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## Educating the Whole Child: Using Positive Adult Relationships to Develop Noncognitive Skills in Students Facing Adversity

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## **Abstract:**

Under-resourced children often experience multiple stressors in their everyday lives that can negatively impact their performance in schools. However, numerous research studies have shown that the most significant protective factor for under-resourced children is a caring, adult relationship. This study focuses on what needs to happen in the teacher-student relationship in order for the teacher to be that protective relationship. Building the teacher-student relationship aids all children, not just under-resourced children, in developing the academic, social and emotional skills necessary to be successful in the classroom. Development and presence of academic perseverance and an academic mindset of students are the two central skills analyzed and integrated into this study to support teachers in better educating the whole child.

## **Dedication:**

John Saurine for showing me the value of teacher-student relationships and the power education holds; Martha Saurine for living my research as a justice-seeking teacher; Elaine Jansen for being a significant adult relationship to me and for always editing my papers. Finally, to Abigirl, Gilbert and Mwila for motivating my work so my research will one day reach your world.

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## **Chapter 1: Introduction**

The research study on educating the whole child is done through the lens of Catholic Social Teaching which calls people of faith to action. As a researcher in the field of education, this research posed itself as a moral obligation coming as a response to accumulated knowledge of the injustices in our society surrounding the youth in the world, particularly the most vulnerable and how they have been failed in the educational system.

This study focuses on the needs of all children in the classroom; however, there is a particular emphasis on those who come from under-resourced situations. Through the development of particular noncognitive skills and the fostering of supportive adult relationships, research shows that we can care for these children in a special way as educators. The goal of this research is to not only learn how to better support students in the classroom, but to learn how educators can assist, and should assist, students in building the skills they need to thrive beyond the classroom and reach their fullest potential in life.

### **Discussion of the Problem**

While the United States has one of the strongest economies in the world, there is 20% of its youth that grows up in poverty. Growing up in poverty creates obstacles for development and thriving, which more affluent students often do not have to experience. Education is crucial in order to have a chance to escape the cycle of poverty that is so prominent in the United States. However, the pathway to a quality education is overshadowed by the end result alone: GPAs, test scores and national standards. A teacher can do so much more than merely give tests and grades. A student needs to have a

reason to work for those test scores; a student needs to have someone to help them acquire the strategies necessary to get there. A student needs perseverance, grit, determination and tenacity. They need a mindset that reinforces the belief that they are strong, capable and necessary. Teachers have the ability to aid students in cultivating those beliefs and attributes that help them find a reason to work toward the end goal of education and thrive as human beings. The purpose of this literature review is to present ways in which adults, particularly educators, can help under-resourced children succeed through the development of noncognitive skills fostered through relationships. Understanding how educators can lead under-resourced and impoverished youth to the path that leads to success is crucial for the future of our nation's youth.

Poverty as it affects the outcome of children is nothing new. In 1964, President Lyndon Johnson proclaimed a War on Poverty with the intention to provide funding to programs that would work to alleviate and prevent poverty. Additionally, there was a push to provide people with quick access to jobs that required minimal skills (Babcock, 2014, p. 4). In 1968, the minimum wage was \$1.60/hour, which is the equivalent of \$10.56/hour today. "Because the minimum wage is not indexed, the difference between the price-indexed level of \$10.56 and actual level of \$7.25 represents an erosion of more than 31 percent in the minimum wage" (Babcock, 2014, p. 4). The earnings from a full-time, low-wage job can no longer cover the average rent of a two bedroom apartment in the nation's lowest-cost urban neighborhoods (Children's Defense Fund, 2014).

Today, conditions are relatively unchanged; many families are living in poverty struggling to make ends meet. Among all age groups, children are the most likely to be poor. "Every fifth child (16.1 million) is poor, and every tenth child (7.1 million) is

extremely poor. Children are the youngest age group and the younger they are the poorer they are” (Children’s Defense Fund, 2014, p. 4) When a child is poor, that child is in the perfect place to continue the devastating cycle of generational poverty and to experience all the negative outcomes that come with poverty. For example, children of poverty are more likely to be homeless; “homeless children are more likely to go hungry, with one-third reporting that they skip meals; they are more than twice as likely as middle-class children to have moderate or severe and chronic health problems; and are more than twice as likely to repeat a grade in school, to be expelled or suspended, or to drop out of high school” (Children’s Defense Fund, 2014, p. 28) Additionally, children of poverty experience a “lack of early school readiness; poor school performance and social and emotional development in middle childhood; lower grades, higher crime convictions, and pregnancy in teen years; and lower college completion, earnings, and independent household formation in young adulthood, which cumulatively severely impair the ability to attain economic independence in adulthood” (Babcock, 2014, p. 6). Poverty is affecting the way children develop, which in turn affects how they learn and keeps them from truly flourishing as individuals.

In addition to the many obstacles listed, one of the most significant obstacles to learning of children of poverty is what researchers call “toxic stress.” The Crittenton Women’s Union and Harvard’s Center on the Developing Child have both included the brain science of poverty in their research, which is largely connected to education. The human body naturally reacts to stimuli that are considered “stressful” to the body, and this stress response is completely normal. The prefrontal cortex of the brain is the area of the brain associated with many of the analytic processes necessary to solve problems, set

goals and effectively execute plans. This part of the brain receives signals on how to act from the limbic system, which triggers emotional reactions to environmental stimuli (Babcock, 2014, p.6). Additionally, the brain produces certain chemicals, such as adrenaline and cortisol that cause a physiological response to stress. However, the trouble occurs when these chemicals, specifically cortisol, are activated for extended periods of time. Babcock highlights the implication of this overreaction and says, “when the limbic brain is overactive and sending out too many powerful brain signals of desire, stress, or fear, the prefrontal brain can get swamped and the wave of emotion can drown out clear focus and judgment” (2014, p. 6). Taking in new learning material in class is an insurmountable task because the brain is unable to clearly focus on the task at hand. Harvard’s Center on the Developing Child says, “if this so called ‘toxic stress’ continues and is not mitigated by adequate adult support, it can literally rewire children’s brains, disrupting their social competence and ability to succeed in school and in life and increasing the likelihood of low educational achievement, unstable employment, adult poverty, and involvement in the criminal justice system” (2015, p. 2). For students in school, this hyper activation of the stress response can cause impulsive decision making and can cause a child to become overwhelmed and to shut down. As a result, these students struggle to find the energy to become interested in coursework (Duncan-Andrade, 2015). Stress for children of poverty is constant and has lasting effects in the classroom and later in life.

Entering school far less prepared than their more affluent peers is an additional obstacle to learning. It is important for children to have “serve and return” conversations, meaning the caregiver asks questions or begins conversations that call for a child to have



a well thought out response (Babcock, 2014). This seems like a fairly simple task for a parent. However, low-income parents often spend more time away from their children because they are juggling multiple jobs, spending significant periods of time in transit, searching for secure housing or navigating complex public-assistance bureaucracies (Shanks & Robinson, 2011). Children whose parents are constantly working to make ends meet miss out on critical time with their parents which leaves them struggling as they enter school. “By the time a child in a very low income family reaches age 4, she will have heard only two words for every seven that a child in a higher-income family has heard. By the time children in families with very low incomes enter kindergarten, they are 12 to 14 months behind in language and pre-reading skills, compared with children in higher-income families, where reading books and engaging in regular conversations with adults help build much larger vocabularies” (Hart & Risley, 2004). A child who is a low-income kindergartner is already starting behind, making him or her more likely to struggle in school, which leads to lower paying jobs and a higher likelihood of that child continuing the cycle of poverty.

As discussed, students’ experiencing toxic stress and lacking many resources are often unprepared for academic situations and teachers are unaware of their ability to be resources for these students. The rest of this study utilizes research suggesting that positive adult relationships are essential for success not only in the classroom, but in life. Additionally, there is a larger focus on what happens in these positive child-adult relationships and how they are able to develop certain skills, called noncognitive skills, in order to push students to better understand their abilities and reach their goals.

This research focuses on two specific noncognitive skills to be fostered in educator-student relationships called grit and growth mindset. Further research on these skills will be discussed in Chapter 2 and with the goal of answering the following research question: *What is the correlation between having a strong adult relationship and grit and what is the correlation between having a strong adult relationship and growth mindset? Additionally, what is the correlation between grit and growth mindset?* The school setting, research design and data setup are discussed in detail in the following chapters in order to effectively articulate the process of the research question. It is hypothesized that if a student has a strong growth mindset, they are more likely to have reported at least one significant adult relationship. Additionally, if a student is “gritty,” the student is more likely to have a growth mindset and may or may not have a significant adult relationship. An explanation of these questions and predictions will be explained and discussed in later chapters.

### **Definition of Terms**

For the purpose of this study, the following terms will be used:

Noncognitive skills: Also known as soft skills. These are skills separate from intelligence and academic skills. For example, goal setting skills, time management skills, study skills, organizational skills, effective communication, self-control, etc. are all considered noncognitive skills in this research study.

Grit: A term developed by researcher Angela Duckworth, Ph.D. This word is synonymous with determination, perseverance and tenacity. It is the ability to keep moving when situations in life become difficult.

Growth Mindset: A term developed by researcher Carol Dweck, Ph.D. This is a person's mindset. It is one's belief that their intelligence can be developed and learned.

Poverty: For the sake of this research, poverty will be defined using federal poverty guidelines. The United States Department of Health and Human Services defines poverty using simply income and no other factors. For example, a family of four with an income under \$24,600 in 2017 is considered to be living in poverty.

Under-resourced: This term is used to refer to children who have come from situations of possible poverty; however, this term also includes the other factors associated with a low-income family such as low parent involvement, few academic resources, food deserts and food insecurity, unsafe neighborhoods, etc.

## **Limitations and Assumptions of the Study**

Students were surveyed using tests created by the student researcher and also assessments created by Angela Duckworth, Ph.D. and Carol Dweck, Ph.D. The results of these surveys provide qualitative research that can be analyzed using the SPSS system.

It is understood in this research study that not every student living below the poverty line experiences this type of stress or that this poverty is strictly in the urban core. Additionally, it is not assumed that every student experiencing this type of toxic stress is failing in academics. The research done in this study was inspired by and focuses on putting the needs of the most vulnerable students first; however, the research done

here can be used for all struggling students, not just those who come from a situation of poverty.

The students surveyed in this study are from a school where relationships are intentionally fostered and believed to be important for the success of students. Additionally, one of the requirements of the school surveyed is that students come from families making less than the federal poverty level so there may already be systems in place at the school to combat potential situations of stress for students living in poverty. The sample size of the students was fairly small. The students were not able to be sampled all at one time.

Finally, this is an undergraduate thesis meaning the resources and willingness of schools to participate was very small. The limitations of this study are important to consider; however, they do not contaminate the validity of the research.

### **Summary of the Chapter**

This research study attempts to find ways to assist students facing significant adversity in their lives in accomplishing academic goals and finding success in schools. Research has shown that there are various factors contributing to this; however, noncognitive skills are essential to develop for these students. Grit and Growth Mindset are the two noncognitive skills that are the focus of this study. Additionally, noncognitive skills cannot be developed in many students without significant adult relationships that assist them in the development of certain skills. This research study attempts to show how significant adult relationships are in the development of essential academic and noncognitive skills in the lives of young people.

The official research question for this study was: *What is the correlation between having a strong adult relationship and grit and what is the correlation between having a*

*strong adult relationship and growth mindset? Additionally, what is the correlation between grit and growth mindset?*

These questions will be answered through the development and distribution of a survey which results in quantitative values regarding relationships, grit and growth mindset. These values will be analyzed using the Pearson Correlation by means of the Statistical Package for Social Science and will produce three different numbers to answer all three research questions listed above. These results will show the significance of grit and growth mindset through the lens of adult relationships in the lives of students facing adversity.

## **Chapter 2: Literature Review**

Though the tremendous amount of adversity under-resourced youth experience is often overwhelming, there is research that heavily supports the definite necessity of relationships in the lives of youth. The Crittenton Women's Union, Harvard's Center on the Developing Child, and multiple other individual researchers have shown that the most protective factor for a child to be resilient when facing adversity is a stable, caring, committed, adult relationship (Center on the Developing Child, 2015). All it takes is a single, strong and significant relationship in order to help a child of poverty overcome the multitude of hurdles standing in the way, including challenges presented by the home environment. Educators are the adults children see most often besides caregivers. Educators have the privilege and the power of potentially being that crucial relationship.

Though the research is clear that a strong, adult relationship is necessary, it is not always clear as to what is involved in that relationship. However, the Search Institute, an organization dedicated to learning what children need to succeed, is in the process of creating a framework for what is called a developmental relationship. A developmental relationship is a connection between a young person and an adult or peer, which "positively shapes the young person's identity and helps the young person develop a thriving mindset" (Search Institute, 2015b, p.1) and aids young people in attaining the "psychological and social skills that are essential for success in education and in life." (Search Institute, 2015b, p.1). The Search Institute, and a multitude of other researchers, says that these relationships are important because "the number and intensity of developmental relationships in young people's lives is linked to a range of positive educational outcomes... and can increase student engagement and improve academic

motivation.” (Search Institute, 2015a, p.1). This relationship framework is especially important for educators because the relationship described can greatly affect student learning and achievement. However, an important point to consider is that this relationship helps students attain “*psychological and social skills* that are *essential* for success in education and in life” (Search Institute, 2015, p.1). Teachers can provide exceedingly vital relationships not only because of the school content they teach, but also because they have the power to be the developmental relationship that encourages these crucial social and emotional skills for success. In fact, children who enter kindergarten with below-average language and cognitive skills, like many under-resourced youth do, are most likely to catch up only if they are physically healthy and have strong social and emotional skills (Vandivere, Pitzer, Halle, Hair, 2004). This is where teachers can help improve the lives of under-resourced youth. Though this is very powerful research, there are some flaws to this theory as well. Students are only with a teacher for one year before they move on to the next grade. In the context of education, there has not been specific or deliberate research in order to address how teachers can extend that relationship. With that in mind, it is important to note that research strongly indicates that students will work harder if they care about what they are doing and will work harder if they care about the person they are working for. This is why educators matter so much to under-resourced youth even in the single year they are with them in the classroom. Teachers have the power to help children see the importance of hard work, effort and school content so they can truly pursue a future where they can flourish; they have the privilege to nurture and form young minds to see failure as a tool for their success instead of an indication of their

incompetence. In other words, teachers are in a unique position to aid students, especially under-resourced students, in developing what are called “noncognitive skills.”

Research on noncognitive skills shows high-test scores and GPA are not what defines a student as successful or intelligent. In fact, a study done by Geiser and Sanelices (2007) at the University of California found that “high school grades were a stronger predictor of both college GPA and likelihood of college graduation than students’ SAT scores, class rank and family background” (Farrington, et. al, 2012, p.4). This is true because grades “reveal qualities of motivation and perseverance as well as the presence of good study habits and time management skills. It is these qualities, more so than content knowledge, that signal which students are likely to excel in their studies and persevere in their schooling” (Farrington, et. al, 2012, p.4). Whether a child has been labeled as “smart” by a standardized test or whether a child comes from an under-resourced, low socioeconomic situation has nothing to do with how successful this child will be. Benjamin Bloom, an educational researcher who studied high achievers, said that even by early adolescence future accomplishment cannot be predicted from current ability, and only continued motivation and commitment, along with their network of support took these achievers to the top (Dweck, 2012). Far more than results of previous tests or the situation a child comes from, what matters most for students are relationships nurturing skills such as motivation, perseverance, time management skills, study skills, mindset, etc. These are the noncognitive skills necessary for a child that teachers can help cultivate in their students in order for children to succeed in school and in other important aspects of life.



Though there are countless skills labeled as “noncognitive skills” there are five that have been identified as being the most important for educational attainment. The University of Chicago Consortium on Chicago Research (CCSR) and the Raikes Foundation produced a critical literature review on the importance of certain noncognitive factors for academic success. The development of these skills is not just important for the success of children of poverty but can be useful for all students. CCSR’s “five general categories of noncognitive factors related to academic performance: 1) academic behaviors 2) academic perseverance 3) academic mindsets 4) learning strategies and 5) social skills” (Farrington, et. al,2012, p.6).

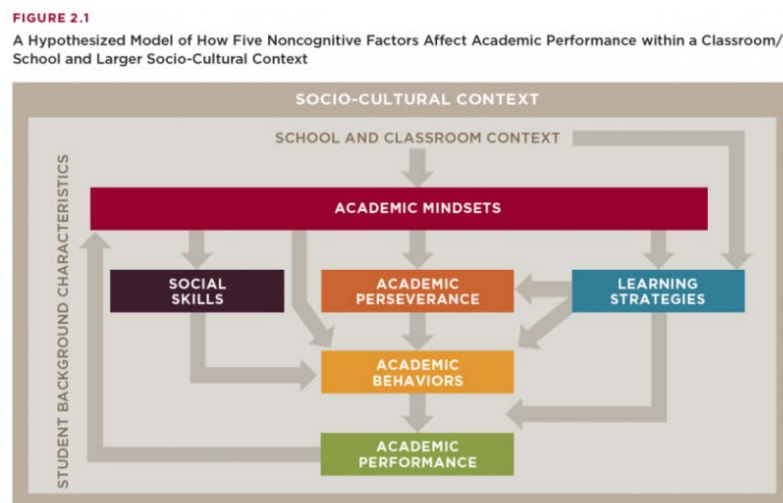


Figure 1: Farrington, C.A., Roderick, M. Allensworth, E. Nagoka, J., Keyes, T.S., Johnson, D.W., & Beechum, N.O. (2012). Teaching adolescents to become learners. The role of noncognitive factors in shaping school performance: A critical literature review. Chicago University of Chicago Consortium on Chicago School Research.

These are the skills that educators can help develop. CCSR created a flow chart (Figure 1) that illustrates how the five noncognitive skills work together and affect academic performance. The goal is the green box, strong “academic performance.” Academic performance is measured by the yellow box, “academic behaviors,” and quantities such as GPA and grades. Academic behaviors are “those behaviors associated with being a

‘good student’” (Farrington, et. al, 2012, p.8). For example, coming to class with proper materials, paying attention in class, studying, regular class attendance, etc. are strong academic behaviors. These are “visible, outward signs that a student is engaged and putting forth the effort to learn” and it is “how students develop and demonstrate their content knowledge and academic skills” (Farrington, et. al, 2012, p.15). The other four noncognitive factors, all work together and lead to stronger academic behaviors, which in turn lead to stronger academic performance.

Again, all five noncognitive factors work together and are necessary in order to help students achieve higher academic goals. However, for the purpose of this study, the two noncognitive factors that will be focused on the most are “academic perseverance” and “academic mindset” because of the strong mutually reinforcing relationship between the two. The factors of perseverance and mindset have received strong evidence and support in research exploring their importance in the classroom (Farrington, et. al, 2012, p.15).

Academic perseverance is a “student’s tendency to complete school assignments in a timely and thorough manner, to the best of one’s ability, despite distractions, obstacles or level of challenge” (Farrington, et. al, 2012, p.9). There are many different terms related to “academic perseverance” such as resiliency, delayed gratification, self-discipline, self-control, academic tenacity, and grit. Angela Duckworth, a researcher at the University of Pennsylvania in the department of Psychology, has published information on “grit” widely accepted by the education community. Her research on grit and perseverance has been crucial for the understanding of the importance of perseverance when trying to accomplish goals, specifically in the classroom. She claims

that grit is having the stamina to work hard, day in and day out, no matter what (Duckworth, 2013). It is working hard to achieve a long-term goal (Farrington, et. al, 2012, p.21). Grit is a skill necessary to complete work when it seems overwhelming or useless, it is a skill that athletes, academics, students and all people need in order to overcome obstacles. Grit keeps a person moving forward when instinct tells a person to stop.

In order for a student to be “gritty” in the classroom, they have to have the self-control in order to do so. Self-control is the student’s ability to “avoid impulsive behavior and fulfill *short-term* obligations” (Farrington, et. al, 2012, p.21). If a child does homework instead of watching T.V. or studies instead of going out with friends, this child is exercising proper self-control. Grit is having the ability to exercise self-control every day, no matter the obstacles.

Duckworth claims grit is more important for success than a student’s innate ability to succeed in school. In a recent TED talk, Duckworth talked extensively about how the educational community needs to understand learning from a motivational perspective. IQ, test scores and GPA are some of the skills schools know how to measure most accurately because academic indicators are easily measured. However, similar to the previous studies mentioned, Duckworth and her team spent time studying successful people and found that intelligence and IQ do not necessarily mean success. She said:

My research team and I went to West Point Military Academy. We tried to predict which cadets would stay in military training and which would drop out. We went to the National Spelling Bee and tried to predict which children would advance farthest in competition. We studied rookie teachers working in really tough neighborhoods, asking which teachers are still going to be here in teaching by the end of the school year, and of those, who will be the most

effective at improving learning outcomes for their students? We partnered with private companies, asking, which of these salespeople is going to keep their jobs? And who's going to earn the most money? In all those very different contexts, one characteristic emerged as a significant predictor of success. And it wasn't social intelligence. It wasn't good looks, physical health, and it wasn't IQ. It was grit (Duckworth 2013).

Duckworth's main argument is grit predicts success more than talent. Duckworth even went into schools and measured grit against characteristics such as family income, standardized achievement test scores and how safe kids felt when they were at school, and found grittier kids were significantly more likely to graduate. Being "gritty" is necessary to be successful at anything, including school. So when it comes to academics, it seems that educators should not be focusing only on a child's intelligence and test scores. Nurturing students to become "gritty" is what is going to make them successful. However, the question is, "how do we create gritty students?" Duckworth says that the best idea she has heard so far in helping to developing gritty kids has come from the University of Stanford's Carol Dweck (2013) on the development of a "growth mindset."

Academic mindset is the second noncognitive skill related to academics, which is foundational for learning. Dweck has made incredible strides on changing the way educators, parents and athletes view the power of mindset. In Dweck's book, *Mindset: The New Psychology of Success*, she says a growth mindset is "based on the belief that your basic qualities are things you can cultivate through your efforts.... A person's true potential is unknown (and unknowable); that it's impossible to foresee what can be accomplished with years of passion, toil and training" (2012, p. 7) Additionally, "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" (2012, p.7) With this definition of mindset, it is easy to understand how academic perseverance and academic mindset have such a strong reciprocal relationship. For example, if a student keeps failing history tests, this student is not going to get better without gritting his/her teeth and continuing to work hard through the tough times. Moreover, the student isn't going to power through the tough times if he/she does not have the proper mindset to stay motivated in order to finish the class successfully. Mindset and perseverance/grit are two crucial noncognitive skills that need one another. The mindset a person adopts for themselves will greatly affect the way they lead their life and how they persevere (Dweck, 2012, p.6). The important question for educators now is, "how can I help cultivate a growth mindset in my students?" Developing a growth mindset is one of the most significant ways educators have been cultivating a positive academic mindset in students.

In order to help create a growth mindset in students, it seems that teachers almost need to adopt a growth mindset themselves. Teachers need to believe that every student can do well. In her book, Dweck talks about a teacher named Jaime Escalante who went into one of the worst high schools in Los Angeles and taught inner-city Hispanic students college-level calculus and eventually took them to the top of the national charts in math. Dweck said, "With his growth mindset he asked, '*How* can I teach them?' not '*Can* I teach them?' and '*How* will they learn best?' not '*Can* they learn?'" (2012, p. 64). This teacher knew that these students were capable of more than what they were given credit for, and he used that to help them succeed.

In addition to educators themselves having a growth mindset, it is important to be aware of the mindset teachers are promoting in students. The opposite of growth mindset is a fixed mindset which can be dangerous in the classroom. A person with a fixed mindset is someone who believes his/her intelligence, traits and talents are “fixed” and nothing can change those innate talents. These people are afraid of challenges because they are afraid they will look bad if they fail (Dweck, 2012). Fear of being incorrect in a classroom seems as if it is a miniscule problem, but this fear of failure is strongly connected with a fixed mindset that is incredibly powerful in preventing students from being “gritty” and pushing forward in their educational aspirations.

In order to properly display the power of mindset and how it can be preventative or supportive to learning, Dweck did a study with 4-year-olds. She gave the student an easy jigsaw puzzle. After the students finished the given the jigsaw puzzle, they had the option of trying a newer, harder jigsaw puzzle or the same jigsaw puzzle they had already completed. The children with the fixed mindset chose the same jigsaw puzzle because they knew they couldn't fail while students with the growth mindset chose the new jigsaw puzzle because it provided a challenge and an opportunity to learn (Dweck, 2012). People with a fixed mindset see obstacles as indications of failure instead of opportunities to thrive. This mindset can negatively influence the classroom. Fixed mindset students may be afraid to answer questions in class because they don't want to be wrong. They also don't want to put in any effort because if a concept doesn't come naturally that must mean they aren't smart enough to understand. The key for teachers in the classroom is to help students understand failure differently and to help them develop the kind of mindset that enables them to thrive. Dweck has proven how this noncognitive skill is essential for

not only academic success, but also the overall success of a child in fulfilling their potential.

One of the most significant ways teachers can influence mindset is through the use of language, specifically how students are praised. Dweck says that educators need to praise effort and process, not outcomes or innate abilities. If a child grows up being told he/she is smart, there is a chance that child will not feel it is necessary to work hard because finding a task challenging is an insult to his/her intelligence. Dweck says adults should praise children for qualities they can control such as effort. Those praised for their innate brainpower might develop the sense that hard work isn't necessary (2012). Expressing pride in a child for working hard will help that child much more than expressing pride in them for being smart. If students are praised for their hard work they are more likely to repeat that behavior but praising a child for how "smart" they are means they will work to maintain that image of smart. So in the classroom it is important to be aware of not only the way failure is addressed, but also the way success is addressed. Educators can have a very significant influence on children and their mindsets simply through the way a teacher praises a student.

## **Literature Review Conclusion**

Poverty has a significant negative impact on the development and academic success of a student; however, how teachers build relationships with those students can develop noncognitive skills that can be of monumental importance for their future ability to thrive. Teachers have a tremendous amount of influence on the lives of their students and are one of the most significant adult figures children have, especially when coming from a background of poverty. It is important for teachers of under-resourced youth to be

aware of the influence they have so they can learn to provide necessary support, encouragement and motivation. Teachers have the power to be the relationship that helps equip students with the noncognitive tools they need in order to approach academic work with the mindset associated with the determination to succeed and the drive to persist in times of frustration. Educators cannot merely teach content and believe that is a job well done. Teachers need to be a source of strength and understanding for students in addition to a source of knowledge. They need to focus not on a student's struggles and impossibilities, but rather focus on a student's potential, focus on developing the skills a child already has so they can eventually develop the skills they don't have. Simply creating a classroom environment that welcomes failure instead of condemns it, and celebrates improvements and hard work instead of the end results can make a substantial difference in how students approach academic work. Finally, under-resourced students need the type of teachers who focus not on developing content-based knowledge alone, but focus on the development of the human person as a whole; moreover, they need teachers who are under the permanent impression that every single child is capable of fulfilling their potential.



## **Chapter 3: A Methodological Plan**

### **Research Question Review**

The purpose of this chapter is to discuss the procedures used to answer the research question of: *What is the correlation between having a strong adult relationship and grit; what is the correlation between having a strong adult relationship and growth mindset; and what is the correlation between grit and growth mindset?* The school setting, research design and data setup are discussed in detail in this chapter in order to effectively articulate the process of the research question.

This question is relevant for those who prepare teachers and those who offer professional development for in-service teachers because it not only shows the importance of noncognitive skills for academic success; it also shows the importance of relationships in the development and presence of noncognitive skills in young people. This research has the potential to contribute to the research on noncognitive skills, which are already deemed vital by the larger research community, which will bring teachers, coaches, parents, etc. one step closer to having the tools necessary to develop the essential skills necessary for a student's success in school and for the rest of life.

### **Setting**

The study takes place in an urban four-year charter high school with approximately 430 students. All first-year students participated in the 15 minute survey distributed by the student researcher, an undergraduate student in the Teacher Education

Department. The students used their advisory period in order to come to a common area of the school to take the test in a relatively controlled environment.

The public high school has a high percent of free and reduced-price breakfast and lunches. The question has significance to these populations of students because free and reduced-price meals are given to students whose family income is below the federal poverty line. Because one of the research questions addresses the needs of students who are growing up facing significant adversity and/or poverty, it is important to analyze a school with a high percentage of students who are statistically more likely facing adverse outcomes based on the high percentage of students receiving free or reduced-price lunches. However, this does not necessarily mean every student surveyed lives in poverty or has faced extreme adversity.

The survey itself was distributed in a common area of the school where students visit every day. It was a comfortable place and each student had a seat at one of the three large tables where the surveys were distributed.

## **Research Design**

This is a mixed methods study using both qualitative and quantitative themes. The students are given three different papers. One paper has the Grit Assessment Scale (Appendix), developed by Angela Duckworth, Ph.D., with 12 questions about their perseverance in school, projects and other daily activities. Once the students answer all of the questions, the survey answers can be analyzed in order to produce a single, quantitative number which represents a specific level of “grittiness” on the scale with 1 being not gritty at all and 5 being very gritty. This number quantifies the student’s perseverance. Grit Scale Assessment Criteria:

Scoring:

1. For questions 1, 4, 6, 9, 10 and 12 assign the following points:  
 5 = Very much like me  
 4 = Mostly like me  
 3 = Somewhat like me  
 2 = Not much like me  
 1 = Not like me at all
  
2. For questions 2, 3, 5, 7, 8 and 11 assign the following points:  
 1 = Very much like me  
 2 = Mostly like me  
 3 = Somewhat like me  
 4 = Not much like me  
 5 = Not like me at all

Add up all the points and divide by 12. The maximum score on this scale is 5 (extremely gritty), and the lowest scale on this scale is 1 (not at all gritty).

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Duckworth, A.L., Peterson, C., Matthews, M.D., & Kelly, D.R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 9, 1087-1101.

The second paper had the Mindset Assessment Profile, developed as a result of Carol Dweck's Ph.D. research, which has 8 questions relating to the mindset of the student when facing challenges. Once the student has answered the questions, the answers can be analyzed in order to produce a single quantitative number which represents the student's location on the "growth mindset" or "fixed mindset" scale.

A student with a score of 25-28 is an "F1" which is a level one fixed mindset and a student with a 29-32 is a "G1" which is a level 1 growth mindset; both of these mean a student is "unsure about whether you can change your intelligence. You care about your performance and you also want to learn, but you don't really want to have to work too hard at it." The highest a student can score on the Mindset Assessment Profile is a 45-48 which is a "G5" or a level 5 growth mindset which means "you feel really sure that you can increase your intelligence by learning and you like a challenge. You believe that the

best way to learn is to work hard, and you don't mind making mistakes while you do it."

Whereas, the lowest score a student can attain on the Mindset Assessment Profile is an 8-12 which is an "F5" or a level 5 fixed mindset meaning "you strongly believe that you intelligence is fixed- it doesn't change much. If you can't perform perfectly you would rather not do something. You think smart people don't have to work hard." Therefore, the final number on this scale that the student produces is a quantifiable representation of the student's academic mindset.

<b>If your profile number falls into this range:</b>	<b>Then your MAP (Mindset Assessment Profile) group is:</b>	<b>People in this MAP group usually believe the following things:</b>
<b>8-12</b>	<b>F5</b>	You strongly believe that your intelligence is fixed—it doesn't change much. If you can't perform perfectly you would rather not do something. You think smart people don't have to work hard.
<b>13-16</b>	<b>F4</b>	
<b>17-20</b>	<b>F3</b>	You lean toward thinking that your intelligence doesn't change much. You prefer not to make mistakes if you can help it and you also don't really like to put in a lot of work. You may think that learning should be easy.
<b>21-24</b>	<b>F2</b>	
<b>25-28</b>	<b>F1</b>	You are unsure about whether you can change your intelligence. You care about your performance and you also want to learn, but you don't really want to have to work too hard for it.
<b>29-32</b>	<b>G1</b>	
<b>33-36</b>	<b>G2</b>	You believe that your intelligence is something that you can increase. You care about learning and you're willing to work hard. You do want to do well, but you think it's more important to learn than to always perform well.
<b>37-40</b>	<b>G3</b>	
<b>41-44</b>	<b>G4</b>	You really feel sure that you can increase your intelligence by learning and you like a challenge. You believe that the best way to learn is to work hard, and you don't mind making mistakes while you do it.
<b>45-48</b>	<b>G5</b>	

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The final survey the students have is a set of free response questions created by the student researcher. The first question is, "What grades did you mostly receive on your

report card during the 2015-2016 academic year? Circle one answer” and below were bullet points reading “Mostly A’s, Mostly B’s, etc.” The second question states, “Are you involved in clubs, religious organizations, or other activities outside of the classroom? If so, please list the activities from the 2015-2016 academic school year.” The final question is a two part question reading “When you feel challenged by something, need advice or when you are upset, is there an adult you talk to? Circle answers.” Below were seven different adult relationships were listed that students could potentially have. These included, “1. Coach, 2. teacher, 3. grandparent, uncle, cousin, etc., 4. parent, 5. religious minister, pastor, priest, 6. therapist, counselor, etc., 7. other, if other, please explain.” The second part of the question read, “If you selected someone above, why does talking to this adult help you?” For the sake of this study and for answering the research question of, *“What is the correlation between having a strong adult relationship and grit and what is the correlation between having a strong adult relationship and growth mindset?”* only the final question regarding the relationships were analyzed for the quantitative portion of the study. The other two questions were referenced for qualitative supplements for the final quantitative research findings.

<b>Quantitative Result</b>	<b>Student Response</b>
<b>3</b>	<b>Multiple strong adult relationships are reported to be present.</b>
<b>2</b>	<b>At least one adult relationship is reported to be present.</b>
<b>1</b>	<b>No adult relationships are reported to be present but a friend, sibling, etc. was reported as a significant relationship for that student.</b>
<b>0</b>	<b>No significant relationship was reported by the student.</b>

For students who circled more than one relationship as their answer, they were given a 3 which represents “strong adult relationships present.” A 3 would be given to a

student who communicates feelings of strong, consistent support from adults in their life. A 2 is given for students for “at least one significant adult relationship.” A 2 means that a student has given evidence that there is some adult in their life giving support; however, it could be inconsistent and on a much smaller scale compared to a 3. A 1 is given for students who circle “other” and represents “a significant relationship that is not an adult relationship.” A 1 would be given if the student gave evidence of feeling they only support in their life was not an adult but someone such as a friend or sibling. This is different from a 3 because there could be very little consistency and the type of support from a non-adult is different and not what this study is for. A 0 is given for “no significant adult and/or other relationships.” A student reporting a 0 is someone who feels they have no support from anyone, not a sibling, friend or another adult. The higher the number means stronger, more consistent and a higher number of adult relationships in the student’s life.

These three numbers from the Grit Scale, Mindset Assessment Profile and from the Relationship Information all provided a quantitative number in order to succinctly measure the results of the many complex survey questions. The numbers from each survey will allow the researcher to compare the correlation between the strength/presence of noncognitive skills and the strength of adult relationships in the student’s life.

Though this study involves a survey partially developed by professional researchers, there are various limitations to this study. The sample size of the study is very small and focused specifically on one urban charter school. This school is one of the most academically successful schools within the Dayton school district so it may or may not be representative of the larger urban population and the population of students facing

extreme adversity. Additionally, part of this charter school's mission is to develop certain skills necessary for success in education and the teachers are also expected to work on their relationship with the students at the school. Though this could be true of some other schools in the district, the results may or may not be influenced by this school mission. Additionally, the way the final question about relationships was asked may not have allowed students to feel as if they were allowed to respond "no relationship" because there was not a "no relationship" option on the list. Therefore, this partial question may have slightly influenced the results. However, this point reaffirms those students who responded "no relationship" because despite the partial question, they still decided to respond with "no relationship."

Because students were tested during their advisory periods and they are not all in the same advisory period, there were 4 different times of day they were surveyed. Because of this, there could possibly have been slight differences in the way the test was presented by the teachers or how the students' questions were answered. Though there was a script used by the student researchers, the situation could potentially influence the results because of the dynamic of the students in different classes and the time of day students are best able to respond.

Though these limitations in the study exist, it is likely that this study is still representative of the possible results that could come with a more thorough and controlled research study.

### **Subject Selection**

The participants of this study are first-year students at an urban charter high school. Every student who goes to this school lives in the Dayton Public School District. There are a high percentage of students receiving free and reduced-price lunches at this

school. Most of the students were African-American, come from low-income families and qualify for free and reduced-price lunch. The students were surveyed for 10-15 minutes during their advisory period.

The majority of the freshman class was surveyed and there were approximately 60 students who took the exam. They were chosen simply because of their grade in school and nothing else. First-year students were chosen because they are still dependent on their families while at the same time these students are farther into their education and therefore will have had more time to develop significant relationships, participate in extracurricular activities and have the cognitive ability to be able to understand the questionnaire to be given.

Though there was not sensitive information on the survey, the students' anonymity was protected during the entire study. At no point during the process were the student's asked for their names. Every student was handed a numbered survey. The results of the survey were associated with the number on their paper. The teachers never saw the completed surveys; furthermore, the student researcher and the student researcher's advisor were the only additional people to view the surveys.

### **Design of the Study**

The design of this study began with thorough literature review and research on educating children of poverty; moreover, what it took for students to become "resilient" in the classroom. The Search Institute and the Center on the Developing Child, along with various other researchers, have shown that the most protective factor for a child to be resilient when facing adversity is a stable, caring, committed, adult relationship. Additionally, the Search Institute reported that these relationships can "positively shape the young person's identity and helps the young person develop a thriving mindset" and



“helps young people attain the psychological and social skills that are essential for success in education and in life.” These psychological and social skills can also be referred to as noncognitive skills. After much additional research on noncognitive skills, the research was focused on Carol Dweck, Ph.D. and the growth mindset and also Angela Duckworth, Ph.D. and grit. These two noncognitive skills, grit and growth mindset, both seemed to be commonly agreed upon in the field of education as being important for a student’s academic success. Because of this, these two noncognitive skills became the focus of the study and the hypothesis was formed stating, “If a student has a significant, positive adult relationship, the student will have more significant noncognitive skills.” A survey for students was then developed in order to test the students’ noncognitive skills and relationships. Duckworth’s assessment on mindset was used in addition to Duckworth’s grit scale. A free-response question regarding relationships was also developed.

After further research, more recent studies have shown that grit is not proven to be teachable and therefore could be considered a personality trait whereas growth mindset has proven to be a teachable noncognitive skill. Therefore, this led to the hypothesis of: If a student tests high on the grit scale, they are more likely to have a higher growth mindset because they’re more likely to persevere meaning they would most likely have more successful academic results. Moreover, it was predicted that the relationship between grit and significant adult relationship would be positive although not necessarily a strong connection because they may or may not have any effect on the other. The prediction that was anticipated to be the strongest was that of the correlation between growth mindset and adult relationships because growth mindset is teachable and

the higher the student is on the growth mindset assessment, the higher the likelihood that student would have at least one significant adult relationship.

In order to determine the practical parameters of the study (how long it would take, the wording and instructions to be given to the students, etc.), the Institutional Review Board (IRB) confirmed a request to give the survey to a class of university students. The university students took approximately 8 minutes to complete the survey. They university students felt the directions were clear and concise. They provided positive feedback on the way the test was presented and made few suggestions for improvement.

Once the literature review and the student survey were both complete, a school in the city of Dayton was contacted in order to request that their students be the subjects for the study. The school confirmed and then the IRB process began. A nonexempt form was completed, which included the intent, background research and outline of the study procedure. Then a parent information sheet and student information sheet were completed in order to provide contact information and the purpose of the study to all those involved in the study. The survey, background information, parent information sheet, student information sheet and the nonexempt application were confirmed as ethical by the IRB after a very thorough application process.

April 6 was the day of the survey. On April 4 the students were given the “Parent Information Sheet” to take home to their parents to review. This sheet did not need to be signed. April 6 was the day of the survey. All supplies were collected. This included: Timer, extra pens and pencils for students, and stapled and numbered survey packet for each student including: Grit Scale Test, Mindset Assessment Profile and free-response

question sheet. The survey was distributed (exact procedure listed below) and then results were kept in a safe location in order to be analyzed.

The data was put in an excel spread sheet and then analyzed. This analysis would show the correlation between grit and growth mindset, grit and relationships, and growth mindset and relationships.

There was control for error during this study. The students were all analyzed on the same day and the environment for all the surveys was fairly constant. The same instructions were given to the students every single time. The students were asked to stay quiet during the test in order to keep a controlled environment.

### **Data Collection**

Upon the researcher's arrival at the school, the school administrator present for the survey gathers the freshman students in the common area at the designated times for the different advisory periods. Once the students were present in the classroom, the following procedure took place:

1. Begin Narrative
  - a. *My name is Abbey Saurine and I am an education student at the University of Dayton. Thank you all for being willing to participate in this study.*
  - b. *I am passing out a form right now that I want you to take a few minutes to read over and then sign at the bottom. The form just tells me that you agree to participate in this project.*
2. Hand out participant assent form.
3. Allow students 3-4 minutes to read and sign the form.
4. Collect the form.
5. Continue Narrative
  - a. *The questions for this survey are very simple and straight forward. However, you are free to stop the survey at any time if you feel like you can't answer the questions but your results will be thrown away.*
  - b. *Your name will not be associated with any of the results and no one will see the results except for my faculty mentor and me. The data is safely locked away when it is not being analyzed. This will not affect your grade.*
  - c. *You may write on the paper but do NOT write your name. Please use a pen or pencil but write your answers as clearly as possible.*

- d. *Please answer to the best of your ability and as honestly as you can for the best results.*
- e. *Please do not talk until everyone has handed their survey in.*
- f. *Raise your hand when you are finished and I will come collect your survey.*
- g. *I will now pass out the survey and place it face down on your desk. Do NOT turn it over until I tell you to do so.*
- h. *Are there any questions?*
- 6. Pass out surveys face-down. Make sure students are silent.
- 7. Prompt Students to start the survey.
- 8. Collect Surveys as the students raise their hands.
- 9. Repeat this process for each advisory period.

The data will be interpreted using the scale and assessment tools associated with the surveys created by Dweck and Duckworth. Additionally, numerical values will be assigned to the free-response questions the students recorded. These numbers will be assessed by the Statistical Package for the Social Sciences (SPSS) using a 2-tailed test. The type of correlation that will be used is a Pearson Correlation because the test will be assessing the linear correlation between two variables resulting in a value between -1 and 1. The correlation between grit and growth mindset, grit and relationship, and growth mindset and relationship will be completed using SPSS and a Pearson correlation. The three resulting numbers are the strength of correlation between these noncognitive skills and relationships in order to answer the original research question of: *What is the correlation between having a strong adult relationship and grit and what is the correlation between having a strong adult relationship and growth mindset? Additionally, what is the correlation between grit and growth mindset?*

The final numbers will show the strength of correlation between these noncognitive skills and relationships and will shed light on the importance of developing significant relationships with students to ultimately help them succeed in the classroom and in other areas of life.

Data was kept locked in the desk of the student researcher. No one looked at surveys other than the student researcher and faculty mentor. The results were kept anonymous because the student's name was never associated with the survey.

### **Ethical Issues**

Because the research study specifically focused on children facing adversity and poverty, the population had to be chosen in a way that would not require the students to report their family's income or economic status. Additionally, the adversity that comes along with poverty the students could have potentially been facing is possibly sensitive information. In order to still test these students while also remaining within the ethical parameter of quality research, a school with a high percentage of free and reduced- price lunch recipients was chosen. These student's families are classified as "low-income" meaning those students are statistically more likely to face adversity. Other than this issue, which was eventually avoided, no sensitive information was asked of the students and they were allowed to disclose as much information as they desired.

### **Summary**

The strategy and methodology for choosing the setting, subjects and strategies for research were discussed in this chapter. Additionally, the exact layout and reasoning for the surveys were discussed in addition to the exact procedure for completing the task. The reasoning for using the research of Carol Dweck, Ph.D. and Angela Duckworth, Ph.D. to inform this research study was also discussed. The limitations and ethical issues of the study were deliberated, though both are believed to have very little impact on the results of the study itself. The discussion of the methodology for this chapter allows for the analysis of the data to begin.

## **Chapter 4: Results-Analysis and Discussion of the Data**

### **Introduction and Research Question**

The purpose of this chapter is to analyze and discuss the data collected. This study examined the correlation between Grit and Growth Mindset, Grit and significant adult relationships, and Growth Mindset and significant adult relationships. The resulting correlation numbers will help answer the research question of: *What is the correlation between having a strong adult relationship and grit and what is the correlation between having a strong adult relationship and growth mindset?* The hypothesis was: If a student has a strong growth mindset, they are more likely to have reported at least one significant adult relationship. Additionally, if a student is “gritty,” the student is more likely to have a growth mindset and may or may not have a significant adult relationship.

### **Findings**

The data collected was analyzed using the Pearson Correlation by means of the Statistical Package for Social Science (SPSS) and this was a 2-tailed test of significance. For all three tests, the correlation is significant on the 0.01 level. The type of correlation that was tested was the Pearson Correlation. The test of significance number signifies the possibility of the relationship happening by chance.

#### **Test 1**

Variables: Grit and Mindset

Print: Two Tailed

Missing: Pairwise

	<b>Grit</b>	<b>Mindset</b>
<b>Grit</b> Pearson Correlation	1	.386
Sig. (2-tailed)		.005
Number	56	56
<b>Mindset</b> Pearson Correlation	.386	1
Sig. (2-tailed)	.005	
Number	56	56

### Correlation was significant at the 0.01 level (2-tailed)

There is a positive correlation between the two noncognitive skills grit and growth mindset. The test of significance shows that the chance of this correlation happening by chance is 5/1000. The implications of this correlation is that if a student is “gritty,” it is possible they will have a strong growth mindset. Because grit is predicted to be a personality trait, this correlation is a natural correlation that may or may not be able to be influenced by the educator. However, knowing the grit levels of a student shows the necessity of the educator develop other noncognitive skills if the grit levels are low.

### Test 2

Variables: Grit and Relationship

Print: Two Tailed

Missing: Pairwise

		Grit	Relationship
<b>Grit</b>	Pearson Correlation	1	.381
	Sig. (2-tailed)		.004
	Number	56	56
<b>Relationship</b>	Pearson Correlation	.381	1
	Sig. (2-tailed)	.004	
	Number	56	56

### Correlation was significant at the 0.01 level (2-tailed)

There is a positive correlation between the grit and significant adult relationships. The test of significance shows that the possibility of this correlation happening by chance is 4/1000. This correlation was predicted to be the weakest. Because grit is thought to be a personality trait and significant adult relationships are situational, both of these variables are difficult to change unless the educator becomes the significant adult relationship in the child’s life; moreover, even if the educator is the most significant relationship, it may not be possible to foster and develop personality traits such as grit.

### Test 3

Variables: Relationship and Mindset

Print: Two Tailed

Missing: Pairwise

		Relationship	Mindset
<b>Relationship</b>	Pearson Correlation	1	.422
	Sig. (2-tailed)		.001
	Number	56	56
<b>Mindset</b>	Pearson Correlation	.422	1
	Sig. (2-tailed)	.001	
	Number	56	56

#### Correlation was significant at the 0.01 level (2-tailed)

There is a positive correlation between relationships and growth mindset. The test of significance shows that the possibility of this correlation happening by chance is 1/1000. This correlation was predicted to be the strongest because both variables are able to be influenced by the educator. Growth mindset can be developed and taught and relationships between educator and student can be strengthened and changed. The implications of this correlation shows if a student has a strong relationship with an adult, possibly a teacher, there is a chance that the adult can work on developing the mindset of the student in order to create a better mindset around academics.

### Summary

These results are important to consider because the strength of the correlations are noticeable and significant. When reflecting on what this could mean for previous research, it reinforces the importance of having a positive academic mindset and also reinforces the importance of the teacher contributing to the development of a growth mindset. Additionally, these results support the theory that grit is an innate personality



trait rather than a skill to be developed; therefore, showing that academic perseverance may not be a quality possible to be developed by an educator. However, this research also suggests that encouraging and supporting a student in academic perseverance and grit can contribute to having a stronger mindset because the two skills are so closely connected and supportive of the other. The 5 noncognitive skills essential for academic success discussed in Chapter 2 are supported to exist in this study in students who report stronger relationships. The most significant finding of this study that is supported by previous research, is the correlation between growth mindset and relationships. Mindset can be developed and changed and significant adult relationships have the capacity to influence academic mindset in a direction for positive change and growth in a student's life. Additionally, the data from this study shows students who reported having zero positive adult influences in their life have the lowest grades and weakest mindset. The results of this study are supportive of the following hypothesis: If a student has a strong growth mindset, they are more likely to have reported at least one significant adult relationship. Additionally, if a student is "gritty," the student is more likely to have a growth mindset and may or may not have a significant adult relationship. The success of this study opens doors for further research on noncognitive skills and the importance of incorporating the teaching of these skills into preexisting curriculum.

## **Chapter 5: Conclusions and Further Research**

### **Significance/applications of the study/Introduction**

This research study attempts to find ways to assist students facing significant adversity in their lives in accomplishing academic goals and finding success in schools. Research has shown that there are various factors contributing to this; however, noncognitive skills are essential to develop for these students. Grit and Growth Mindset are the two noncognitive skills that are the focus of this study. Additionally, noncognitive skills cannot be developed in many students without significant adult relationships that assist them in the development of certain skills. This research study attempts to show how significant adult relationships are in the development of essential academic and noncognitive skills in the lives of young people.

The official research question for this study was: *What is the correlation between having a strong adult relationship and grit and what is the correlation between having a strong adult relationship and growth mindset? Additionally, what is the correlation between grit and growth mindset?*

These questions were answered through the development and distribution of a survey which results in quantitative values regarding relationships, grit and growth mindset. These values will be analyzed using the Pearson Correlation by means of the Statistical Package for Social Science and will produce three different numbers to answer all three research questions listed above. These results will show the significance of grit and growth mindset through the lens of adult relationships in the lives of students facing adversity. Additionally, this question is relevant for those who prepare teachers and those who offer professional development for in-service teachers because it not only shows the

importance of noncognitive skills for academic success; it also shows the importance of relationships in the development and presence of noncognitive skills in young people.

This research has the potential to contribute to the research on noncognitive skills, which are already deemed vital by the larger research community, which will bring teachers, coaches, parents, etc. one step closer to having the tools necessary to develop the essential skills necessary for a student's success in school and for the rest of life.

### **Summary of the Study**

The freshman class at a local urban school were given a survey with a Mindset Assessment Profile, Grit Scale assessment and a relationship assessment and each assessment produced three numbers representing the strength of these skills. The three numbers from the Grit Scale, Mindset Assessment Profile and from the Relationship Information all provided a quantitative number in order to succinctly measure the results of the many complex survey questions. The numbers from each survey gave the ability to compare the correlation between the strength/presence of noncognitive skills and the strength of adult relationships in the student's life.

### **Conclusions**

The data collected was analyzed using the Pearson Correlation by means of the Statistical Package for Social Science (SPSS) and this was a 2-tailed test of significance. For all three tests, the correlation is significant on the 0.01 level. The type of correlation that was tested was the Pearson Correlation.

Grit and Mindset had a correlation of .386, Grit and Relationships had a correlation of .381 and Mindset and Relationships had a correlation of .422. These results support the theory that grit is an innate personality trait rather than a skill to be developed; therefore, showing that academic perseverance may not be a quality possible

to be developed by an educator. However, this research also suggests that encouraging and supporting a student in academic perseverance and grit can contribute to having a stronger mindset because the two skills are so closely connected and supportive of the other. Additionally, mindset can be developed and changed and significant adult relationships have the capacity to influence academic mindset in a direction for positive change and growth in a student's life.

These results show the importance of grit, mindset and relationships and the correlation between these three. These results can push researchers to try to understand what exactly gets students to succeed and how adults can help to do that; moreover, it shows that certain noncognitive skills are more effective in helping students to succeed than others because some skills cannot be taught as opposed to the idea that all noncognitive skills are the same in effectiveness and teach-ability.

### **Recommendations for further research**

Though this research was helpful for learning about two noncognitive skills, grit and growth mindset, in the context of relationships, there are many more noncognitive skills that can be studied for tests of significance. Because of this, other noncognitive skills such as time management, goal setting, self-control, etc. need to have measureable, quantitative values in order for them to be correlated with significant relationships in the lives of students. It seems that one of the biggest needs in this area of research is creating ways to measure noncognitive skills.

Because of this, some further questions for this research include:

- ☐ What other noncognitive skills can be developed through relationships?
- ☐ How can we effectively and accurately measure individual noncognitive skills?

- ☐ Is there a way we can measure a student's general possession of a multitude of noncognitive skills?
- ☐ What other factors besides relationships make a difference? What is the difference between classroom environment and teacher-student relationships?
- ☐ Does faith make a difference or can faith be considered a noncognitive skill?
- ☐ How does this research vary for different age groups?
- ☐ How does this research vary for different cultures?

There is much to be studied in this area of research. The importance of these skills cannot be questioned; however, the development and which skills are most important need to be uncovered. Paul Tough, author of *Helping Children Succeed: What Works and Why*, has tried to answer a variety of his questions and begins to bridge the gap between this research and the questions asked above. His research based on noncognitive skills reflects the conclusions found above and provide interesting insights in where exactly the research can go next. The next section of this chapter provides some new ideas on the idea behind motivation and positive classroom environment and how that is related to the research done in this study.

### **Further Research**

It seems that one other noncognitive skill important for success in low-income students specifically that might be possible to consider is motivation. “The highest achievers in Houston, in Guryan’s study it was the students with the highest motivation who showed some (small) signs of improvement. The poorly motivated, recalcitrant students who were the real target of the intervention didn’t benefit at all” (Tough, 2016). If motivation is so important for intervention with low-income students, how do we do this? Though grit is a personality trait, if they have the ability to persevere, what incentives get students excited and willing to work hard?

Tough says motivation comes when there is “inherent enjoyment and meaning that those actions bring us, a phenomenon labeled intrinsic motivation (Tough, 2016). When a student feels as if the work they are doing gives them purpose and meaning, they will want to do work hard to accomplish that goal. However, this is sometimes a challenge in the classroom because even some of the most motivated students struggle to find intrinsic motivation. So how can teachers motivate? As this study shows, intrinsic motivation is important for student success; however, what do students do when intrinsic motivation fails? What can teachers do to motivate, to develop a mindset that allows students to persevere?

Extrinsic motivation comes when it meets three basic human needs: “autonomy, competence and relatedness. When teachers are able to create an environment that promotes these three feelings, they say, students exhibit much higher levels of motivation” (Tough, 2016). Teachers can help students find motivation to do academic work when they give students a sense of choice in their work while still having work that is challenging and still possible to complete.

As discussed extensively in previous chapters, research shows the importance and effectiveness of developing noncognitive skills. It is shown time and time again that noncognitive skills are essential and that a student cannot develop these skills alone. However, what research has not yet done is create an effective way to measure noncognitive skills, either generally or specific noncognitive skills, which does not give clear and quantitative ways to inform next steps in learning. Though Duckworth has proven that noncognitive skills are a better predictor of success in college than SAT or ACT's, there is still no consensus among the education community and in research on

how much weight noncognitive skills should be given in curriculum, what noncognitive skills are the most important and how exactly they should be developed (Tough, 2016). Additionally, the research spreads across all different age groups and specific strategies for elementary and high school ages have not been developed. If the skills cannot effectively and consistently be measured, it is a challenge to create effective and convincing research-based strategies.

One of the most current ways researchers believe noncognitive skills can be measured is by “measuring the positive outcomes that we know those capacities contribute to” (Tough, 2016). Northwestern University’s Kirabo Jackson created “a proxy measure for students’ noncognitive ability, using just four pieces of existing administrative data: a student’s attendance, suspensions, on-time grade progression and overall GPA” (Tough, 2016). This test was a better predictor of a student’s probability of attending college and their success in college (Tough, 2016).

Though these findings are informative on how we can possibly measure noncognitive skills and prove the importance of developing noncognitive skills, they don’t necessarily prove *how* to develop them. However, research has noticed some important consistencies in students who do have positive academic outcomes related to noncognitive skills and these findings relate to what was referenced in Chapter 2 of this paper. The environment a teacher creates in the classroom help students to make better decisions that lead to success (Tough, 2016). If teachers can create an environment that conveys messages of “belonging, connection, ability and opportunity” they have a “profound impact on a student’s psychology” (Tough, 2016). These ideas relate strongly to the Search Institute’s idea of the developmental relationship which emphasizes the

importance of those relationships which help young people develop skills essential for success in school and in life. This developmental relationship could possibly be a teacher because “teachers have a critical and potentially transformative opportunity, when dealing with students who perceive school as a threatening place, to disarm those threats by changing the way they communicate” (Tough, 2016).

A study done by Joseph Allen, a psychology professor at the University of Virginia, worked on training teachers on how to create a positive emotional environment to create a sense of autonomy and meaning for students in the classroom. This was done by coaching teachers via phone coaching and personal interactions for a full year through a program called My Teaching Partner. This study demonstrates that “when teachers are trained in how to create a better environment in the classroom, that can have a measureable effect on test scores” (Allen, 2011). A positive classroom environment results in kids feeling “a sense of belonging at school, when they receive the right kind of messages from an adult who believes they can succeed and who is attending to them with some degree of compassion and respect, they are then more likely to show up to class, to persevere longer at difficult tasks, and to deal more resiliently with the countless small-scale setbacks and frustrations that make up the typical student’s school day” (Tough, 2016).

Tough’s ideas and synthesis of research regarding extrinsic and intrinsic motivation and his ideas on positive classroom environment could very much inform the next steps for research on relationships and noncognitive skills. Finding a way to motivate students and measure motivation in relation to classroom environment could be areas for further research related to this paper.



## **Final Conclusion**

This study found the correlation between two significant noncognitive skills essential for academic success and significant adult relationships. The importance of each noncognitive skill and relationships was discussed and the significance of those correlation was presented. This study further emphasizes the crucial presence of significant adult relationships for students facing adversity and the importance of teachers being that significant relationship for students.

The heart of this research addresses a great need in the lives of our nation's children. There are students who are facing incredible adversity and these challenges seem like insurmountable obstacles. Our nation's systems and programs help; however, though these programs have good intentions, they sometimes neglect the deepest and most fundamental need of our children. This need is relationships. Our children need to know they matter, they need to know their lives have meaning and that they can make a difference in our world. No student is created without potential and a child's success absolutely cannot be predicted by past failures; however, their moments of failure can become the focus if they are not reaffirmed in their abilities and encouraged to develop and thrive. Teachers have an obligation and a unique call to respond to the needs of these most vulnerable children, to notice, affirm and develop their gifts. Relationships matter; moreover, relationships are an issue of justice and a matter of absolute importance for the future of our nation. More so than that, the lives of over 20% of our nation depend on the ability and responsiveness of teacher to make a difference in the lives of these young people. This research study and the potential for further study is an

area where justice for our nation can happen and the long process of overcoming educational, economic and many other forms of injustice can begin. A good teacher cares about all children, especially those in the 20%, and works to build relationships so a child can thrive; moreover, a teacher builds relationships for the vulnerable, for the future of our nation and for the strong hope that justice can be achieved for our children.

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## Appendix

The following papers were the different parts of the survey given to students.

### MINDSET ASSESSMENT PROFILE

Name: \_\_\_\_\_

This is NOT a test! It is an opinion survey about beliefs and goals regarding ability and performance. It is very important that you give your honest opinion, not what you believe someone else would think best. Read each statement, decide how much you agree or disagree with the statement, and circle your answer.

Do you Agree or Disagree?	Disagree A Lot	Disagree	Disagree A Little	Agree A Little	Agree	Agree A Lot	Profile Number
1. No matter how much intelligence you have, you can always change it a good deal.	1	2	3	4	5	6	
2. You can learn new things, but you cannot really change your basic level of intelligence.	1	2	3	4	5	6	
3. I like my work best when it makes me think hard.	1	2	3	4	5	6	
4. I like my work best when I can do it really well without too much trouble.	1	2	3	4	5	6	
5. I like work that I'll learn from even if I make a lot of mistakes.	1	2	3	4	5	6	
6. I like my work best when I can do it perfectly without any mistakes.	1	2	3	4	5	6	
7. When something is hard, it just makes me want to work more on it, not less.	1	2	3	4	5	6	
8. To tell the truth, when I work hard, it makes me feel as though I'm not very smart.	1	2	3	4	5	6	
<b>MINDSET ASSESSMENT PROFILE NUMBER</b>							

<b>If your profile number falls into this range:</b>	<b>Then your MAP (Mindset Assessment Profile) group is:</b>	<b>People in this MAP group usually believe the following things:</b>
<b>8-12</b>	<b>F5</b>	You strongly believe that your intelligence is fixed—it doesn't change much. If you can't perform perfectly you would rather not do something. You think smart people don't have to work hard.
<b>13-16</b>	<b>F4</b>	
<b>17-20</b>	<b>F3</b>	You lean toward thinking that your intelligence doesn't change much. You prefer not to make mistakes if you can help it and you also don't really like to put in a lot of work. You may think that learning should be easy.
<b>21-24</b>	<b>F2</b>	
<b>25-28</b>	<b>F1</b>	You are unsure about whether you can change your intelligence. You care about your performance and you also want to learn, but you don't really want to have to work too hard for it.
<b>29-32</b>	<b>G1</b>	
<b>33-36</b>	<b>G2</b>	You believe that your intelligence is something that you can increase. You care about learning and you're willing to work hard. You do want to do well, but you think it's more important to learn than to always perform well.
<b>37-40</b>	<b>G3</b>	
<b>41-44</b>	<b>G4</b>	You really feel sure that you can increase your intelligence by learning and you like a challenge. You believe that the best way to learn is to work hard, and you don't mind making mistakes while you do it.
<b>45-48</b>	<b>G5</b>	

**12- Item Grit Scale**

*Directions for taking the Grit Scale: Please respond to the following 12 items. Be honest – there are no right or wrong answers!*

1. I have overcome setbacks to conquer an important challenge.
  - ☐ Very much like me
  - ☐ Mostly like me
  - ☐ Somewhat like me
  - ☐ Not much like me
  - ☐ Not like me at all
2. New ideas and projects sometimes distract me from previous ones.\*
  - ☐ Very much like me
  - ☐ Mostly like me
  - ☐ Somewhat like me
  - ☐ Not much like me
  - ☐ Not like me at all
3. My interests change from year to year.\*
  - ☐ Very much like me
  - ☐ Mostly like me
  - ☐ Somewhat like me
  - ☐ Not much like me
  - ☐ Not like me at all
4. Setbacks don't discourage me.
  - ☐ Very much like me
  - ☐ Mostly like me
  - ☐ Somewhat like me
  - ☐ Not much like me
  - ☐ Not like me at all
5. I have been obsessed with a certain idea or project for a short time but later lost interest.\*
  - ☐ Very much like me
  - ☐ Mostly like me
  - ☐ Somewhat like me
  - ☐ Not much like me
  - ☐ Not like me at all
6. I am a hard worker.
  - ☐ Very much like me
  - ☐ Mostly like me
  - ☐ Somewhat like me
  - ☐ Not much like me
  - ☐ Not like me at all

7. I often set a goal but later choose to pursue a different one.\*

- ☐ Very much like me
- ☐ Mostly like me
- ☐ Somewhat like me
- ☐ Not much like me
- ☐ Not like me at all

8. I have difficulty maintaining my focus on projects that take more than a few months to complete.\*

- ☐ Very much like me
- ☐ Mostly like me
- ☐ Somewhat like me
- ☐ Not much like me
- ☐ Not like me at all

9. I finish whatever I begin.

- ☐ Very much like me
- ☐ Mostly like me
- ☐ Somewhat like me
- ☐ Not much like me
- ☐ Not like me at all

10. I have achieved a goal that took years of work.

- ☐ Very much like me
- ☐ Mostly like me
- ☐ Somewhat like me
- ☐ Not much like me
- ☐ Not like me at all

11. I become interested in new pursuits every few months.\*

- ☐ Very much like me
- ☐ Mostly like me
- ☐ Somewhat like me
- ☐ Not much like me
- ☐ Not like me at all

12. I am diligent.

- ☐ Very much like me
- ☐ Mostly like me
- ☐ Somewhat like me
- ☐ Not much like me
- ☐ Not like me at all

Scoring:

1. For questions 1, 4, 6, 9, 10 and 12 assign the following points:
  - 5 = Very much like me
  - 4 = Mostly like me
  - 3 = Somewhat like me
  - 2 = Not much like me
  - 1 = Not like me at all
2. For questions 2, 3, 5, 7, 8 and 11 assign the following points:
  - 1 = Very much like me
  - 2 = Mostly like me
  - 3 = Somewhat like me
  - 4 = Not much like me
  - 5 = Not like me at all

Add up all the points and divide by 12. The maximum score on this scale is 5 (extremely gritty), and the lowest score on this scale is 1 (not at all gritty).

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Duckworth, A.L., Peterson, C., Matthews, M.D., & Kelly, D.R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 9, 1087-1101.

### **Additional Free Response Questions on Relationships**

What grades have you mostly receive on your report card during the 2015-2016 academic year?

- Mostly A's
- Mostly B's
- Mostly C's
- Mostly D's
- Mostly F's

Are you involved in clubs, religious organizations or services, sports, or other activities outside of the classroom? If so, please list activities from the 2015-2016 academic school year AND approximately how much time per week you spent participating in each activity.



When you feel challenged by something, need advice or when you are upset, is there an adult you respect that you usually talk to? (circle all that apply).

- There is no adult I turn to
- Coach
- Teacher
- Grandparent, uncle, cousin, etc.
- Parent
- Religious Minister, pastor, priest, etc.
- Therapist, counselor, etc.
- Other
- If other please explain:

If you selected someone above, why does talking to this adult help you? Please choose one person to write about.

Quantitative Result	Student Response
<b>3</b>	<b>Multiple strong adult relationships are reported to be present.</b>
<b>2</b>	<b>At least one adult relationship is reported to be present.</b>
<b>1</b>	<b>No adult relationships are reported to be present but a friend, sibling, etc. was reported as a significant relationship for that student.</b>
<b>0</b>	<b>No significant relationship was reported by the student.</b>