, understanding “that mistakes and confusion will litter the path, and accepting failure as a normal part of life (p. 52). Those with the growth mindset know that intelligence is developed over time; challenges are opportunities to learn and grow; and effort must be valued, that even geniuses and star athletes must work hard. When faced with obstacles, one must remain engaged, try new strategies, and utilize their repertoire of resources toward learning (Dweck, 2010). Miller (2013) reminds us that learning is a transformation and will involve some discomfort one must push through.

Fixed Mindset Defined

If one surveyed individuals before teaching them about the growth mindset, they would find most people have qualities of both a growth and fixed mindset, which will change under different circumstances. A soccer player may have a growth mindset on the field, but a fixed mindset in math class; it varies by domain and falls on a continuum between the two mindsets (Blazer, 2011; Lee, 2009).

Fixed mindset is the opposite of growth mindset. Those with this view believe that they were born with certain abilities and fixed intelligence and that is what they are stuck with in life.

Because they do not see their intelligence as malleable and something they can control, they desire to appear smart and so behave in certain ways. They avoid challenges and instead work harder on things they know they can do; students with the fixed mindset look smart by succeeding at easy tasks. This desire to preserve one's image of intelligence and ability is called performance goal orientation and is the opposite of mastery goal orientation, or learning, which occurs when one has a growth mindset (Esparza et al, 2014).

Those with the fixed mindset get defensive or give up easily. Failure is a sign of one's lack of ability and causes a decline in motivation; consequently, they often ignore negative feedback. Setbacks result in behaviors such as becoming discouraged, quitting, blaming others, lying about their scores, and even cheating. Challenges very well may mean failing, thus calling their intelligence into question. They feel threatened by the success of others.

Individuals with a fixed mindset see effort as useless, as a sign of low ability. Those with the fixed mindset attribute success and failure to factors outside of themselves, such as their social structure or luck. If intelligence is out of one's control, effort seems pointless (Aditomo, 2015; The National Center on Scaling Up Effective Schools, 2012). For those who feel like they have only a certain amount of intelligence, it is most important to look smart. If given opportunities to learn, yet risk performing poorly or admit deficiencies, fixed mindset students will withdraw from those opportunities. They believe if one is intelligent or has ability, then everything will come naturally; thus, hard work makes them feel dumb (Dweck, 2010).

The fixed mindset comes with a set of rules, as well. The cardinal rule is, look smart at all costs. Additionally, do not make mistakes; a poor grade means you lack ability and just are not good at that subject. Do not work hard because that signals low intelligence. The reason even some gifted students stop working when things become difficult is because they are trying

to “save face.” They see themselves as having two choices: work hard and feel dumb or do not work hard and act smart. Do not try to repair mistakes when you make them. Fixed mindset students do not have a plan to recover from setbacks, instead, setbacks paralyze them. They see their lack of ability as permanent. They are not interested in the right answer, just that they got it. These rules stand in the way of learning or intellectual growth, since they choose the appearance of looking smart over learning (Moussavi-Bock, 2013).

Paradigm Shift, Then and Now

The educational system we have today was developed both in and for an industrialized society. This old paradigm was pre-technology and was developed to “create cookie-cutter” students. It evolved to serve an industrialized society. Schools were designed to prepare students, or future employees, for existing jobs and social order, not to be innovators in the tech world; in other words, schools were employee-driven (Zhao, 2016). This old paradigm assumed the same abilities, as well as the desire to acquire the same skills and knowledge. It further assumed things would not change much going forward. It disregarded individual and group differences in potential, desires, access to resources, and cultural values (Zhao, 2016).

There has been an ebb and flow in educational philosophy in the United States over time, with achievement gaps (racial and economic) troubling our system for decades. The changes that have occurred such as “No Child Left Behind,” “Race to the Top,” “Common Core,” and “Standardized Testing,” have done very little to benefit the poor or close the gap. This gap perpetuates the existing inequalities and social order in our society, so we focus on fixing deficits and a deficit-driven education, not on strengths, or a strength-based approach. Overall, education strives to help all students meet the same set standards (Zhao, 2016).

Altering the old paradigm will not work; it must go through a transformation starting with macro-level changes, which are extremely difficult to make happen. They require incredible political resolve, an enormous financial investment, and a change in long-standing institutions and practices. We need to eliminate racism, upgrade poor schools to include the recruitment of quality teachers, add early learning programs for disadvantaged students, and increase communication on the topic, making it a priority nation-wide (Zhao, 2016).

In society today, educational opportunities and resources vary enormously. Wealthy, successful people pass on their wealth through education, with increased resources and opportunities. While many people of color and low-income have fewer early learning programs and diminished health care. One's home life remains a powerful predictor of future success (Zhao, 2016). These students often start out behind and stay behind as they fight to play catch up, while those with greater life circumstances move on to benefit from advanced learning resources and opportunities, yet all children are judged by the same standards.

In 1904, psychologist Alfred Binet developed the IQ test to identify children who were not benefiting from the curriculum in the Paris Public Schools. With his results, Binet was going to develop courses of study that would better meet their needs. He believed that children's intelligence could be changed and enriched through education. He spent much of his career developing curricula for that purpose. He wrote, "A few modern philosophers assert that an individual's intelligence is a fixed quality, a quality that cannot be increased. We must protest and react against this brutal pessimism. With practice, training, and above all, method, we can manage to increase our attention, our memory, our judgement and literally to become more intelligent than we were before" (Walters, 2015). Today, the IQ test is used as a final predictor,

as a golden ticket into gifted programs or just the opposite, not at all what Binet had intended it for.

U.S. schools have been reforming themselves over and over for decades. In the 1940s the focus was on aptitude testing, in the 50s and 60s there was a vocational counseling agenda, and in the 70s personality testing was the focus. These reforms have come and gone quickly as new philosophies rose to the forefront (Duckor, 2017). For some reason, seeing intelligence as malleable and based on effort has been difficult to promote with any success. The belief in the bell curve has dominated, and even shaped, our educational system, influencing every aspect of it, including the needs of the children being shaped by it (Saphier, 2017).

Although many trends have come and gone over the last one hundred years, Hall claims the basic principle and practice of education has remained the same (2013). Today, there is a great deal of research strongly suggesting that education should focus on bringing critical thinking into the foreground, that we need to focus on “thinking about thinking” (Ricci, 2015). There is a push for inquiry and reflection to foster a personal connection to the massive amounts of information we are asking students to simply memorize. There is a call for less doing and more thinking. “Learning is a consequence of thinking—it’s less the doing than the thinking, the reflecting on doing that counts” (Wiersema et al., 2015, p. 2).

When students persevere when faced with challenges and adversity, they have what Duckworth (2016) coined, “grit.” Grit is an important predictor of success in one’s academics and life; it helps explain why students persist and reach their goals. It is developed from having a growth mindset, believing you can and then persevering no matter what you face. Grit is passion and perseverance toward achieving one’s long-term goals by overcoming obstacles

(Duckworth, 2016; Hochanadel and Finamore, 2015). Just as with the growth mindset, effort is key to being a “gritty student.”

In the mid-1990s, educators were encouraged to rethink not only how they see learners, but also how they can make a real impact in the learning environment. Reynolds (2006) said that education needed a “learning-centered learning” approach as we entered the 21st Century. He pointed out that this approach can seem radical for public schools because it is multidimensional, promotes intrinsic motivation, and gives increased control over learning to the learners. It encourages the educational system to change, and to really begin learning about learning. This approach focuses on the lifelong aspect of learning, on how we interact with our life experiences over our life span.

Schools can continue to focus on outcomes, or on grades, as a means of promotion and labeling, or they can change as the times have, and focus on effort and learning, on the actual “process of learning.” A growth mindset is shown, in study after study, to encourage the critical thinking we need in the innovative society of the 21st Century (Blazer, 2011). Natural ability is only 25 percent of one’s success; psychosocial, or metacognitive, factors make up the other 75 percent (Ricci, 2015, p. 3). Binet was ahead of his time, teaching what top experts today, like Dweck, believe: success is found in the continuous development of one’s abilities, not in what comes naturally (Walters, 2015). Dweck’s (2007) 30-years of research into student motivation depicts how significant parts of intelligence can be developed, and how the brain has much greater potential for growth and change throughout life than was ever realized. She emphasizes that “it greatly matters what one believes about their intelligence” (p. 6). Development is a continuum, on which failure is a necessary part of learning (Moussavi-Bock, 2013).

Today's growth mindset movement, that Dweck brought into the mainstream in 2007, has been referred to by many different names, including: grit-oriented reforms, student dispositions, socio-emotional learning outcomes, noncognitive indicators, affective factors, behavioral objectives and skills, and metacognition. It is believed that the academic achievement gap can be overcome by furthering nonacademic, or noncognitive, factors (Duckor, 2017). Age-old proverbs like, "It's never too late to learn" or "experience is the best teacher," as well as fables like the "The Tortoise and the Hare," depict what research is supporting and striving for today (Blazer, 2011; Duckor, 2017). Aesop's tortoise doesn't have the skills to win, but he certainly has the grit! Moyer (2012) says we are in a period of essential change, and that the survivors will be those willing to change. Nash (2017) calls one's belief in one's ability to succeed at a task, self-efficacy. She says critical thinking and creativity are essential for all students to become the global competitors needed in today's world; the right kinds of questions in classrooms cause students to seek answers.

Dweck helped guide us in the initial "how to" of bringing growth mindset into the classroom and schools. Her years of research make it clear that if teachers are willing to examine their own mindsets and make changes, we can help to close the achievement gap and offer a path to success for students who have given up. Many children of color and those living in poverty make up the majority of those on the negative side of the gap. They are trapped there due to the many factors that contribute to and are a result of poverty and racism. One environment we can control as a society, from which we can send positive messages and support equally to all, is the classroom and school. There is a growing list of schools joining the "Education Trust's Website" of underprivileged schools achieving high-gain results, proving it can work. Saphier (2017) states that the missing element of today's school reform is teaching

students to believe in themselves and to act accordingly in all they do. Sussman (2017) reiterates the current findings and tells us the classroom needs to be student-centered, emphasizing depth over breadth and critical thinking. A 180-degree shift in mindset is needed and has started in some states with a transformation of their curricula to match the Common Core State Standards. Nash (2017) believes these new state standards give teachers “a fresh opportunity to empower their students to discover their own answers and solutions to problems” (p. 28). Teachers must believe that all students can learn and then make students believe that, as well; it is the change in attitude required by all in this day and age. If students understand that they can build their intelligence, they will begin to act as such, taking risks and learning from their mistakes (Sparks, 2013).

How to Create a Growth Mindset Classroom

Building a growth mindset classroom culture changes how students approach learning and helps to develop strong work habits that ultimately lead to achievement and success; it influences one’s learning behaviors (Robinson, 2017). According to Hanson (2016), a whole school approach works best, however, as with anything in life, some is certainly better than none. This deficit should not discourage a teacher from creating his or her own growth mindset classroom, even amid a fixed mindset school, in the hopes that it will be contagious and spread!

It all starts with the teacher. A mindset classroom is multi-faceted. It is an attitude or belief system that shapes all that happens in the classroom, from the décor to the praise, and begins with the teacher. If a teacher does not have a growth mindset in all he or she does and says, the students most likely will not develop a growth mindset. Teachers must do a self-evaluation and reflect on some important questions as evidence of their mindset.

- 1) Am I a lifelong learner?
- 2) Am I passionate about learning and the content I am teaching?
- 3) Am I persistent in the face of challenges?
- 4) Do I believe all students are capable of learning anything with effort, or, do I catch myself thinking things like, 'He is not good at math' and 'she is not a good writer.'
- 5) What is the culture of my classroom/school?

A growth mindset is: nonverbal behaviors (looks like), the things you say and do (sounds like), and a visible attitude and emotions (feels like) (Wiersema et al., 2015). A teacher must establish high expectations and challenge all students yet give his or her students the skills and a concrete plan toward achieving their learning goals. He or she must be a growth mindset role model for his or her class, and with his or her peers. A growth mindset in both teachers and students "helps students to seek learning, love learning, and learn effectively (Dweck, 2007, p. 10).

Intervention is key. The ideal starting place for students is to teach them how the brain works and responds to learning (Dweck, 2006). Intervention increases students' beliefs about the malleability of intelligence, which then impacts their desire to learn, and ultimately their academic achievement (Esparza et al., 2015). It is the teacher's job to follow up with further learning after an intervention, or it will quickly fade from a student's mind like any other learning that lacks meaning and practice. Thus, teachers with a stronger belief in growth mindset and better follow through strategies can have a greater positive impact on their students.

Students must understand that connections in the brain will be changed and strengthened through repetition and practice. Ricci (2013) suggests using thread, yarn, and rope as a visual to show how connections change and get stronger as learning is reinforced (pp. 94 & 101) (See graphics in Appendix D). They must be taught and have a clear understanding what the differences are

between growth and fixed mindset, so they realize the impact their internal dialog, choices, and behaviors can have on their learning.

Students must know that fast learning is not best; learning takes time and intentional effort; it is a process. Sometimes when students take longer they understand things at a deeper level. It is the classroom culture that the teacher creates that prepares students for challenging, meaningful work. Dweck (2007) repeatedly found that when students, regardless of age, grade, or school, were taught how their brains formed new connections whenever they learned, and how they became smarter, they naturally felt and thus acted empowered. They were excited and motivated by the fact that they could influence and drive their own brains; they had control over their future learning or lack thereof. The groups that took part in an intervention out-performed the control group every time without fail. The students felt more invested in learning and their teachers noticed changes in their desire to work and learn. Intelligence should not be defined by IQ or by the grades one gets, but rather as “the capacity to view difficulty as an opportunity to stop, reassess, and employ strategies to make sense of problems” (Miller, 2013, p. 51).

Classroom climate and décor. A growth mindset classroom must be a risk-tolerant safe zone, where mistakes, errors, and failure are highly esteemed and seen as rich learning opportunities. Students are never made fun of or laughed at, but rather encouraged and respected for their effort and hard work. As students become older, their fear of failure, and all that comes with it, increases. Teachers must seek to create a supportive, comfortable environment of learning, cooperation, collaboration, and a willingness to learn from each other’s successes and mistakes. Desks should be arranged so that students can easily work as a whole class, in small groups, with a partner, or individually.

Students must believe, through having a growth mindset, that FAIL simply means “first attempt at learning” (Robinson, 2017, p. 19). A teacher should be present and available at all times to help a student who needs help. If he or she sees a student struggling, that is the perfect opportunity to teach students how to think about their thinking/learning process and try different strategies, to guide questioning about what one has done and can do as a next step. However, a student should not be saved from their struggles, as the struggles are what create resiliency. Struggle is a necessary part of learning. Students should be taught to think like detectives who are solving a mystery (Dweck, 2010; Robinson, 2017).

Learning assumes one does not have all the answers. So, one’s success comes down to a willingness to practice and persist at all costs to learn. The environment must send the message that what is being done in the classroom is important, all students are capable of learning whatever the class is working on, and the teacher will not give up on any student (Saphier, 2017). No matter what one’s ability is, effort is what ignites that ability and turns it into accomplishments (Dweck, 2006, p. 57).

Teachers must ask themselves, “what can I do to make students want to enter my room and learn? Sadly, students often equate the word academics with boredom” (Moyer, 2012, p. 9). Teachers must make sure his or her actions in the classroom are truly student-focused, a place where the students are the reason for all one chooses to do. A growth mindset classroom should evoke excitement and curiosity when one walks in. There should be motivational posters on the walls, reminding students that struggle leads to resiliency, that FAIL is just the ‘first attempt at learning,’ that effort and mistakes are necessary parts in the process of learning. There needs to be a poster of the brain somewhere, reminding students of the control they have in growing and making theirs stronger like a muscle, and thus getting smarter. The room should also

prepare and excite students for what they are going to learn, for example, if you are reading a book about Knights decorate one wall like a castle. Walls should not remain blank and uninteresting. Have a recognition wall for student growth, those who have struggled and overcome obstacles and those who have made mistakes that resulted in growth. Have a wall with famous people who have struggled and overcome their challenges, so students can see what is truly necessary to succeed.

Valued assets. Effort is the most important part of a growth mindset classroom and needs to be seen as such by the students, as opposed to believing effort means lack of intelligence or ability. “Conventional wisdom tells us that without the willingness to take risks—including the risk of failure—nothing of significance would ever be discovered” (Miller, 2013, p. 50). Effort does not mean just time spent studying (passive), but rather effort must be a work of the mind (active), both meaningful and mindful. Effort is something students must value to become smarter. It is the difference between time spent versus effort invested (Aditomo, 2015; Wiersema et al., 2015). Effort is a necessary part of learning for everyone. If students are given work that does not challenge them, suggest the work is “boring and less useful” for their brain growth. Educators should then provide more challenging work that will help them to continue to learn and grow; present these tasks as “fun and exciting,” tasks that help their brains grow stronger and make learning easier over time. Work should be adjusted so students are neither struggling nor coasting. Tasks that consistently require no effort put a student at risk of developing a fixed mindset, believing they are smart only if they succeed without putting forth effort.

Dweck’s (2007) years of research has shown that the most motivated and resilient students are the ones who believe their abilities can be developed through their own effort. It is

important to teach and reinforce that “one can master any skill if enough effort is put into it; natural talent is just a small part of mastering a skill” (Wu, 2014, p. 5). We grow and improve through continuous, consistent effort. Pastor Craig Groeschel said, successful people do continuously what average people do occasionally, after my research this statement makes more sense than ever before!

Challenges, errors, and failure must be seen as opportunities to learn and thus something to celebrate (Dweck, 2006; Ricci, 2015; Wiersema et al., 2015). If individuals avoid problems, they will miss the very richest opportunities for learning. In fact, mindset becomes most significant when students are faced with challenging situations and setbacks. It is at that point when they can choose to quit or realize that learning comes when we use grit and fight through the discomfort. “True learning depends on our tolerance threshold, upon how long we can wrestle with doubt.” It is this confusion that creates more productive learners and critical thinking (Miller, 2013, p. 51). It is when teachers and students believe in and act on the value of errors that rising achievement levels are seen.

Student ownership and responsibility (Coined “SOAR”) are key assets in a growth mindset classroom. SOAR habits include: believing one can take on challenging academic tasks successfully, coming to class prepared (both physically and mentally), completing tasks in a timely manner, and seeking help when needed (The National Center on Scaling Up Effective Schools, 2012). “In our consumer driven society, education is one area where people are content to settle for less. Ownership and responsibility for one’s own learning combats this” (Coffman, 2003, p. 2). Integrating responsibility into one’s beliefs and behaviors reaches far beyond school, it helps students become responsible citizens and productive members of society throughout their lives.

Grit, or perseverance and passion overtime, is essential to student growth (Duckworth, 2016). Grit is yet another asset that helps develop sound, critical thinking. This can be fostered in a few different ways within the classroom. First, it is essential that a teacher sets high expectations. If students put time and effort into their learning, they are invested in the process. They must expect frustrations to pop up along the way. Second, teachers must advocate for a growth mindset. Effort needs to be equated with learning. Teachers need to focus on student effort not intelligence. Third, teachers must have and exhibit passion for their subject area. Passion is contagious, but unfortunately so is lack of passion. Fourth, develop a class mission together, so students are invested in working toward a common goal (Fornaciari, 2017).

Praise and messages. Almost everything a teacher says to their students sends an important message. The language teachers use is capable of changing lives; it can either support or hinder students' thinking processes. Teachers need to continually ask what message their words are conveying to students (Enriquez et al., 2017). How teachers (and parents!) praise is crucial. It is common place to tell a child they are smart, yet we now know this can lead to decreased learning and risk taking, and can potentially affect one's sense of self. One should never praise internal characteristics, like intelligence, but rather one's actions. If results took little effort, praise should be avoided all together (Walter, 2014). Growth mindset uses language to focus on the strategies and effort behind the achievement. This is considered process-oriented feedback ("You worked hard on that," or, "you used vibrant verbs in that") instead of person-oriented feedback ("You are good at that," or, "you are smart"). It is most important to focus on "how" one works, or, the process of learning. Teachers must emphasize the effort applied, the strategies used, the choices students made, the concentration used, and the persistence displayed, the actions that helped the student remain motivated, confident, and effective. Process-oriented

praise lets students remain motivated and effective when faced with the inevitable setbacks in class and in life.

Teachers must be purposeful in seeking opportunities to help students learn and think differently. Students must be valued for trying and reconsidering ideas and problems from different perspectives, so they continue to grow. Teachers are responsible for monitoring their language, behavior, and instructional decision-making daily (Saphier, 2017). When introducing a new problem, do not say, “Let us start with an easy one,” but rather let them know that it may take a few tries before they get it and that is okay (Sparks, 2013). Discuss learning problems privately, but improvements publicly and in detail, so others can learn from the steps those who were successful took (Sparks, 2013).

Exemplifying experts who struggled before they succeeded is a very meaningful strategy to teach students that everyone must put forth effort if they are to become good at something. “Albert Einstein swore that he was slow to learn and that’s why he pondered the same questions year after year” (Dweck, 2010, p. 18). A great website for precisely this purpose is, *Goalcast*. On this website teachers and students can find short videos about famous people they can relate to and the struggles they incurred on their difficult and varied roads to success. Discussions about the growth mindset qualities that were observed should follow the videos. It is by doing this that students realize everyone who is successful puts in effort and comes up against challenges.

Variety. Teachers must vary learning strategies to not only accommodate different learning styles, but also to help each student build a tool box, or repertoire, of strategies they can use whenever they feel stuck. It is effective to future learning if students are familiar with how they learn best. The different learning styles include visual/special, aural/auditory,

verbal/linguistic, physical/kinesthetic, logical/mathematical, social/interpersonal, and solitary/intrapersonal learning styles (Discovering your learning style, n.d.). Learning should build on strengths, interests, and needs. It should be active, goal-oriented, self-regulated, and a student should feel personally responsible and invested. Learning resources should be vast and varied and can include other students, teachers, family, the community, and the world around us. Reynolds (2006) talks about textbooks, which include online video clips, study guides, and searchable data bases and fit in well with the growth mindset. Lessons need to be diversified so that all students see themselves in the lessons and feel they have a place in the class (Saphier, 2017). Teachers should avoid long lectures, but rather let students play an active role in their learning. Use some lecture, but also utilize collaborative learning and have kids work with partners and in small groups. Allow stronger students to teach students who have not mastered the concept *yet*.

Assessment. Students should be assessed in a variety of ways and whenever possible. Assess often to use as more of a thermometer of understanding rather than for a grade. This type of assessment is called formative assessment and is ongoing, unlike summative assessment which is whole unit assessment and often compared to a set benchmark. Units should be started with a pre-test and end with a post-test, so students can truly gage their growth over time. In this way, they can see that with application they can become smarter. Students should feel one of four ways about the work they are doing: I can teach this well, I can do this well, I can do this with help, or, I ca not do this “yet.” *Not yet* equals promise, potential, and subsequent competence (Miller, 2013). Students should take responsibility for demonstrating their learning with choice. Different options to demonstrate learning are multiple choice testing, essays, research projects, portfolios, science fair type projects, and genius hour; additional assessment

ideas can include a rap, a poster, poem, or commercial. Varied and ongoing assessment should not only measure, but also advance learning, it should be growth-focused (Barnes and Fives, 2016). Barnes and Fives (2016) reiterate what teachers should do: promote and model risk and mistake tolerance in learning activities; offer timely, process-focused feedback; emphasize effort over products or outcome; and establish and hold high expectations for all students.

A key component of the growth mindset is “the power of yet” (Ricci, 2013, p. 95). *Yet* should be a frequently used word in the classroom. Students should never feel like lack of understanding something is their outcome, but rather an uncomfortable step in the process of learning. If a student says, “I am not good at math,” a teacher should immediately reply with, “*Not yet.*” Students need to believe that what they do not understand or struggle with is always changing, it is fluid. A task may seem difficult, but then with mindful effort and practice the student can master it; the connections in their brain have become strong and the task that was once difficult is now easy. But, it will soon be replaced with another difficult task to master as one continues to learn. If a student does all they are supposed to in the learning process and still does not understand something, it is critical the teacher guide them in understanding exactly what the nature of the problem is and how to overcome it.

Redoing an assignment or project and retaking a quiz or test is crucial in the learning process. If a poor grade is ignored and accepted, it does not send the message that learning is the primary goal in school. The grade should be *not yet*, and the concepts or information should be retaught in a different way, ensuring the student’s understanding of the material. Then and only then should they redo something or retake the assessment for a new grade. This is more involved than simply moving on to a new topic, but, ensures all students have learned and sends a strong message, that learning is valued and no one will be left behind.

Homework should not feel like mindless and repetitive exercises to keep students busy. They should be given fresh, new problems to solve that require them to use what they have learned, to show both what they do and do not understand, and to reinforce what they have learned. It should ask them to stretch to the next level, using what they have learned in original ways.

Feedback. Teachers face the challenge of helping students learn to ask and answer questions consistently for themselves, such as: “How did I do it...what if...what was/am I thinking...why was/am I thinking that...how is this similar to...different than...what did I do...why did I do that...what do I conclude about...what is my evidence...why does it matter...how does this connect/relate to” (Wiersema et al., 2015, p. 3). This type of ongoing questioning that causes them to think about their thinking is called intentional mental processing and allows students to be more successful the next time (Wiersema et al., 2015). Ricci (2013) refers to critical thinking as a great neural workout and says, “All students must have daily opportunities to think critically” (p. 33). Questioning helps to awaken curiosity in students, which is crucial to the learning process and one’s desire to learn. Nash (2017) reminds teachers that the right questions allow students to tap into their highest-level thinking. She outlines the hallmarks to create a question culture in one’s classroom:

- 1) A willingness to admit, “I don’t know”
- 2) Encouraging, not just allowing, questions in a positive way
- 3) Putting the focus on asking empowering questions
- 4) Emphasizing the process of asking questions and then searching for answers, rather than just finding the right answer
- 5) Accepting and rewarding risk-taking (p. 29).

Empowering questions, deliberately asked by the teacher, not only cause students to feel confident about what they are doing but encourage them to continue. Examples Nash (2017) shares are: “What are you most proud of in this project, what is the outcome you are seeking for this project, what barriers are you encountering, what are your thoughts about solving these problems, when you collaborated with a partner what feedback were you given, what are your next steps?” (p. 29). “The result: globally competitive students who are able to think critically and solve difficult problems” (Nash, 2017, p. 29).

It is crucial that when students are given feedback, they also have the opportunity for follow up. Again, if the purpose of school is learning, then teachers should not give students who have not mastered a skill *yet* a bad grade, but rather a “*not yet*,” followed by help in (re)learning the material. Perseverance and improvement should be recognized and celebrated (The National Center on Scaling Up Effective Schools, 2012). When the focus cannot be/is not on what was done correctly or well, it should be on what can be done differently next time to continue to learn and grow. Wilson and Conyers (2016) call this “TNT,” which stands for “the next time;” what can a teacher suggest a student do to improve their work next time, or, what goals can a student set and work on to make his or her work better the next time.

Strategies to Use in the Content Areas

Robinson (2017) suggests two ideas that can be used in the classroom to reinforce learning and that can be applied to any content area. The first is called “free recall,” where students spend 10 minutes at the end of class writing everything they can remember about the lesson on a piece of paper. After 10 minutes they can use their notes to fill in missing information. The second is called “summary sheets.” Students are asked to submit a sheet of paper at the beginning of the week summarizing the previous week’s materials. I have always

believed in constant review of material taught, rather than intense studying, or cramming, for assessment purposes. I ask my own children to review their class notes/lessons daily, which results in actual learning over time, as opposed to “learning” the material for a test and good grade.

Language Arts. Language arts is one of the easier content areas to depict growth mindset and fixed mindset, by using characters in literature. Students can see that people are capable of change and growth, and that traits are not permanent (Enriquez, Clark, & Della Calce, 2017). Literature shows readers what is possible in their own lives and in the world around them. Students can see different results based on how characters approach challenges, as well as how one perseveres through difficulties to achieve their goals. Literature and follow up discussions guided by the teacher, can help students consider multiple perspectives and strategies for solving various problems. In this way, students learn that there is more than one approach when faced with an obstacle, as well as how one can work toward finding the best strategy. Questioning, once again, is a useful approach to encourage critical thinking. Teachers must: consider their literature choices carefully; highlight the process of learning, traits, and how they can change; give purposeful, process-oriented feedback; and invite students to question different views (Enriquez et al., 2017). There are also many non-fiction pieces students can read to see successful people overcome their setbacks and go on to achieve their goals. As a writing project that embraces growth mindset, students can rewrite story endings from a fixed mindset to a growth mindset way of thinking and see how the story differs (Dunham, 2016, p. 66).

Social Studies. Social Studies is another content area where it is easy to point out growth and fixed mindset behaviors as one examines individuals and events in history. Teachers can highlight stories of determination and the accomplishments of well-known figures from

different historical periods. Teachers can go beyond just teaching the history of an explorer or inventor and examine his or her obstacles and setbacks and what he or she did, good or bad, to overcome them. At times in history, individuals or groups have not overcome challenges, so teachers can look at what stood in their way and what they could have done differently.

Teachers should choose intentionally, sharing stories from history, and even alumni, that highlight accomplishments; stories of determination provide energy and enthusiasm to climb similar hurdles (Fornaciari, 2017, p. 12). Again, the discussion that follows is as important as the story one is teaching.

Science. Reflective writing is a beneficial tool to use in a growth mindset science classroom. It comes from reflective thinking about what one has read, which is then used to construct one's own understanding of the material, as opposed to just memorizing and recalling facts (Huang & Kalman, 2012). Reflective writing is a self-dialog about what one has read, but it should not replace discussions with others. This type of writing is not summarizing, but rather questioning what you have read and how you relate to it. It is writing to negotiate meaning and construct knowledge. It involves reading, annotating, rethinking, and then writing rapidly on one's understanding. Growth mindset concepts complement and reinforce the scientific design processes, since scientific investigations involve dealing with mistakes, responding to feedback, and persevering through problems and multiple trials (Robinson, 2017). "Because" is a significant word to see in science (or any subject for that matter), because is usually comes before supporting evidence and examples, which is crucial. Scientists are wrong over and over before they discover or prove something...and that's okay!

Math. In math answers are generally right or wrong, but it is the process that is significant, the "how" in which one arrived at his or her answers. It is also important to know

what went wrong if one arrived at an incorrect answer. Most people must work to understand mathematics, trying different strategies and struggling to arrive at an understanding of the material. It is a growth mindset that prepares a student to struggle through a process to gain understanding, they know that the struggle is a crucial part of their learning. A fixed mindset sees the struggles as a sign that they are “just not good at math.” These students have no need for the all-important tool box of different strategies, since that just reinforces the fact that they do not have the ability to learn math. A fixed mindset is detrimental to learning math.

Math is a good subject in which to remember that not everyone will reach the same level, but everyone can improve their current ability level. Growth mindset math students enthusiastically learn one problem-solving technique after another, knowing these are what will help them improve as math students. Teachers need to support students as they learn to think mathematically and struggle with problem outcomes, this will help them develop and reinforce a growth mindset. Acknowledge the complexity of the task at hand (Sussman, 2017).

A challenge for today’s teachers is their busy, demanding schedules. They must find time in their schedule to allow students to engage in the struggle and to find different ways to enable their students to understand these complex concepts. It is this reflective worktime that allows students to think more deeply. Developing a growth mindset takes deliberate effort and time on the part of the teacher and of the students. Teachers must be able to show that effort is valued more than the correct answers; if the effort and understanding are there, correct answers will follow. Emphasis needs to be placed on the developing tool box, or numerous strategies, it will take to reach the correct answers. As Lee (2009) argued, “What answer did you get,” is not a growth mindset question, but rather ask, “How did you solve that problem, what different strategies did you try, and what mathematical ideas did you use” (p. 46).

Impact of This Approach on Students and on Society

Our species is the learning species, our survival has always depended on learning and adapting. A growth mindset puts the focus on how to best learn and pushes us to adapt to what works best in this age of innovation we live in (Duckworth, 2016; Reynolds, 2006). We naturally have a fight or flight response, which is when mindset becomes most evident. Growth mindset students value the fight to learn, while fixed mindset students will run from the challenges and risks necessary to learn. In study after study, growth mindset predicts achievement through college (Esparza et al, 2014). If students learn to be successful in high school, then they are more likely to graduate and go to college. If they have learned to be responsible for their learning in middle and high school, their chances of finishing college are much greater. Creating a growth mindset classroom/school has also been shown to narrow, and may eventually close, the achievement gap that has plagued our country for decades. Minorities are scoring closer to white students and females are scoring closer to and even above males in math (Blazer, 2011). Greater student motivation comes from seeing one's learning and growth as something they can control and develop; an inexpensive intervention gives students the knowledge about their brains they need to feel empowered. One's mindset has been shown to be a self-fulfilling prophecy, where one's beliefs effect their behaviors, which effect outcomes, or academic achievement (Yeager et al, 2016).

Gifted students have been undervalued in our society during the last decade, throughout which time society has put all its' focus on the students who have not made the expected progress. The growth mindset is the solution to moving all students forward. There is a misconception that gifted students have a growth mindset and will manage to grow regardless, but this is just not true. The result of neglecting these above-level students is often

disengagement in school and underachievement, or failure to reach one's potential as they slide under the radar. After years of good grades with little effort, many gifted students develop a fixed mindset once they are finally faced with a challenge in their learning, believing that if they have to work hard, they are not smart (Esparza et al, 2014).

Many students are derailed as they transition into middle school. First, students have an increased self-awareness as they become adolescents, and tend to be more concerned about how they appear to others (Hanson, 2016). Also, the work gets harder as grading becomes more stringent, and the environment becomes less personalized and nurturing. Teachers growth mindsets have been shown to be less developed as the grade level increases, when teens need the support every bit as much as they did in elementary school (Hanson, 2016, p. 10). In Dweck's (2007) numerous studies with 7th grade students, the students showed a decline in motivation and grades during their transition to middle school, but this statistic does not include all students. Those students with a fixed mindset did the poorest, even if they had good grades before entering middle school. Students who believed their intelligence could be developed showed increased grades overtime. A growth mindset classroom prepares students to handle the transitions and challenges they will inevitably face.

Clark County School District in Las Vegas, Nevada is the fifth largest school district in the United States. After a few decades of research in support of the growth mindset, CCSD conducted a year-long, voluntary study on the growth mindset and related student behaviors during the 2014-15 school year (Snipes, 2017). Their findings support all prior studies in the effectiveness of the growth mindset on not only positively impacting all students, but on narrowing the achievement gap. They began with an intervention to teach students about the brain and the two-different mindsets, and found even a short-term, low-cost intervention is a

necessity that has an obvious influence on students. They also looked at performance avoidance (refraining from making an effort due to concerns over failure or embarrassment), which increased with a fixed mindset and by grade level, and at academic behaviors (completing homework and participating in class) which increased with a growth mindset and decreased with grade level. Meaningful, growth mindset feedback was shown to increase effort which then led to higher quality student work; fixed mindset messages were shown to impair growth mindset. Teachers self-reported scores on growth mindset went down as their grade level rose; not only has this been observed in study after study, but analysis of these teachers' self-reported survey results also confirmed this. The findings were consistent with the role that beliefs and attitudes play in academic achievement overall. The researchers concluded that a poor, or fixed, teacher mindset in disadvantaged schools should be a primary target for educational intervention. English learners and the economically disadvantaged were found to be more likely to have a fixed mindset, believing that their effort did not result in higher grades. To narrow this gap, students must see the value and power in their effort, the growth mindset does just that.

Hanson (2016) supports the reason for my "ultimate goal" of teaching professional development days on the growth mindset to schools, when he says, "research shows that when faculty participated in professional development on growth mindset this resulted in increased reports of teachers' beliefs in growth that had a lasting effect; influencing faculty and administrators subsequent behaviors" (p. 6). The ideal approach in building a growth mindset culture is a whole-school approach. This is an approach where administrators' mindsets affect teachers and teachers' mindsets affects students. It is a culture with a "common vision, shared knowledge, support, and resources," a culture where there is shared leadership, collaborative planning, and open communication and support (Hanson, 2016, p. 8).

In summary, after decades of changes in our educational system, it is still ridden with problems and a growing achievement gap. The more emphasis the system puts on set standards and a one-size-fits-all achievement goal, the wider the gap gets in education, dividing our society between the haves and the have nots. After months of reading and my own research of what has been in the works for over 30 years, I firmly believe that teaching the growth mindset and creating the positive environment of a growth mindset classroom will change education in the direction we are striving for as a society. It can and will engage and empower all students regardless of their current place in society or belief in their ability to succeed. I am excited to spread knowledge about the growth mindset in the classroom and in schools to as many students, educators, and administrators as I can!

Chapter III: Methods

August 1, 2017 my family made a big move just south of Charlotte, North Carolina. It was my first permanent move from the northeast after having lived there almost all of my then 50 years of life. It is different, although I do like it, except for one aspect that my husband, my three children, and I are equally unhappy with: the schools. The area we moved to is considered up and coming, with some of the best rated schools in the Charlotte area; however, they do not seem to measure up to schools in the northeast. The budget for education is much lower here because taxes are so much lower. As a result, teachers make much less and there are fewer financial resources to draw upon to make the system better. Unfortunately, the result is that many quality teachers are being lost to higher paying states. Also, teachers are not required to have a Masters' Degree, and receive minimal compensation for having one. In fact, anyone with a Bachelors' Degree in a content area can become certified to teach if a school hires and sponsors them in what they call "lateral entry certification." It appears as if education and educators are not valued equally in all states in our country with a set standard for all. So, what can be done to bring all schools up to the same level as schools in the northeast region of our country, giving all students the same opportunities? As I began researching current trends in education months ago and stumbled upon the growth mindset, I had an "aha moment," and so my research and passion began!

The Rationale for the Development of a Website to Assist Educators in Developing a Growth Mindset Classroom

The traditional educational paradigm that was originally developed for an industrialized nation is still going strong, in this age of technology, with only minor changes. Yet, we are asking kids to become innovators and critical thinkers like never before, as they make their way

in a *new world*. It is just not working the way it needs to, so much is changing around us, yet education, where we are developing kids who will be our future, lags behind. From my observations, some school districts are farther ahead than others in learning-centered learning, yet the standard is the same for all. The answer seems to be, in my eyes and the eyes of so very many researchers, the growth mindset. Simply put, a growth mindset classroom depicts best teaching practices. It would be hard to argue with almost any facet of the growth mindset and say it would not be good for our students. Ricci (2015) points out numerous barriers that she has heard from K-12 teachers as she travels the country teaching schools how to become growth mindset focused (p. 13). None of them imply, in any way, that growth mindset is not an amazing belief system to bring into schools and change them for the better, but rather all imply that change is difficult for our current age-old system and all those used to “the way things are.” Our current system makes some aspects of a growth mindset school or district difficult due to the way it is structured, like “not yet” as a grade, requiring a more involved change to include procedures and policies. My website, *TheGrowthMindsetClassroom.com*, begins with creating positive changes in one’s own classroom. It removes the initial search involved in creating a growth mindset classroom for educators by providing information that is conveniently located in one place. It gives simple “how to” instructions but also provides a plethora of additional resources and further materials to use, once the process is underway in his or her own classroom.

There are so many things that can be done to empower teachers to begin making positive changes immediately, to bring the passion back to teaching and positively impact students, making them excited about learning like never before. I hear from students far too often that “school is boring,” but it does not have to be that way! When students truly understand the power they have to learn and become smarter/stronger academically, thus making learning

easier, their perception of school takes a turn in a positive direction. The process is a continuous circle: they learn about the brain and how to best use it to get smarter, they begin to make changes in their academic behaviors with their teacher by their side for support, then they master concepts and get better grades as a result, which further inspires and motivates them to continue putting in effort to learn and get good grades, because they see it working and feel empowered; it is a cycle that takes off and is contagious once it begins. My research has culminated in an easy to use website, with lots of evidence to support it, and additional resources to review and use, making this positive change possible for any teacher. It guides educators in making their classroom a verb, filled with growth-based action, to inspire them and their students alike.

The Process in Creating the Growth Mindset Website

After extensive research into the effectiveness of a growth mindset classroom and ideas to develop it, I have created a website to help revolutionize teaching and education. Thirty plus years ago, Dweck started something amazing with a question, “how do people cope with failure;” followed by her dissertation question: “What makes a capable child give up in the face of failure, where other children may be motivated by the failure” (Walter’s, 2014)? Since then, many researchers have done similar studies all with the same positive results...the growth mindset can transform our educational system! With the growth mindset, the focus is on the process of learning and the psychosocial factors that guide much of learning.

I began creating my website by buying the domain name of *TheGrowthMindsetClassroom.com*. Then, I created my logo, which is a book with a tree growing out of it, I believe this image fits my topic well (See the graphic in Appendix E). Under my website name I added, “Where classroom is a verb,” a slogan I originally developed to depict my future classroom, and which happens to fit perfectly with a growth mindset classroom, which

needs intentional effort from all to work, to bring it to life. I designed each of the links, to correspond closely with the headings in my literature review. Each heading contains a lesson to teach educators what the heading means and how it helps them to create a growth mindset classroom. Within each link, there are related sub links to expand learning further and give educators additional information and resources. I added a link called, Tool Box, where I placed relevant videos and resources; this will continue to evolve with time. I also added a link with my thesis. My goal was to make it easy to use and visually appealing. My assistant in the technical piece of this project was my husband, Matthew, who has an M.B.A. in Management Information Systems.

Now that my website is created, I will begin the development of a presentation designed to be presented at professional development days for educators, with the goal of inspiring whole schools to jump onboard and make positive changes to their classrooms and schools, by developing a growth mindset focus. From listening to the news, it is clear North Carolina has some educational issues and they are looking for ways to improve student learning, test scores are not showing much improvement overtime. I have been compiling a list of individuals in the state capitol of Raleigh, whom I can write to, in an effort to present the growth mindset concept and its benefits.

The Content of the Project

My project is a comprehensive website, developed to both define a growth and fixed mindset and to describe what a growth mindset classroom looks like. I have given specifics, much like my thesis did in the literature review, elaborating on the different elements needed to create a growth mindset classroom. Teachers will learn that they need to be the first to change their own mindset since they have such a significant impact on so many students each year.

Then comes the intervention, where the students are empowered by learning about their brains and the control they have over making them stronger and over their own learning. Next, I illustrated the growth mindset classroom climate and environment, not only what it looks like but what it feels like and says to all who enter the room. Then, there is the valued assets that make-up the growth mindset, of which effort is number one. Followed by the impact the correct praise makes and the implication of absolutely everything educators say to their students. The topic of variety comes next, depicting the kinds of variety students need, from a variety of strategies to use in learning and studying, to the different ways educators structure learning so students remain engaged and responsible for their learning. Lastly, comes the links to assessment and feedback; explaining how assessment is used to gauge learning and understanding, and, the weight feedback holds, as well as what it means for the next step in learning. Each section is a link off the homepage and contains sub-links to related sub-topics, such as questioning under classroom environment and climate. I added a tool box link, which contains relevant videos, websites, and mindset assessments for further teaching. I also have a link to my thesis, references, and appendixes, since there is useful information within it that is not in the website lessons. I added additional ideas that teachers can use, throughout my website; I will continue its development overtime. Finally, there is a link to expand on the Common Core State Standards.

All these links are clearly explained, visually appealing, organized in a simple format, and easy to use. This site is comprehensive, so educators will not have to spend hours searching for resources from which to develop their own growth mindset and create a growth mindset classroom. This project is the first step in my work to help transform education for the better, especially in those parts of the country that lag the most, often where resources are not readily available.

Chapter IV: The Project

As I described in the previous chapter, I have created the website titled: *The Growth Mindset Classroom*, for the purpose of teaching educators what the growth mindset is and how to create their own growth mindset classroom and to put vital information and many pertinent resources in one place for their ease of use. The sections of the website follow the sections of my thesis closely but not exactly. I have made it less technical than my thesis and more of an easy to read ‘how to’ approach. I have added quotes within most headings to help introduce and explain the various topics. My website and links lead to lessons on the following specific topics:

- The Purpose of My Website
- What is the Growth (and Fixed) Mindset
 - Origin, definition of, and cardinal rules for the mindsets
- The Common Core State Standards
 - How they tie into the growth mindset with links to further explain their history and presence in our educational system today
- The Teacher
 - His or her vital role in creating a growth mindset classroom
- The Intervention
 - Teaching how the brain learns and gets stronger, a very empowering and critical step for students
- Classroom Environment and Climate
 - Challenge and Empower All Students
 - No student should be allowed to struggle or coast, differentiated learning is key

- Struggles, Mistakes, and Failure
 - Questioning Teaches Critical Thinking:
 - Empowering VS disempowering questions
 - The Value of Wait Time
- Valued Assets
 - Effort, Grit and Perseverance, Resiliency, Responsibility, Risk, Consistency, and Self-efficacy
- Praise and Messages
 - The Power of Yet
- Variety
- Assessment
- Feedback
- Strategies in the Content Area
 - Language Arts, Social Studies, Science, and Math
- Sources
 - My four favorite books/*must reads* depicted with ***
- All About the Author
- My Original Thesis
 - Introduction, Review of the Literature, Methods, The Project, and Discussion

Chapter V: Discussion

In December, shortly after I began substitute teaching, I started to research current trends in education for the purpose of my upcoming thesis and potential teaching jobs once it was finished. It was my first step back into education after being a stay-at-home mom for 13-1/2 years. I stumbled upon Carol Dweck and the growth mindset and quickly realized it was a perfect fit with my self-empowering lifelong motto of *grow, learn, and change*. I was always passionate about anything self-help, and as a child and family therapist, I focused on what my clients could do to help themselves in between sessions, knowing that is what really mattered for real change in their lives. As the quote of disputed origin goes: “Give a man a fish, and you feed him for a day. Teach a man to fish, and you feed him for a lifetime.”

The more I researched and read about growth mindset, the more impassioned I became about it. It has gone from being my thesis topic to my future company and career. Now that I have completed my thesis and website, I plan to begin by reaching out to all the nearby school districts in an effort to share my website and teach *how to create a growth mindset classroom* during professional development days. I plan to reach out to the Department of Education in Raleigh, NC to offer any assistance I can give in helping to transform education in North Carolina. The growth mindset is spoken about and implemented on a regular basis in our old school district in Pennsylvania; in North Carolina, it is in its infancy. I will begin researching how to start a blog for income and start one about all things growth mindset. I also plan to write my first book titled: *The Growth Mindset Daily Journal*, which will have 365 growth mindset related quotes, an explanation for each, how to apply each to one’s life, and space for one’s own notes/thoughts/ideas. My hope is to make a positive impact in the field of education and thus in the lives of many.

Implications of the Research

The growth mindset in education really does offer guidelines for best teaching practices, is in line with all the current brain research, and supports the Common Core State Standards guiding curriculum today. Ricci, the author of one of my favorite growth mindset books, travels to schools all over the country training teachers and administrators *how to* create a growth mindset school. In her book, she illustrates the perceived barriers educators see in her trainings, none of which criticize what must be done to create this mindset within their schools, but rather the difficulty of change for students, parents, the school district, and the age-old system that is currently the norm.

Years of research repeatedly support the growth mindset, which is also referred to by many different names today (all stemming from the growth mindset): students dispositions, metacognition, socio-emotional learning outcomes, non-cognitive indicators, affective factors, behavioral objectives and skills, and grit-oriented reforms, but all focus on the power of non-cognitive factors (effort, grit, etc.), or things individuals are in control of, as opposed to intelligence, in predicting one's academic (and lifelong) success. In my research, I learned that what is missing in school reform thus far has been teaching students to believe in themselves and to act according to that belief. One's beliefs are a self-fulfilling prophesy. If students do not believe they can learn, that belief will be their biggest obstacle to learning. On the other hand, if they believe they can learn, because they realize the power they have over their brains and their learning, then they will in fact make the effort necessary to learn. Looking back at my two Master's programs, I vividly remember times when I sat at my desk and could not move forward in a paper or project due to my negative attitude/thinking about it and my ability to do it. The

way I turned that around was to change my thinking, to believe I could in fact do what was expected of me just like so many other students were managing to do and it worked!

The existing and vast research on the growth mindset shows over and over how educators and students working with a growth mindset can help to close the long-standing achievement gap that exists in our country. It is here where my social work degree comes into play! If we as a nation do not work to close this gap, poverty and racism will continue and potentially grow. We must help those less fortunate and oppressed work to be able to help themselves and get ahead. Their feelings of being stuck as they look around and see others thriving does nothing for their morale and advancement. Too many feel as if the world is against them...I believe from my research, empowering them with a growth mindset will succeed in narrowing, if not eventually closing that gap.

Limitations in the Project

The focus of my website is on creating a growth mindset classroom because that is a great starting place and something educators have immediate power over. The educational system, like any other system in our country, however flawed, is difficult to change and will take time, effort, perseverance, and evidence of success. The ideal is that whole schools begin to adopt a growth mindset, which is why I would like to teach educators and administrators about it and its benefits during professional development days. I know it is an active mindset in the northeast region of our country and I would love to make it such in the southeast region, where schools have a reputation of being behind. At this point, I am not sure what other U.S. regions' schools look like beyond hearsay, but I am sure at some point my research and work will reach beyond what I am familiar with currently.

Once I begin to share the website and teach others how to apply this positive, empowering belief system, I will learn if and where it needs to be tweaked to make it easier to implement. Since my motto is, *grow, learn, and change*, I will be happy to make any adjustments to what I am teaching and doing to make it better. I view it as a fluid, ever growing project, which adds to the passion I feel for it! I did already reach out to my district's Superintendent via Email with the first three chapters of my thesis, as I know they plan to begin a social-emotional program soon. I received a call back the next morning and they are awaiting my finished website for further review.

Directions for Future Research

As I explained in my summary, my plans include the development of a company and career based on the growth mindset. Now that my thesis and website are complete, I plan to reach out to all the nearby/SE school districts in an effort to share my website and teach *how to create a growth mindset classroom/school* during professional development days. I also plan to reach out to the Department of Education in Raleigh to offer any assistance I can give in helping to transform education in North Carolina, where reform is in its infancy. I will research how to start an income-producing blog and begin that process, by starting one that teaches about all things growth mindset, for both educators and parents. Additionally, I plan to write my first book titled: *The Growth Mindset Daily Journal*, which will have 365 growth mindset related quotes, one for each day of the year, an explanation for each, how to apply each to one's life, and lastly space for one's own notes/thoughts/ideas. My hope is to make a positive impact in the field of education and thus in the lives of many.

My personal research on this topic has only just begun! If I am to be considered and respected as an expert in the field of the growth mindset, I need to research and read everything I

can find on the growth mindset. I also want to reach out to my favorite authors, such as Dweck, Duckworth, and Ricci, and share my website and hopefully get their feedback and ideas. All the facets of my business will be constantly evolving as I learn more.

There are three areas where I see a need for future research. First, what else can be done as students transition from elementary to middle school and from middle school to high school to support them? Research shows that the growth mindset drops off in both students and educators as their grade level increases (See the graph in Appendix A). If having a growth mindset is seen as beneficial for adults in their careers, why would anyone think it is needed less and less as students get closer to graduating and entering their career fields? Intentionally teaching a positive and empowering attitude is never not needed and necessary, so why the drop off?

Second, how can we get older students to buy-into this positive, beneficial way to look at what they think and how they act? If older students have not been exposed to it, they very well may be skeptical when they are asked to view the power they have over their learning and life in a different way, especially if they hold a strong fixed mindset and/or are on the low side of the achievement gap. All too often, it seems to be considered cool not to study and do homework; that perception must be altered. Students need to understand that their education is preparation for their lives and futures, and something not to be taken lightly.

Lastly, our educational system, like all our systems, is incredibly hard to change, as one can see through past Presidents in this country who believed they could change politics. It seems our systems are slow to listen to new ideas and slow to change old ones, yet the world is growing and changing rapidly since the introduction of technology in the last part of the 20th Century and its continuous growth since. When I was studying for my Master's Degree in Social Work there was a great deal of focus on the systems in this country, on their brokenness and need for reform.

At that time, I became impassioned with what I could do and what needed to be done to help fix those many and deep-running problems; what I am currently working on is an extension of that I am excited to delve into. I am more than willing to be one of the people who stands in front of Congress at some point and fights for educational reform.

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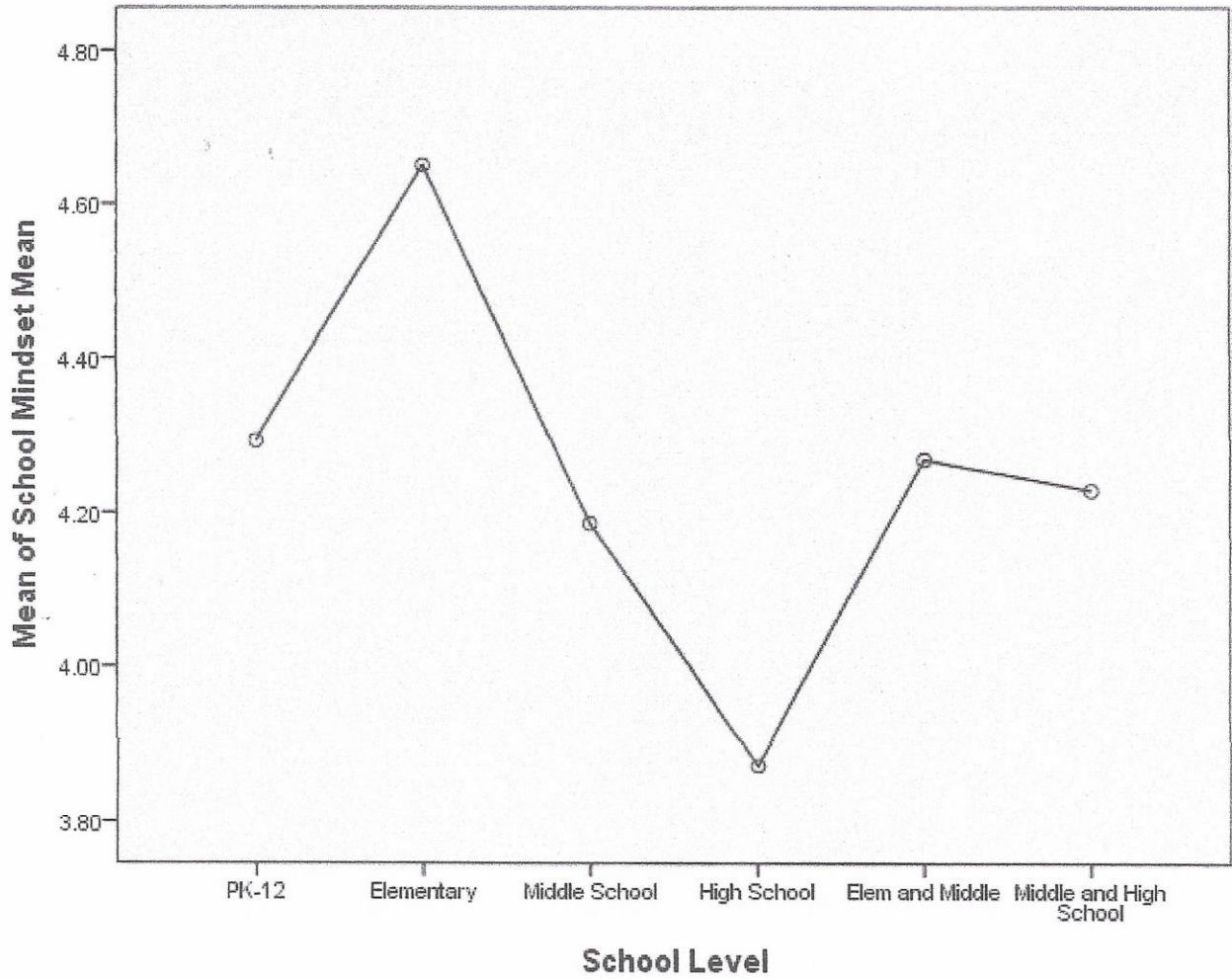
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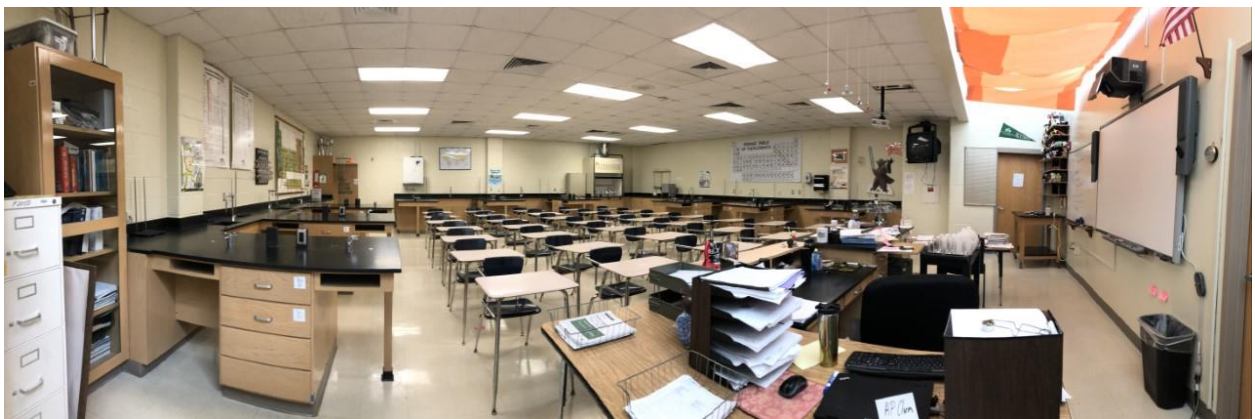
Appendix A

**Hanson, Ruff, and Bangert's (2016) Graph:
Teachers' Growth Mindset Decreases As Grade Level Increases:**



Appendix B

Fixed and Growth Mindset Classrooms (by Appearance)





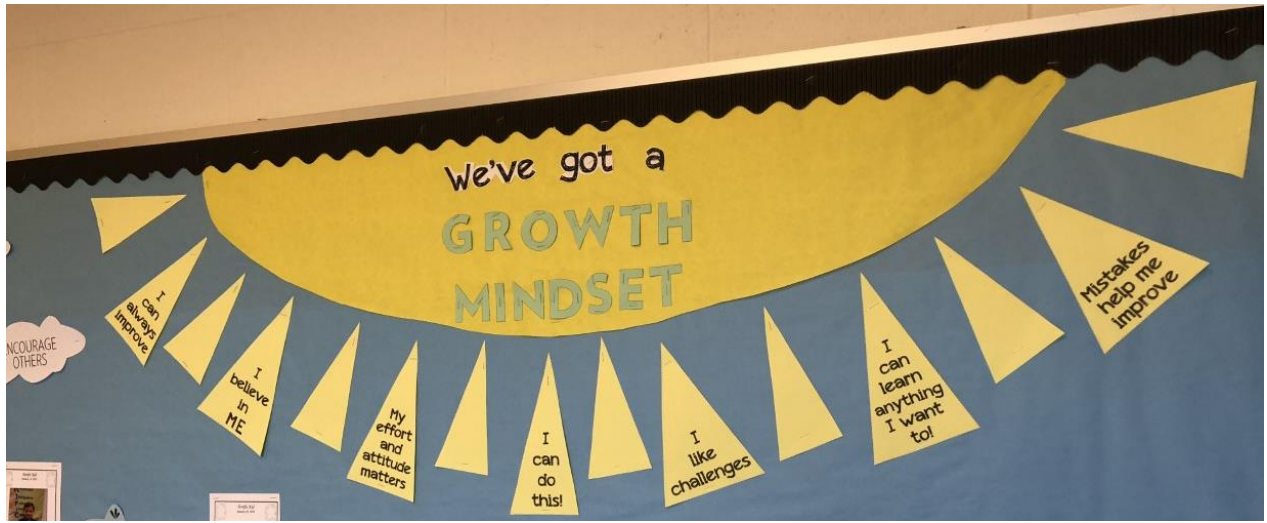


Let's Show Some Grit + Growth...

Instead Of Thinking...	Try Thinking...
I'm not too good at this.	What can I do differently?
I give up.	I'll try another strategy.
Oh... This is good enough.	How can I make this better?
I can't make this better.	There's always a way to improve.
This is too hard.	I'll put in more time + effort.
I can't.	I can.

... YET

THE MOST	POWERFUL	ADDITION
I don't get it	+ Yet	= Optimism
I can't do this	+ Yet	= Perseverance
I'm not good at that	+ Yet	= Growth Mindset



GROW

COOPERATE

ENCOURAGE

IMAGINE



triumph

THINK

share

contribute

love

SOLVE

reflect

discover

LEAD

FORGIVE

inspire

OVERCOME

INNOVATE

inform believe

COLLABORATE

CREATE

connect

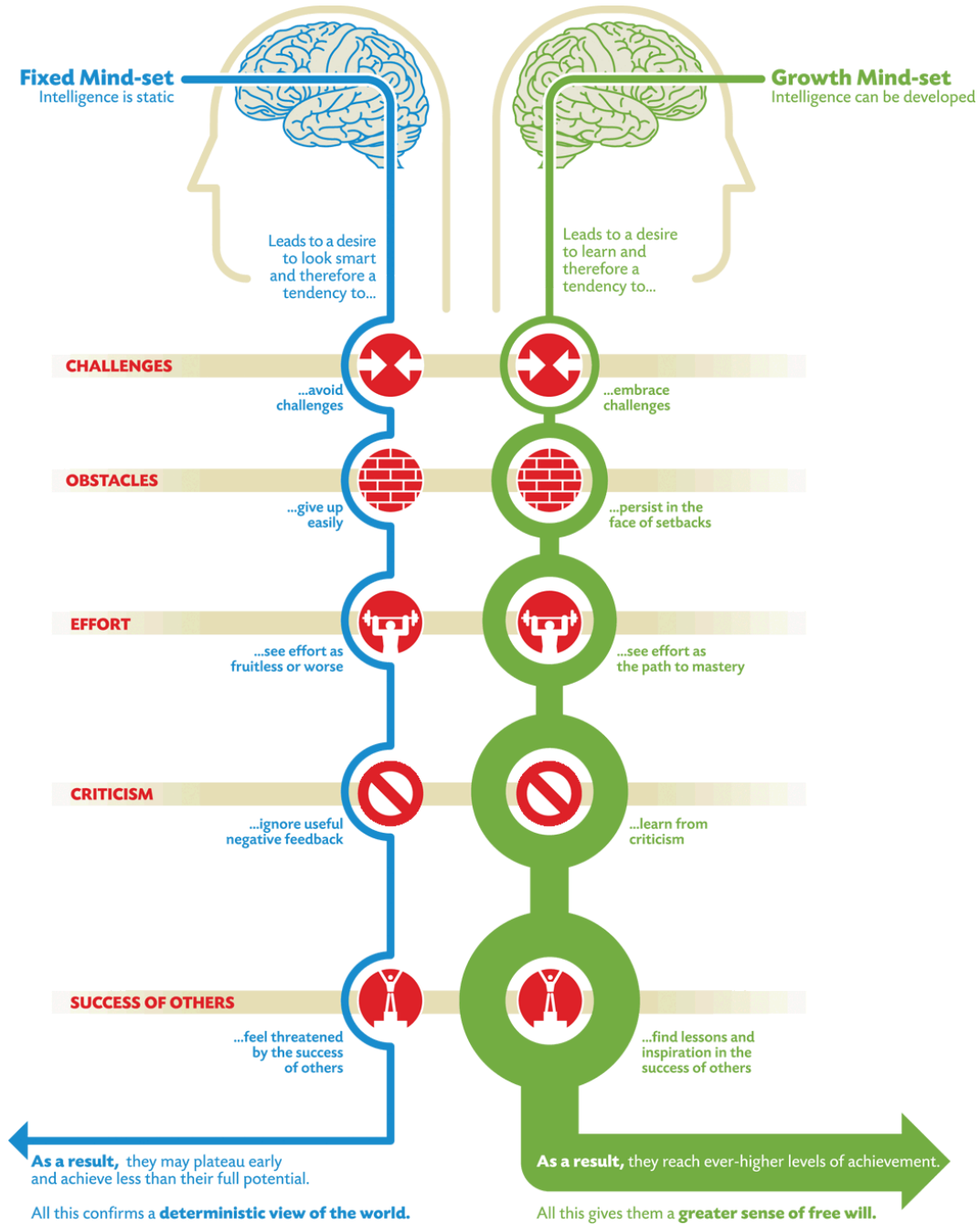
explore

hope

RESEARCH

Appendix C

Dweck (2006): Growth and Fixed Mindset Diagram



Appendix D

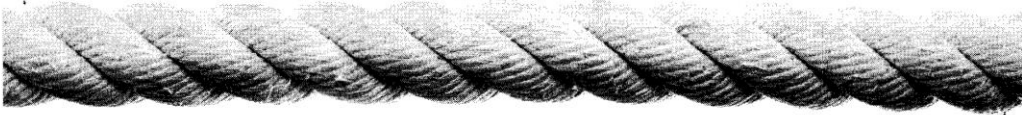
Ricci (2015): Brain Connections Grow and Get Stronger

My Connections . . .

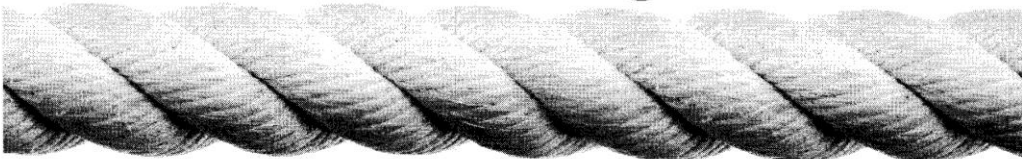
New



Not yet . . .

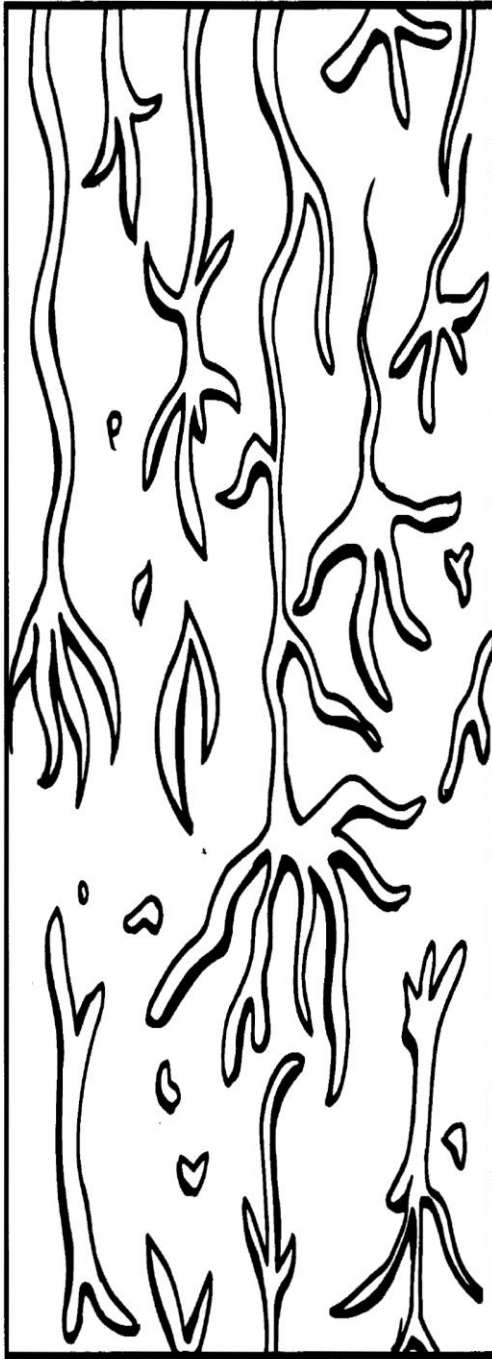


Strong



**I try, I practice,
I GROW!**

Diagram of How Neurons Change From Birth to Age 7



Birth



Age 7

Appendix E
Website Logo



THE GROWTH MINDSET
CLASSROOM