

Mindset and Motivation

Nicholas Caluori

This paper was completed and submitted in partial fulfillment of the Master Teacher Program, a 2-year faculty professional development program offered by the Center for Teaching Excellence, United States Military Academy, West Point, NY, 2014.

Introduction:

Our mindset is the fundamental driving force behind what we do and why we do it. Mindset influences our motivations and permeates every walk of life, from academics to athletics to artistry to employment to personal relationships.

Mindset and motivation are true barometers of happiness. While what happiness means varies from person to person, a growth mindset with the right intrinsic motivations can get us there with greater ease and regularity. Basic needs such as food, shelter, and security are necessary for one to focus on growth. When basic needs are not met, however, chronic stress can detract from the tasks at hand, demotivate, and provide a massive hurdle to progress on every level. Yet, positive psychology research proves that basic needs only account for a small percentage of the total happiness equation. While half of our happiness is a set point or predetermined genetic homeostasis, the remaining percentage is entirely malleable through intentional activity. This means we are ultimately in control over how we view ourselves and can be proactive and reactive to the adversities imposed by external sources.

A focus on the extrinsic factors, however, such as wealth, image, and status are indicative of a fixed mindset and people who are statistically less happy with themselves and their lives. They focus their mindset and motivation on extrinsic rewards, and feel the need to prove themselves over and over again and are left with no true feeling of satisfaction. A focus on intrinsic factors, however, such as growth, relationships with family and friends, and desire to help (community) are indicative of a growth mindset. These people are exponentially happier with themselves and their lives. They have a lust for life and learning, are regularly resilient, and quickly recover from adversity.

People with a growth mindset find purpose and autonomy in their intentional activities. The beneficial side effect is the generation of autotelic experiences, or “flow.” This is when our brain enters a state like that of a computer using the maximum amount of working memory. As a result, we are absorbed in the activity where we lose our sense of time and being. Flow experiences are more regularly felt by those who are in a growth mindset, especially those in pursuit of mastery and can be found in countless activities and professions.

With original intentions of focusing through the academic lens, research quickly highlights how mindset and motivation have no boundaries and are mosaic entities. Although our daily lives and culminating experiences give us predispositions to some mindsets and motivations over others, we are ultimately the ones in control. Much of the literature highlights decades of

reputable research with consistent evidence that our mindset is the driving force behind our motivation.

The goal of this literature review is to put a focal lens on some of the profound work on mindset and motivation, and interweave constants, factors, similarities, and differences in an interesting narrative format.

Literature Review:

Happy is a documentary that explores fundamental tenets of happiness and their manifestation and expression throughout the world. Producers ask a variety of people what they want in life and nearly everyone replies, “To be happy.” However, what does it mean to be happy? Many think the answers are found with money and fame. Yet, why is it that a bike taxi named Manoj Singh from the Kolkata Slum in India is happier than millionaires halfway across the world? His house leaks when it rains, his feet hurt from running the distance a horse does in a drawn carriage, and some of his customers are rude. The answer is his basic needs are met and he comes home every day to his wife and children where he has a sense of family and community. In his words, “I feel I am not poor, but the richest person.”¹

How about Roy Blanchard, Sr. from the heart of Louisiana? He lives a simple life of family crawfish gatherings and spends lots of time on his boat in the bayou. Or, how about grandfather Ronaldo Fadal who surfs every day and lives in a small hut in walking distance to the Brazilian beaches?²

The answer is mindset. These men are only a few of many examples of people living rich lives outside of the popular trends of mainstream societies. *Happy* quickly cites the movements in positive psychology that explain this phenomenon, an area that has exponentially grown since the 1990s. While old school psychology focuses on the roots of people’s problems, positive psychology studies the remedy. The “Happiness Equation” breaks down the make-up of what makes us happy. 50% comes from a set point or homeostasis. This comes from a culmination of genetics and experiences.³

10% comes from extrinsic items such as social status, wealth, and income. When basic needs are met, however, the desire for excess can hinder happiness. An extreme example can be found in the epidemic of “karoshi” in Japan, which is when people overwork themselves to death. Other extreme examples can be seen in the countless celebrities where money, status, and image are their goals. They want more and do not know why they are still unhappy. However, take again Mr. Singh, Mr. Blanchard, and Mr. Fadal. All three men are not what we define as wealthy, yet their level of happiness is off the charts.⁴

Mihaly Csikszentmihalyi is well-known throughout the world for his significant work defining autotelic experiences, or “flow.” He talks about their connection to the “roots of happiness” in a 2008 TED Talk. He shows a chart of research data from 1956 to 1996 which illustrates how 30% of the population believes they are happy. In relation to income, however, that happiness level is not affected after a basic amount of income is received. “An increase in material sources does not increase happiness,” he says. His 40 years of research of composers, poets,

¹ *Happy*, directed by Roko Belic (San Francisco: Wadi Rum Films, Inc., 2011), DVD.

² Ibid.

³ Ibid.

⁴ Ibid

professors, athletes, monks, nuns, indigenous peoples, and CEOs of major corporations sparks the question in the fundamental focus of his research, “Where in our everyday experience do we feel happy?”⁵

Perhaps the answer, and the most important part of the “Happiness Equation,” is that 40% of our total happiness comes from intrinsic reward from intentional activity. What this means is we are the ones in control of our mindset and therefore we are the ones in control over our happiness. We are the ones in control of our motivations in school, work, and life. When our intentional activity is devoted to growth, relationships with family and friends, and a desire to help (community), we are exponentially happier people. With their basic needs being met, Mr. Singh, Mr. Blanchard, and Mr. Fadal regularly engage in the 40% of intentional activity which consistently puts them in a positive and happy mindset.⁶

How does one get into a positive mindset? Simple steps can have significant rewards. In the words of Dr. Carol Dweck, perhaps one of the most influential researchers in the fields of mindset and motivation, “Changing people’s beliefs, even the simplest ones, can have profound effects.”⁷

Dr. Dweck is Professor of Psychology at Stanford University and her article, “The Secret to Raising Smart Kids,” concisely summarizes many main points of her work. Since the 1970s, she has conducted thorough research which proves how a fixed (helpless) or growth (mastery-oriented) mindset has significant impact on every aspect of our lives in a myriad of ways.⁸ She focuses on how we are in control over our mindset, and therefore how we are in control over the 40% of intentional activity in the “Happiness Equation” discussed earlier. Dr. Dweck clarifies, “...My research has shown that *the view you adopt for yourself* profoundly affects the way you lead your life.”⁹

First and foremost in her research, Dr. Dweck defines the mindsets. Those with a fixed (helpless) mindset focus on ability over effort. Their ego is easily threatened and their goal is to prove themselves over and over again. Success or failure in any endeavor is a reflection of who you are and defines you.¹⁰ Paul Tough, in his work, *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character*, cites the work of Martin Seligman, which complements the work of Dr. Dweck. Dr. Seligman concludes that those with fixed mindsets are oftentimes pessimists who “tend to react to negative events by explaining them as

⁵ Mihaly Csikszentmihalyi, *Flow: The Psychology of Optimal Experience* (New York: Harper Perennial Modern Classics, 2008).; Mihaly Csikszentmihalyi, “Flow: The Secret to Happiness,” last modified October 24, 2008, accessed March 6, 2014, <https://www.youtube.com/watch?v=fXIeFJCqsPs>.

⁶ *Happy*, directed by Roko Belic (San Francisco: Wadi Rum Films, Inc., 2011), DVD.

⁷ Carol Dweck, *Mindset: The New Psychology of Success* (New York: Ballantine Books, 2007), ix.

⁸ Carol Dweck, “The Secret to Raising Smart Kids,” *Scientific American Mind*, November (2007).

⁹ Carol Dweck, *Mindset: The New Psychology of Success* (New York: Ballantine Books, 2007), 6.

¹⁰ Carol Dweck, “The Secret to Raising Smart Kids,” *Scientific American Mind*, November (2007).

permanent, personal, and pervasive.”¹¹ While even those with a fixed mindset can be and are successful, they pursue perfection over progress. They endlessly pursue and stretch the extrinsic items such as social status, wealth, and income.¹² Furthermore, and perhaps most dangerous, the fixed mindset is reinforced by the pressures of society:¹³

Our society worships talent, and many people assume that possessing superior intelligence or ability—along with confidence in that ability—is a recipe for success. In fact, however, more than 30 years of scientific investigation suggests that an overemphasis on intellect or talent leaves people vulnerable to failure, fearful of challenges and unwilling to remedy their shortcomings.

What about talent and potential? Dr. Dweck does not deny that we all are born with different talents and innate abilities. What she has proven, however, is a growth mindset maximizes our potential:¹⁴

The growth mindset is based on the belief that your basic qualities are things you can cultivate through your efforts. Although people may differ in every which way—in their initial talents and aptitudes, interests, or temperaments—everyone can change and grow through application and experience.

Malcolm Gladwell addresses a gap between how much talent weights into the success of an individual. What matters more, however, is growth through hard work:¹⁵

Achievement is talent plus preparation. The problem with this view is that the closer psychologists look at the careers of the gifted, the smaller the role innate talent seems to play and the bigger the role preparation seems to play.

With a focus more on effort than ability, a person can easily surpass those who see ability as a fixed trait. We often see this proven in a myriad of settings in academics, athletics, arts, the work force, and the military.¹⁶ The meaning of the growth mindset can even be heard in a profound quote by Thomas Jefferson, whose statue at the bottom of Jefferson Hall at West Point is a stark reminder that effort over ability is what leads to success. "I am a great believer in luck, and I find the harder I work, the more I have of it."

In her book, *Mindset: The New Psychology of Success*, Dr. Carol Dweck shows many examples of fixed versus growth mindsets. She also discusses how people in all walks of life judge others before truly assessing their potential. Those with the fixed mindset believe

¹¹ Paul Tough, *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character* (New York: Mariner Books, 2013), 54.

¹² *Happy*, directed by Roko Belic (San Francisco: Wadi Rum Films, Inc., 2011), DVD.

¹³ Carol Dweck, "The Secret to Raising Smart Kids," *Scientific American Mind*, November (2007).

¹⁴ Carol Dweck, *Mindset: The New Psychology of Success* (New York: Ballantine Books, 2007), 7.

¹⁵ Malcolm Gladwell, *Outliers: The Story of Success* (New York: Back Bay Books, 2011), 38.

¹⁶ Carol Dweck, "The Secret to Raising Smart Kids," *Scientific American Mind*, November (2007).

potential can be measured and determine our future. Dr. Dweck cites how people like Elvis Presley, Lucille Ball, and Charles Darwin were told they would not amount to anything while history proved otherwise.¹⁷ In sports, she describes the fixed mindsets and destructive habits of Bobby Knight, a complicated and controversial coach, who took failure personally and was “mercilessly judgmental.”¹⁸ “He motivated his players, not through respect for them, but through intimidation—through fear. They feared his judgments and explosions. Did it work?”¹⁹ She clarifies how Mr. Knight’s mindset about himself was toxic to his teams. “It’s not that Knight had a fixed mindset about his players’ ability. He firmly believed in their capacity to develop. But he had a fixed mindset about himself and his coaching ability. The team was his product, and they had to prove his ability every time out.”²⁰

Contrary to a fixed approach, “People with the growth mindset know that it takes time for potential to flower,” and Dr. Dweck cites the growth of works by French artist Paul Cézanne. One can actually see his prowess develop from his earlier works to his later masterpieces.²¹ In sports, she cites the growth mindsets and success of champions such as Michael Jordan, John Wooden and Mia Hamm. In higher education, she cites the example of two different Juilliard violin professors: Ivan Galamian and Dorothy DeLay. Mr. Galamian would label players early in their freshman year, that “weeded out the students they weren’t going to bother with.” Ms. DeLay, however, believed any student could persevere when given the proper tools in a nurturing environment with high standards and a growth mindset.²² The successful statistics of Ms. DeLay’s students prove she was correct.

As Dr. Dweck states in the title of her book, mindset leads to success. Success, like happiness, can be interpreted in many different lights, which Malcolm Gladwell illustrates in his interesting work, *Outliers: The Story of Success*. Mr. Gladwell gives a new perspective and provokingly interesting understanding of what makes people successful aside from the romantic notion that they were born from nothing and rose to fame. He argues and substantiates, with a number of examples in a myriad of ways, how a person’s success is not necessarily dependent on their merits and hard work. Instead, however, it is a combination of environment, opportunities, and factors that make up the success of the individual.²³

Mr. Gladwell, however, does not deny the merits of hard work. What he does, however, is show how the right conditions and opportunities can make or break someone in their rate of success. This can have an effect on their mindset. For example, he highlights the development of The Beatles before they were famous and Bill Gates before he founded Microsoft.²⁴

¹⁷ Carol Dweck, *Mindset: The New Psychology of Success* (New York: Ballantine Books, 2007), 27.

¹⁸ Ibid, 196-197.

¹⁹ Ibid, 198.

²⁰ Ibid, 199.

²¹ Ibid, 28.

²² Ibid, 189-190.

²³ Malcolm Gladwell, *Outliers: The Story of Success* (New York: Back Bay Books, 2011).

²⁴ Ibid, 47-55.

Perhaps there is no worse killer of motivation than stress. As mentioned earlier, when basic needs are not met, for one to find themselves in a growth mindset is an exception. This does not mean that people do not persevere out of dire circumstances, because they do. The odds, however, are not in their favor. The compiling components of stress manifest in a variety of ways and these polarizing experiences cripple mindset and motivation.

Paul Tough cites the work of neuroendocrinologist, Bruce McEwen, about the effects of stress.²⁵

According to McEwen, the process of managing stress, which he labeled *allostasis*, is what creates wear and tear on the body. If the body's stress-management systems are overworked, they eventually break down under the strain. McEwen called this gradual process allostatic load, and he says that you can observe its destructive effects throughout the body.

Chronic stress manifests itself inward and outward. Paul Tough cites the effect of turning stress inward, such as “Monisha” who could not concentrate in school because of her scattered family life, and “Mush” who turned his stress outward by getting into physical altercations and other disciplinary problems.²⁶ While Paul Tough cites these two examples from low socioeconomic circumstances, we can also see how elevated allostatic loads can impact people of all levels, including students in higher education and professionals in the work force (ex. changes in personal life, finances, etc.) Chronic stress will always negatively affect mindset and motivation.

While some stress is good so we push ourselves to grow, our bodily reaction cannot necessarily discern between running from a hungry lion or worrying about an exam. Books and articles constantly cite how chronic stress is bad for our mental and physical well-being. Paul Tough coins chronic stress as “The Firehouse Effect.”²⁷ He explains:²⁸

Think of the HPA [hypothalamic-pituitary-adrenal] axis as a superdeluxe firehouse with a fleet of fancy, high-tech trucks, each with its own set of highly specialized tools and its own team of expertly trained firefighters. When the alarm bell rings, the firefighters don't take the time to analyze exactly what the problem is and figure out which truck might be most appropriate. Instead, all the trucks rush off to the fire together at top speed, sirens blaring. Like the HPA axis, they simply respond quickly with every tool they might need. This may be the right strategy for saving lives in fires, but it can also result in a dozen trucks pulling up to put out a single smoldering trash can—or worse, responding to a false alarm.

²⁵ Paul Tough, *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character* (New York: Mariner Books, 2013), 13.

²⁶ *Ibid*, 14-27.

²⁷ *Ibid*, 11.

²⁸ *Ibid*, 14.

Perhaps finding our individual and collective identity can help us gain perspective so we better manage stress so we do not experience “The Firehouse Effect.” Paul Tough accurately argues that identity in the individual and group can have a positive or negative impact on mindset and achievement. In a positive light, an environment of creative collaboration and mutual support can help feed achievements in a group identity atmosphere. In many other cases, however, identity crises are very common. Perhaps the most obvious form of that can be found in labels and stereotypes. Paul Tough cites the 1990s research of Claude Steel, who coined the phrase “stereotype threat.” Paul Tough writes, “If you give a person a subtle psychological cue having to do with his group identity before a test of intellectual or physical ability, Steel showed, you can have a major effect on how well he performs. Researchers have since demonstrated this effect in countless different settings.”²⁹

These can also be called “self-fulfilling prophecies,” which Malcolm Gladwell credits to sociologist Robert Merton in his 1968 book, *Social Theory and Social Structure*. We essentially become what we see ourselves as in that mindset. For example, Canadians grow up with the false conclusion of who the best hockey players are in the country. Based on age cut-off, most young hockey players hand-picked for better opportunities to develop their skills on national teams, are born in the first three months of the calendar year. The physical development between boys in their pre-adolescent years vastly varies where months have significant advantages or disadvantages.³⁰ Therefore, younger kids often see themselves as inferior players, while they unknowingly are at a disadvantage because of their birth date. In their minds, however, they are not as good as the others.

We can immediately see how separating the “best” and the opportunities they provide or not provide have on mindset and motivation.

Gladwell also makes the connection to this pronounced trend in the world of education. From an early age, we separate the best and brightest and put them in accelerated courses. This trend snowballs:³¹

Parents with a child born at the end of the calendar year often think about holding their child back before the start of kindergarten: it’s hard for a five-year-old to keep up with a child born many months earlier. But most parents, one suspects, think that whatever disadvantage a younger child faces in kindergarten eventually goes away. *But it doesn’t*...The small initial advantage that the child born in the early part of the year has over the child born at the end of the year persists. It locks children into patterns of achievement and underachievement, encouragement and discouragement, that stretch on and on for years.

²⁹ Ibid, 96.

³⁰ Malcolm Gladwell, *Outliers: The Story of Success* (New York: Back Bay Books, 2011), 25.

³¹ Ibid, 28.

Mr. Gladwell further cites this trend in the study by economists Kelly Bedard and Elizabeth Dhuey between the scores among fourth graders on the Trends in International Mathematics and Science Study (TIMSS) and their birth month. The oldest children scored between four and twelve percentile points higher than the younger children. Elizabeth Dhuey elaborates:³²

That's the difference between qualifying for the gifted program and not. It's just like sports. We do ability grouping early on in childhood. We have advanced reading groups and advanced math groups. So, early on, if we look at young kids, in kindergarten and first grade, the teachers are confusing maturity with ability. And they put the older kids in the advanced stream, where they learn better skills; and the next year, because they are in the higher groups, they do even better; and the next year, the same thing happens, and they do even better again. The only country we don't see this going on is Denmark. They have a national policy where they have no ability grouping until age ten when age maturity differences level off.

The trend also manifests in college as well, where Dhuey and Bedard show how younger groups of students are underrepresented by 11.6 percent in higher education.³³

Mr. Gladwell notes this is what Robert Merton has called "The Matthew Effect." From Matthew 25:29, "For unto everyone hath shall be given, and he shall have abundance. But from him that hath not shall be taken away even that which he hath." This means we shower the successful with more opportunities as they climb the ladder while the deck of cards has less odds for others. Their success is something sociologists have coined as "accumulative advantage," which leads to labels and stereotypes that can profoundly affect mindsets and motivations of the successful and unsuccessful.³⁴

Dr. Dweck also addresses how labels and stereotypes can be harmful, particularly during two of the most formative stages of our lives, the transition from junior to high school and from high school to college. There is a fundamental difference, however, between how fixed and growth mindsets respond to the changes that happen during these critical times. Dr. Dweck cites "Low-Effort Syndrome" as a culprit, where fixed mindsets view adolescence as a test, stop trying, and believe that "a loser is forever." They don't want to be measured by tests and other gauges by peers and adults. Therefore:³⁵

It's no wonder that many adolescents mobilize their resources, not for learning, but to protect their egos. And one of the main ways they do this is by not trying...The low-effort syndrome is often seen as a way that adolescents assert their independence from adults, but it is also a way that students with the fixed mindset protect themselves.

³² Ibid, 28-29.

³³ Ibid, 29.

³⁴ Ibid, 30-31.

³⁵ Carol Dweck, *Mindset: The New Psychology of Success* (New York: Ballantine Books, 2007), 58.

Those with a growth mindset, however, view adolescence as opportunity, where “working hard was not something that made you vulnerable, but something that made you smarter.”³⁶

The trends of both mindsets can also be seen in a study Dr. Dweck did of undergraduate pre-med students. Those with fixed mindsets got worse grades because their focus was on the grades and not the learning. They studied by reading their books, notes, and rote memorization. Students with a growth mindset, however, got better grades, made comebacks after poor exams, “studied to learn,” by “looking for themes and underlying principles across lectures,” and reviewed mistakes until they understood the corrections to turn weak points into strengths. They did so even when they did not like the instructor.³⁷

Dr. Dweck also cites the dangers of positive and negative labels, which are reinforced by the “accumulative advantage” of some over others.³⁸ Negative labels can particularly harm achievement. Some common academic stereotypes are that African-Americans are not intelligent and women are not good at math and science.³⁹ Labels put those with a fixed mindset at considerable risk. “...In the fixed mindset, both positive and negative labels can mess with your mind. When you’re given a positive label, you’re afraid of losing it, and when you’re hit with a negative label, you’re afraid of deserving it.”⁴⁰ On the contrary.⁴¹

When people are in a growth mindset, the stereotype doesn’t disrupt their performance. The growth mindset takes the teeth out of the stereotype and makes people better able to fight back. They don’t believe in permanent inferiority. And if they *are* behind—well, then they’ll work harder and try to catch up...The growth mindset also makes people able to take what they can and what they need even from a threatening situation.

Fixed and growth mindsets also affect our perspectives. Even worse is when labels and stereotypes affect the perspectives of teachers. Dr. Dweck summarizes the dangers of their incorporation into the classrooms:⁴²

Teachers with a fixed mindset create an atmosphere of judging. These teachers look at students’ beginning performance and decide who’s smart and who’s dumb. Then they give up on the “dumb” ones. “They’re not *my* responsibility.”

These teachers don’t believe in improvement, so they don’t try to create it...“As a teacher I have no influence on students’ intellectual ability.”

³⁶ Ibid, 59.

³⁷ Ibid, 61.

³⁸ Malcolm Gladwell, *Outliers: The Story of Success* (New York: Back Bay Books, 2011), 30-31.

³⁹ Carol Dweck, *Mindset: The New Psychology of Success* (New York: Ballantine Books, 2007), 75.

⁴⁰ Ibid, 75-76.

⁴¹ Ibid, 76.

⁴² Ibid, 190-191.

This is how stereotypes work. Stereotypes tell teachers which groups are bright and which groups are not. So teachers with the fixed mindset know which students to give up on before they've even met them.

Malcolm Gladwell gives a more macro picture of stereotypes and labels in how we often judge and give up on people and how that influences how we frame success as a society:⁴³

Because we so profoundly personalize success, we miss opportunities to lift others onto the top rung. We make rules that frustrate achievement. We prematurely write off people as failures. We are too much in awe of those who succeed and far too dismissive of those who fail. And, most of all, we become much too passive. We overlook just how large a role we all play—and by “we” I mean society—in determining who makes it and who doesn't.

How do we remedy the toxicity of labels and stereotypes from our psyche that can impede us from achieving our full potential? Paul Tough offers recommendations from his research and cites the work of Dr. Carol Dweck and others. Perhaps the remedy is simply informing people that anything, particularly our mindset, is “malleable”:⁴⁴

The good news about stereotype threat is that, just as it can be triggered by subtle cues, it can be defused by subtle interventions. One of the most effective techniques, which has now been tested in a variety of settings, is exposing students at risk of stereotype threat to a very specific message: that intelligence is malleable. If students internalize that idea, these studies show, they gain confidence, and their test scores and GPAs often rise too.

The most intriguing fact about these interventions is that the question of the malleability of intelligence is actually hotly debated by psychologists and neuroscientists. Although scores on achievement tests like the SAT can certainly be affected by training of different kinds, the purest kind of intelligence is not very malleable at all. But a psychologist at Stanford named Carol Dweck has discovered a remarkable thing: Regardless of the facts on the malleability of intelligence, students do much better academically if they *believe* intelligence is malleable. Dweck divides people into two types: those who have a fixed mindset, who believe intelligence and other skills are essentially static and inborn, and those who have a growth mindset, who believe that intelligence can be improved. She has shown that students' mindsets predict their academic trajectories: those who believe that people can improve their intelligence actually do improve their grades.

⁴³ Malcolm Gladwell, *Outliers: The Story of Success* (New York: Back Bay Books, 2011), 33.

⁴⁴ Paul Tough, *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character* (New York: Mariner Books, 2013), 96-97.

And whether or not intelligence is malleable, mindset certainly is. Dweck and others have shown that with the right kind of intervention, students can be switched from a fixed mindset to a growth mindset, and their academic results tend to rise as a result.

Mr. Gladwell lends further strength to Mr. Tough's argument and cites the work of British psychologist Liam Hudson who made the connection that intelligence, like height in basketball, has a threshold. In other words, once a person is beyond a certain height or a certain IQ, the chances of their success are relatively the same, whether you are 7' tall or 6'5, whether your IQ is 120 or 140.⁴⁵ What this means is beyond a certain point the playing field is level where hard work and growth mindset prevail.

Gladwell coins this the "threshold effect", and gives further examples, such as the controversial affirmative action admissions at the University of Michigan law school. 10% are admitted with lower undergraduate grades and test scores. Follow-up of alumni, however, show that the minorities admitted under those guidelines are just as successful as other alumni after graduation. In other words, those students, while having what some would view as substandard credentials, were still above the threshold.⁴⁶ Furthermore, and perhaps more important, this shows how "intellect and achievement are far from perfectly correlated."⁴⁷

The "threshold effect" example is furthered when comparing divergence tests. Convergence tests measure getting the right answers and analytical intelligence while divergence tests measure creative responses. This demonstrates how "fertile minds" go beyond IQ and other labels.⁴⁸

This lends further credit to how students' knowledge of mindset and intelligence as "malleable" entities can motivate them to be successful in nearly any endeavor.

In *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character*, Paul Tough explores and cites strong evidence how education should go beyond cognitive ability (intellect) and build character traits.⁴⁹ Levin and Randolph expound on this statement and argue that teaching is more than "conveying information," teaching is helping students develop character traits such as "grit, curiosity, self-control, and optimism," which applies to academic and social situations.⁵⁰

While some have criticized Paul Tough's work as a wandering replacement for parenting or to make-up for the lack thereof, the author believes that as teachers, coaches, and parents, these are growth mindset qualities we can all agree will benefit any child, teenager, or adult.

⁴⁵ Malcolm Gladwell, *Outliers: The Story of Success* (New York: Back Bay Books, 2011), 80.

⁴⁶ *Ibid*, 84-86.

⁴⁷ *Ibid*, 90.

⁴⁸ *Ibid*, 86-89.

⁴⁹ Paul Tough, *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character* (New York: Mariner Books, 2013), 52.

⁵⁰ *Ibid*, 121-122.

Dr. Dweck writes character is "The ability to dig down and find strength even when things are going against you."⁵¹ Paul Tough writes that "Character is at least as important as intellect."⁵² While the definition of character can be debated, character is a cornerstone of cadet development during their four years at the United States Military Academy. While cadets get a first-rate education, they are also trained physically and militarily to be "leaders of character." Paul Tough cites the work of Angela Duckworth and Chris Peterson, who developed a questionnaire ("Grit Scale") to measure grit, one of the main components of character. Together they define grit as "a passionate commitment to a single mission and an unswerving dedication to achieve that mission."⁵³ Individually, Angela Duckworth defines grit as a "self-discipline wedded to a dedicated pursuit of a goal."⁵⁴ Semantics aside, grit aligns with a growth mindset and what we want in people who do not give up easily.

The questionnaire ("Grit Scale") was administered at West Point and revealed even deeper evaluations of cadet candidates:⁵⁵

Most remarkable, Duckworth and Peterson gave their grit test to more than twelve hundred freshman cadets as they entered the military academy at West Point and embarked on the grueling summer training course known as Beast Barracks. The military has developed its own complex evaluation, called the whole candidate score, to judge incoming cadets and predict which of them will survive the demands of West Point; it includes academic grades, a gauge of physical fitness, and a leadership potential score. But the more accurate predictor of which cadets persisted in Beast Barracks and which ones dropped out turned out to be Duckworth's simple little twelve-item grit questionnaire.

Malcolm Gladwell adds further merit to Duckworth and Peterson's Grit Scale when he cites work from Arthur Jensen's *Bias in Mental Testing* about how groupings can be skewed in terms of success. In this case, the grouping of people based on IQ:⁵⁶ "IQ differences in this upper part of the scale have far less personal implications than the thresholds just described and are *generally of lesser importance for success in the popular sense than are certain traits of personality and character.*"

In today's world, "leadership" and "motivation" are hot buzz words. Perhaps, however, there is an overemphasis on motivation as the root cause of why one does or does not succeed. We made note of the unique views of Malcolm Gladwell. There is more to it, however, and it goes further into mindset. Angela Duckworth argues there is a difference between "motivation

⁵¹ Carol Dweck, *Mindset: The New Psychology of Success* (New York: Ballantine Books, 2007), 92.

⁵² Paul Tough, *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character* (New York: Mariner Books, 2013), 61.

⁵³ *Ibid*, 75.

⁵⁴ *Ibid*, 136.

⁵⁵ *Ibid*, 76.

⁵⁶ Malcolm Gladwell, *Outliers: The Story of Success* (New York: Back Bay Books, 2011), 113.

(want) and volition (choosing)."⁵⁷ Measuring motivation, also, is a difficult endeavor as Carmit Segal cites in a 2006 study. He shows how different personality types respond differently to motivation, such as the performance-based incentives effects on those taking a coding test.⁵⁸ Duckworth summarizes this point well.⁵⁹

Just as a strong will doesn't help much if a student isn't motivated to succeed, so motivation alone is insufficient without volitudinal fortitude to follow through on goals.

Mindset and motivation are often tied to goal-orientation, yet there are currently movements away from this trend. While there are numbers of articles floating around social media, in the article, "Forget Setting Goals, Focus On This Instead," the case is made that when we focus solely on our goals instead of the "how" to get there, it is a constant reminder of failure.⁶⁰ This can be of particular detriment to those with a fixed mindset, or worse, those with a fixed mindset and a fragile psyche under chronic stress. They believe they are failures every day they wake up and have not achieved what they see seek in their personal and professional lives. Angela Duckworth and Gabriele Oettingen, however, find a happy medium of focusing on goals and the mental habits to help us get there. Their first example is of a person with the romantic mindset, who might be a dreaming optimist who overindulges in imaginative results and fantasizes about the end goal with no awareness of obstacles. The second example is of the person with a toxic mindset, who might be a thoroughbred pessimist that focuses on obstacles as justification against putting forth any effort. What Duckworth and Oettingen argue, however, is that the most successful people with a growth-mindset regularly utilize mental contrasting. This synergistic process is when a person foresees the long-term goal while realistically assessing any obstacles to the end outcome. They set up a realistic growth mindset that "creates a strong association between future and reality that signals the need to overcome the obstacles in order to attain the desired future."⁶¹

Dr. Carol Dweck further expounds on Duckworth and Oettingen's mental contrasting. She cites how a challenging and nurturing environment is vital to success in any trade, and especially in the classroom.⁶² Nurturing, however, does not mean that standards are compromised. Today's education system has produced an epidemic of "overpraising of students' intelligence," where "lowering standards just leads to poorly educated students who feel entitled to easy work and lavish praise."⁶³ She warns, however, "simply raising standards in our schools, without giving students the means of reaching them, is a recipe for disaster.

⁵⁷ Paul Tough, *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character* (New York: Mariner Books, 2013), 130-131.

⁵⁸ *Ibid*, 66-69.

⁵⁹ *Ibid*, 92.

⁶⁰ James Clear, "Forget Setting Goals, Focus on This Instead," last modified December 17, 2013, accessed March 1, 2014, <http://www.entrepreneur.com/article/230333>.

⁶¹ Paul Tough, *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character* (New York: Mariner Books, 2013), 92-93.

⁶² Carol Dweck, *Mindset: The New Psychology of Success* (New York: Ballantine Books, 2007), 192.

⁶³ *Ibid*, 187.

This just pushes the poorly prepared or poorly motivated students into failure and out of school.”⁶⁴ The perfect marriage, however, is when high standards are set where one can be challenged and nurtured where “All great teachers teach students *how* to reach big standards.”⁶⁵ The work of Benjamin Bloom lends even greater credibility to this point and its application to a variety of studies:⁶⁶

When Benjamin Bloom studied his 120 world-class concert pianists, sculptors, swimmers, tennis players, mathematicians, and research neurologists, he found something fascinating. For most of them, their first teachers were incredibly warm and accepting. Not that they set low standards. Not at all, but they created an atmosphere of trust, not judgment. It was, ‘I’m going to teach you,’ not ‘I’m going to judge your talent.’

We would live in a perfect world if everything was about growth mindset, motivation and intrinsic reward. Sometimes, however, we have to focus on the extrinsic in order to fulfill roles in particular circumstances and also when demands are imposed by larger entities. For example, we cannot fault students for being focused on grades. As teachers we want them to focus on learning the material, but for many students, those grades define them because they are immediately judged from the moment their grades are seen by everyone from a future teacher to a graduate school admissions board. Yo-Yo Ma, the famous cellist, argues however, there is no reason we cannot find intrinsic reward while doing something we don’t necessarily want to do. He is quoted saying, "It's about turning that little switch on inside yourself that goes from 'I have to do it' to 'I want to do it.' That's the essence of learning anything."

This obviously applies to a variety of settings, and shows we can find the reward in some activities we have to do. Sometimes, however, what we have to do leads to what we want to do. Mihaly Csikszentmihalyi says, “Some things we are initially forced to do against our will turn out in the course of time to be intrinsically rewarding.”⁶⁷ He expounds on the point that sometimes we have to break the ice to find purpose or something we enjoy. “Most enjoyable activities are not natural; they demand an effort that initially one is reluctant to make. But once the interaction starts to provide feedback to the person’s skills, it usually begins to be intrinsically rewarding.”⁶⁸ Examples of this are numerous, such as the student whose interest is sparked by a crystallizing experience in a subject or sport. This drawing intrinsic reward from the required to the elective activity is fuel to the growth mindset.

From mowing the lawn to academics, perhaps finding joy in everything from the mundane to the interesting is a feasible aim in our lives. In multiple books and articles on the topic such as

⁶⁴ Ibid, 187.

⁶⁵ Ibid, 191-192.

⁶⁶ Ibid, 191.

⁶⁷ Mihaly Csikszentmihalyi, *Flow: The Psychology of Optimal Experience* (New York: Harper Perennial Modern Classics, 2008), 67.

⁶⁸ Ibid, 68.

Flow: The Psychology of Optimal Experience, and nearly 60 years of detailed research, Mihaly Csikszentmihalyi shows how “flow” can happen anywhere and at any time in leisure, school, and work. Since 1956 he has studied composers, poets, professors, athletes, monks, nuns, indigenous peoples, and CEOs of major corporations.⁶⁹ Furthermore, and perhaps the most interesting fact, is that happy people experience flow on a more regular basis. Dr. Csikszentmihalyi even articulates this fact in *Happy*.⁷⁰ The key, however, is we cannot force ourselves into the flow state. Dr. Csikszentmihalyi’s decades of research proves that regardless of education, culture, occupation, gender, or society, flow is experienced by those who find purpose in what they do. In flow, a growth mindset and motivation find the perfect marriage. In the words of Mihaly Csikszentmihalyi:⁷¹

...It is when we act freely, for the sake of the action itself rather than for ulterior motives, that we learn to become more than what we were. When we choose a goal and invest ourselves in it to the limits of our concentration, whatever we do will be enjoyable. And once we have tasted this joy, we will redouble our efforts to taste it again. This is the way the self grows.

In addition to his book, in his 2008 TED Talk, Dr. Csikszentmihalyi makes the obvious connection between flow and motivation. He outlines, “How Does It Feel to be in Flow?” where one of the major points is “Intrinsic motivation—whatever produces flow becomes its own reward.”⁷² Dr. Csikszentmihalyi highlights this fact when he defines flow as “the autotelic experience”:⁷³

The term “autotelic” derives from two Greek words, *auto* meaning self, and *telos* meaning goal. It refers to a self-contained activity, one that is done not with the expectation of future benefit, but simply because the doing itself is the reward. Playing the stock market in order to make money is not an autotelic experience; but playing it in order to prove one’s skill at foretelling future trends is—even though the outcome in terms of dollars and cents is exactly the same. Teaching children in order to turn them into good citizens is not autotelic, whereas teaching them because one enjoys interacting with children is. What transpires in the two situations is ostensibly identical; what differs is that when the experience is autotelic, the person is paying attention to the activity for its own sake; when it is not, the attention is focused on its consequences.

⁶⁹ Mihaly Csikszentmihalyi, *Flow: The Psychology of Optimal Experience* (New York: Harper Perennial Modern Classics, 2008).; Mihaly Csikszentmihalyi, “Flow: The Secret to Happiness,” last modified October 24, 2008, accessed March 6, 2014, <https://www.youtube.com/watch?v=fXIeFJCqsPs>.

⁷⁰ *Happy*, directed by Roko Belic (San Francisco: Wadi Rum Films, Inc., 2011), DVD.

⁷¹ Mihaly Csikszentmihalyi, *Flow: The Psychology of Optimal Experience* (New York: Harper Perennial Modern Classics, 2008), 42.

⁷² Mihaly Csikszentmihalyi, “Flow: The Secret to Happiness,” last modified October 24, 2008, accessed March 6, 2014, <https://www.youtube.com/watch?v=fXIeFJCqsPs>.

⁷³ Mihaly Csikszentmihalyi, *Flow: The Psychology of Optimal Experience* (New York: Harper Perennial Modern Classics, 2008), 67.

Dr. Csikszentmihalyi talks about the neuroscience behind flow. Our brain can process a maximum of 110 bits per second and when we are comfortably engaged, we use about 60 bits per second. When someone enters a flow state, they use close to the 110 bits per second that they do not have the bits left to pay attention to anything else. We experience this in a myriad of ways when we ask ourselves, “Where did the time go?” or describe someone as “In the zone.” Some examples include engaging in a meaningful conversation, or a challenging academic class, or a composer writing a piece of music, or a professor doing research, or a runner in a race.⁷⁴ Dr. Csikszentmihalyi cites an interview he did with a famous American composer to describe someone in flow:⁷⁵

He doesn't have enough attention left to monitor how his body feels, his problems at home. He can't even feel that he is hungry or tired. His body disappears. His identity disappears from his consciousness because he doesn't have enough attention to do something really well that requires a lot of concentration, and at the same time feel that he exists. Existence is temporarily suspended.

Daniel Pink, in his book, *Drive*, cites the work of Dr. Csikszentmihalyi and others. He writes that when we find purpose and autonomy in our intentional activity, we can then pursue mastery, which is the essence of the growth mindset.⁷⁶ Any “master” of any area is never “there” and a person devoted to mastery can be found in any walk of life, even sushi chefs. In *Jiro Dreams of Sushi*, Jiro Ono is an 85-year-old sushi chef whose small Tokyo restaurant, Sukiyabashi Jiro, is considered to be the best sushi in the world. His life is the epitome of the pursuit of mastery as he repeats his daily routine and constantly innovates as he endlessly aspires to make the “perfect roll.”⁷⁷ K. Anders Ericsson, in *Road to Mastery*, and his dedicated research to the topic, has documented what he calls the “10,000-hour rule.” He initially studied musicians, and then masters in every profession, art form, and subject and found that 10,000 hours of dedicated practice to a craft is what it takes to achieve a true mastery level.⁷⁸ Malcolm Gladwell, in *Outliers*, dedicates an entire chapter to K. Anders Ericsson's profound work:⁷⁹

In study after study, composers, basketball players, fiction writers, ice skaters, concert pianists, chess players, master criminals, and what have you, this number comes up again and again. Of course, this doesn't address why some people get more out of their practice sessions than others do. But no one has yet found a case in which true world-

⁷⁴ Mihaly Csikszentmihalyi, *Flow: The Psychology of Optimal Experience* (New York: Harper Perennial Modern Classics, 2008), 53, 58; Mihaly Csikszentmihalyi, “Flow: The Secret to Happiness,” last modified October 24, 2008, accessed March 6, 2014, <https://www.youtube.com/watch?v=fXIeFJCqsPs>.

⁷⁵ Mihaly Csikszentmihalyi, “Flow: The Secret to Happiness,” last modified October 24, 2008, accessed March 6, 2014, <https://www.youtube.com/watch?v=fXIeFJCqsPs>.

⁷⁶ Daniel Pink, *Drive* (New York: Riverhead Books, 2011).

⁷⁷ *Jiro Dreams of Sushi*, directed by David Gelb (New York: Magnolia Home Entertainment, 2012), DVD

⁷⁸ K. Anders Ericsson, *Road to Mastery* (United Kingdom: Lawrence Erlbaum Associates, 1996).

⁷⁹ Malcolm Gladwell, *Outliers: The Story of Success* (New York: Back Bay Books, 2011), 40.

class expertise was accomplished in less time. It seems that it takes the brain this long to assimilate all that it needs to know to achieve true mastery.

Mr. Gladwell even argues that prodigies do not exist, that they simply put in the time and dedicated practice earlier in their lives, even Wolfgang Amadeus Mozart.⁸⁰ He gives the detailed example of The Beatles performing at strip-clubs in Hamburg, Germany for eight straight-hour sets. Also, part of the group, John Lennon and Paul McCartney, had been playing together seven years before performing in America.⁸¹ Mr. Gladwell writes, “By the time they had their first burst of success in 1964, in fact, they had performed live an estimated twelve hundred times...most bands today don’t perform twelve hundred times in their entire careers.”⁸²

Mr. Gladwell also cites the “genius” of Bill Gates, who came from a wealthy family in Seattle. He went to a private school called Lakeside, that in 1968, put thousands of dollars into a computer and computer club at a time when most college campuses did not have one. He also got to experience time-sharing with a link to a mainframe in Seattle. Later as a teenager during off hours, he eventually spent an average of eight hours a day, seven days a week of computer time at the University of Washington. By the time he dropped out of Harvard after his second year, he had been practicing computer programming for seven straight years. He easily surpassed the 10,000-hour rule and entered the computer world in its infancy.⁸³ Gates even admits, “I had a better exposure to software development at a young age than I think anyone did in that period of time, and all because of an incredibly lucky series of events.”⁸⁴

These examples show growth mindsets at work. While Mr. Gladwell makes valid points about the circumstances and opportunities for success for The Beatles and Bill Gates, they found obvious purpose, autonomy, and pursued mastery in a growth mindset that manufactured great success in their fields.

Dr. Carol Dweck also agrees that geniuses are not born, they are “cultivated.”:⁸⁵

And yet research is converging on the conclusion that great accomplishment, and even what we call genius, is typically the result of years of passion and dedication and not something that flows naturally from a gift. Mozart, Edison, Curie, Darwin, and Cézanne were not simply born with talent; they cultivated it through tremendous and sustained effort. Similarly, hard work and discipline contribute much more to school achievement than IQ does.

⁸⁰ Ibid, 42.

⁸¹ Ibid, 47-50.

⁸² Ibid, 50.

⁸³ Ibid, 50-55.

⁸⁴ Ibid, 55.

⁸⁵ Carol Dweck, “The Secret to Raising Smart Kids,” *Scientific American Mind*, November (2007).

Conclusion:

Those with a growth mindset will succeed in life more than those with a fixed mindset. While we are all dealt a different hand in life, the circumstances and opportunities can have an impact on our mindset and motivation. Being aware, however, of the different mindsets and the significant impact that intentional activity has on our happiness can help us in every aspect of our lives. We are life-long learners, and as long as basic needs are met, we can seek out ways to maximize our potential through intentional activity by finding purpose, being productively autonomous, and seeking mastery in our fields of choice.

Annotated Bibliography:

Anders Ericsson, K. *Road to Mastery*. United Kingdom: Lawrence Erlbaum Associates, 1996.

K. Anders Ericsson, has devoted his life research to what he calls the “10,000-hour rule.” He initially studied musicians, and then masters in every profession, art form, and subject and found that 10,000 hours of dedicated practice to a craft is what it takes to achieve a true mastery level.

Clear, James. “Forget Setting Goals, Focus on This Instead.” Last modified December 17, 2013. Accessed March 1, 2014. <http://www.entrepreneur.com/article/230333>.

James Clear writes a concise article that cites strong evidence that setting goals can be dangerous to our psyche. When we have not achieved goals we have set, we get a daily reminder of failure. Mr. Clear argues, however, that we should focus on putting systems in place that get us to our goals. By focusing on the systems at the forefront of our minds, and placing the end goal in the back of our brain, we find more intrinsic benefit as we work towards our desired benchmarks.

Csikszentmihalyi, Mihaly. *Flow: The Psychology of Optimal Experience*. New York: Harper Perennial Modern Classics, 2008

With nearly 60 years of detailed research, Dr. Mihaly Csikszentmihalyi highlights the science and examples of the autotelic experience, or “flow.” He shows how flow can happen anywhere and at any time in leisure, school, and work. Since 1956 he has studied composers, poets, professors, athletes, monks, nuns, indigenous peoples, and CEOs of major corporations. Furthermore, and perhaps the most interesting fact, is that happy people experience flow on a more regular basis. His decades of research prove that regardless of education, culture, occupation, gender, or society, flow is experienced by those who find purpose in what they do.

Csikszentmihalyi, Mihaly. “Flow: The Secret to Happiness.” Last modified October 24, 2008. Accessed March 6, 2014. <https://www.youtube.com/watch?v=fXIeFJCqsPs>.

Dr. Mihaly Csikszentmihalyi gives an engaging TED Talk about his life’s work on the topic of “flow.” He highlights how past a certain point, an increase in income does not necessarily mean an increase in happiness. Rather, however, those who find purpose in their lives will find greater flow experiences and live happier lives. We experience flow in a myriad of ways when we ask ourselves, “Where did the time go?” or describe someone as “In the zone.” Some examples include engaging in a meaningful conversation, or a challenging academic class, or a composer writing a piece of music, or a professor doing research, or a runner in a race.

Dweck, Carol. *Mindset: The New Psychology of Success*. New York: Ballantine Books, 2007.

Dr. Carol Dweck writes an incredible book that interweaves her life's work in the areas of mindset and motivation. Her work boils down to how a fixed or growth mindset can have large consequences or benefits in any walk of life. From education to sports to personal relationships, she cites examples and research that reinforces how mindset permeates every part of our being. For those with a fixed mindset, success or failure in any endeavor is a reflection of who you are and defines you. Those with the growth mindset see everything as an opportunity to grow and find intrinsic reward in the quest to improve.

Dweck, Carol. "The Secret to Raising Smart Kids." *Scientific American Mind*, November (2007).

Dr. Carol Dweck writes an article that concisely summarizes the main points of her research in the fields of mindset and motivation. The largest take-away from this article is that praising a student or child's ability over their effort can have dire consequences by putting them in a fixed mindset. If we praise effort over their ability, however, this will encourage a growth mindset and help foster greater growth of the individual.

Gladwell, Malcolm. *Outliers: The Story of Success*. New York: Back Bay Books, 2011.

Mr. Gladwell gives a new perspective and provokingly interesting understanding of what makes people successful aside from the romantic notion that they were born from nothing and rose to fame. He argues and substantiates, with a number of examples in a myriad of ways, how a person's success is not necessarily dependent on their merits and hard work. Instead, however, it is a combination of environment, opportunities, and factors that make up the success of the individual.

Happy. Directed by Roko Belic. San Francisco: Wadi Rum Films, Inc., 2011. DVD.

This documentary explores the fundamental tenets of what truly makes us happy. The producers explore the world of positive psychology and the "Happiness Equation," which yields that 50% of our total happiness comes from a set point or homeostasis, 10% comes from wealth, fame, and status, and 40% comes from intentional activity. While basic needs must be met with a certain level of income, when they are met, focusing more on the 10% does not increase happiness. Instead, when we focus on intentional activity and the components that we have control over, such as growth, relationships with family and friends, and a desire to help (community), we are exponentially happier people.

Hofer, Barbara. "Motivation in the College Classroom." *Teaching Tips*. (11), 140-150. California: Wadsworth, 2011.

This chapter explores fundamental tenets and theories of extrinsic and intrinsic motivation. Student goal orientation is discussed as well as the effect mindset plays in student views of intelligence as a fixed or growth trait. Hofer presents a fluid overview

of many motivation theories as well as an excellent tie-in to application inside and outside of the classroom.

Jiro Dreams of Sushi. Directed by David Gelb. New York: Magnolia Home Entertainment, 2012. DVD

Jiro Ono is an 85-year-old sushi chef whose small Tokyo restaurant, Sukiyabashi Jiro, is considered to be the best sushi in the world. His life is the epitome of the pursuit of mastery as he repeats his daily routine and constantly innovates as he endlessly aspires to make the “perfect roll.” The film explores his pursuit of mastery almost to a fault and highlights how one must always work towards growth.

Pink, Daniel. *Drive*. New York: Riverhead Books, 2011.

Daniel Pink writes about how the current motivation system of “carrots and sticks” or “if you do this, then you get that,” is outdated and cites how the power of purpose, autonomy, and the pursuit of mastery are the updates necessary to foster creative school and work environments. He cites examples that nurture motivation in a creative way such as successful tech companies and schools such as the Montessori and Waldorf school programs.

Tough, Paul. *How Children Succeed: Grit, Curiosity, and the Hidden Power of Character*. New York: Mariner Books, 2013.

Paul Tough explores and cites strong evidence how education should go beyond developing cognitive ability (intellect) and build character traits to help our students be successful. He also highlights how chronic stress detracts from people developing their full potential because of elevated allostatic loads. He goes into great detail how grit and curiosity can be encouraged and nurtured, even in at-risk neighborhoods and schools. While some have criticized Paul Tough’s work as a wandering replacement for parenting or to make-up for the lack thereof, the author believes that as teachers, coaches, and parents, these are growth mindset qualities we can all agree will benefit any child, teenager, or adult.