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The Nascent Nature of Grit in Education

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THE NASCENT NATURE OF GRIT IN EDUCATION

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Abstract

Grit first came on the scene that commands the American public's attention when introduced by leading Grit researcher Angela S. Duckworth. Angela and her team put forth that Grit may be one of if not the key determining factor that resulted in the difference between success and failure for individuals. Angela's team further purported that Grit may be developed in or taught to individuals thereby resulting in an increased opportunity for success. Angela Duckworth's speech on TedTalks started the conversation surrounding the possibilities inherent in Grit. By 2018, Duckworth had published a book on the topic of Grit. Angela's plea was for researchers across nations to pick up where her team had left off and to answer the remaining questions surrounding the concept of Grit but especially to discover answers related to whether or not Grit could be taught as a sort of rescue mission for the present state of educational systems as we know them. In recent years, research surrounding this topic has gone from almost non-existent to prolific. Researchers have answered the call and studied Grit across domains, countries, ages, socio-economic and demographic barriers. Ultimately, Grit can be nurtured, encouraged, and even perhaps taught directly in the same manner that other elusive non-cognitive traits can be. Several of the studies show that Grit along with other key non-cognitive factors consistently correlate to increased success. However, the increases in the elusive trait we refer to as Grit may be short lived. Grit may also be less affective to levels of success than originally thought and could lead to unintended negative consequences.

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CHAPTER I: INTRODUCTION

Nascent is an accurate term to describe Grit because it holds continuous promise for potential. Nascent originates from the Latin verb *nasci* meaning to give birth. Nascent itself is defined as just coming into existence and beginning to show signs of future potential. Grit is defined as a positive, non-cognitive trait based on an individual's perseverance of effort and passionate interest over time. Non-cognitive refers to skills such as motivation, integrity, and interpersonal interaction and is related to personality, temperament, and attitudes. Intellect is involved, but more indirectly and less consciously than with cognitive skills. All endeavors require the soft skills associated with non cognitive traits due to their effects on working well with other people and functioning effectively in a work environment.

John F. Kennedy saw the need to restore the confidence and swagger of Americans after the Soviets beat America to both launching the first satellite and having a man orbit the earth. Kennedy's dramatic expansion of the U.S. Space Program with the primary goal of landing a man on the moon in less than 10 years time was a means of focusing and mobilizing the nation's lagging space efforts to that point. Likewise, researcher Duckworth (2007) got the nation's attention when she nationally publicized the call to arms on behalf of the nation's educational systems. Duckworth, Peterson, Matthews, and Kelly's 2007 work focused on the trait Grit as a way of defining the essence of the changes that needed to take place in the nation's schools. Educators had long been discussing ways to continually improve the systems in place and in many areas were succeeding in very important ways (i.e. the transition surrounding the education of students with disabilities). The desire to more clearly define what leads to and sustain success for

students was gaining more and more attention and begging researchers to explore further in order to validate existing measures and strategies used and to discover and establish newer and more efficient strategies and measures. Educational researchers also wanted to find solutions to the ever widening mental health and behavioral struggles faced within our nations schools. The research surrounding Grit initially focused on proving that correlations do indeed exist between Grittiness and successful habits. However, there has been a constant and driving question as to whether grittiness can be taught and if teaching it is key for the future of the educational system.

While research surrounding Grit appears to be a never-ending debate with a steady supply of new research to fuel its continuation. The concept of Grit offers a solution to the intractable and consistently low performance observed in schools serving low-income students. Purporting the idea that if we are able to help demographically dissimilar students become grittier, they can then claw their way out of poverty, these champions of the trait Grit challenge researchers to discover how to apply the effects of Grit as a leading strategy in educational reform (Lipman, 2013; Rock Center, 2012; Tough, 2011; Tough, 2012).

On the skeptics side of the debate, Grit is reported to be only an empty promise with no real potential for supporting the needed change. This is a Social Darwinist style of explanation for why poor communities remain poor – one that blames the victims of entrenched poverty, racism, or inferior schooling for character flaws that caused their own disadvantage (Anderson, 2014; Isquith, 2014; Noguera & Kundu, 2014; Ravitch, 2014a; Ravitch, 2015; Shapiro, 2013; Snyder, 2014; Thomas, 2013).

Although Del Giudice (2014) shows how both sides have merit, it is important to pay attention to the very real dangers that may inadvertently result from instituting Grit as a foundational piece of educational reform efforts. Although, the upside outlined by Del Giudice (2014) also bears witness to the dire need for changes when it establishes Duckworth's research amidst "a shift away from blaming teachers, class size, lack of money, family conditions, and other 'situational' factors, which, while important, have increasingly over the past century let the student off the hook and turned under-performers into victims of circumstance rather than creators of opportunity" (p.5). According to Ris (2015), a reading of the current body of research surrounding Grit might allow educational researchers to assume that this line of inquiry could equally lead to either student empowerment or morally exempt abandonment.

Delving purposefully into this body of continually expanding research which largely confirms Duckworth's original findings shows that as in chemistry, Grit is nascent in nature in that it is reactive especially in the presence of other factors such as a strong sense of community and cultures that have or promote interdependent communities (Datu, Valdez, & King, 2016; Datu, 2017; Lee & Sohn, 2017). As time progresses, and additional studies are added to the body of literature surrounding Grit, longitudinal studies are in high demand as are domain specific studies that further explore the nature of the beast we seek called Grit. Longitudinal studies are those that study participants repeatedly while considering the same variables each time. Generally, longitudinal studies are observational in nature but they can also be structured as randomized experiments. In the most recent studies, Grit's dark side has been brought to light in its ability to push in-

dividuals towards goals that may in the end be harmful and come at the ultimate price (Anestis & Selby, 2015).

Finally, Grit is nascent in regards to education in that it refers to the birth process. Labor pains that the future of educational systems will emerge from have begun. What is born will be a result of the efforts of those researchers summarized today along with many others adding to the cacophony. This paper aims to harmonize the portion addressed by the body of literature highlighted here while exploring further the questions: Can Grit be taught? Will increasing Grit improve outcomes for students? Are there potential negative side effects of increasing Grit in students? This thesis will also briefly comment on possible future directions for researchers interested in Grit and state some ways the existing body of information surrounding Grit can be applied to today's existing education system.

Other terms that may need definition include: fALFF which is defined as the fractional amplitude of low-frequency fluctuations in the brain. DMPFC which is a region of the brain known as the dorsomedial prefrontal cortex. Increased activity in this region of the brain was found to be associated with higher levels of Grit.

CHAPTER II: LITERATURE REVIEW

Literature Search Procedures

Chapter two explores the published literature on GRIT and the following questions: Can Grit be taught? Will increasing Grit improve outcomes for students? Are there potential negative side effects of increasing Grit in students? To locate the literature for this thesis, searches of Educator's Reference Complete, Expanded Academic ASAP, Peer-reviewed Journals at Western CEDAR, and Education Journals were completed. Additional literature used in this thesis was located through searches of ERIC, Academic Search Premier, IBSCO, and Google Scholar with publication dates of 2010-2018 and cross-referenced from key studies listings of references. These searches were narrowed using the following keywords: "GRIT", "resiliency", "GRIT and teacher efficacy", "a history of GRIT", and "GRIT in education". This list was narrowed by only reviewing published empirical studies from peer-reviewed journals that focused on Grit, its correlations to achievement and emotional well-being, and any possible methods of increasing Grit in students of all ages and demographics while addressing the guiding questions. The key words that were used in these searches included "Grit," "Grit and academic achievement," "teaching Grit," "Grit and teacher efficacy," and "Grit and applications for professional development." The structure of the second chapter is to review the body of literature surrounding Grit in two sections in this order: Grit's ability to enhance achievement especially with regard to academic achievement and applications for Professional Development; and Grit's reactivity with other factors which may result in unintentional non-preferred outcomes when aiming to increase the Grit factor within future generations.

Grit and Success

Grit, originally defined as a positive, non-cognitive trait based on an individual's perseverance of effort and passionate interest over time, was later discovered to need adverse conditions present to demonstrate its nature. Duckworth and her team of researchers introduced the world to the concept that Grit may be a key ingredient that correlates with success and purported that if we can teach students to increase their Grittiness we would be helping them to increase their success in both school and in sustained personal achievement in life (Duckworth et al., 2010). Since the work of Duckworth et al. (2010), other research teams have conducted numerous studies to both build the body of literature surrounding this topic and to explore specific areas of application.

Grit involves an individual's tendency to strive to achieve long-term goals while maintaining continual passion and perseverance and was found by Duckworth et al. (2010) to play a key role in personal achievement. The initial research, along with her TED Talk on the subject, and other media publicity surrounding these discoveries was perceived as revolutionary and groundbreaking. The primary aim of the research studies surrounding Grit initially was to validate the determination that the trait that we now know as Grit, that was consistently observed in successful endeavors, could be defined separately from other better known non-cognitive influences such as personality, conscientiousness, self-monitoring, organization of values, and self-control (Duckworth et al., 2010).

After the initial widely published studies conducted by Duckworth and her team, researchers began to expand on and validate the original findings surrounding Grit and to explore whether Grit could be taught or increased in individuals in the same manner in

which other non-academic skills are nurtured and developed. Researchers also aimed to explore the possible implications that increasing Grit would have for students and teachers as well as in a wide variety of educational systems and applications around the world.

In a 2014 study by Duckworth and Gross, the non-cognitive traits of self-control and Grit were highlighted as two of the key variables that help us understand what drives and maintains success in different aspects of people's daily lives (Oriol, Miranda, Oyanedel, & Torres, 2017). Likewise, Mooradian, Matzler, Uselac, and Bauer (2016) extended existing research specifically by relating Grit to business success by testing an assumption that perseverance and passion are foundational to success. Guiding questions of the research by Morradian et al. (2016) included the hypotheses that perseverance is positively related to innovation success; the study also included the hypothesis that perseverance is positively related to organization performance and the second component of Grit (consistency of interest) is negatively related to innovation performance. These hypotheses were developed based on the fact that innovation requires a challenge of the status quo for new ideas to be introduced (Mooradian et al., 2016).

An initial outreach to 1,500 participants resulted in 281 usable completed questionnaires that were modified slightly from previously validated scales and measures to allow for comparability with results of previous research and to ensure using questionnaires that have largely already been proven. Ultimately, the study showed that Grit affected success directly and in effects that were mediated by innovativeness. This study confirmed Grit and its applications for education in that it validated Grit as a predictor of success along with other studies that validated Grit's effects as they relate to success in additional areas including education, military training, marriage, and income competitive sales workplace

success (Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014). These studies together helped to establish a pattern of Grit's ability to affect levels of success both academically and in a broader sense.

The study by Mooradian et al. (2016) confirmed that Grit was a key factor specifically in venture business success; while Eskreis-Winkler, et al. found in their 2014 study that Grit demonstrated predictive validity across four different life constructs including marriage, military, education, and the workplace. When considered together with other validating studies the results suggest that Grit is a reliable predictor of and key ingredient to success for individuals who are persisting in many important life endeavors. Further increasing interest in the possible applications of Grit for students and teachers as well as numerous business applications.

In 2014, Duckworth and her colleagues studied soldiers in an Army Special Operations Forces selection course, sales representatives, and juniors in public high school. Duckworth's team wanted to determine if Grit's relational nature to success held true across applications. This landmark study demonstrates Grit's ability to predict retention success even more accurately than established context-specific predictors of retention and success. (e.g. intelligence, physical aptitude, Big Five personality traits, job tenure) (Eskreis-Winkler et al., 2014). These results validate that Grit can be defined separately from and have a unique effect on success that is different from that of other better known traits such as personality, self-control, and other non-cognitive traits which have been commonly used in applications such as selecting college or military program applicants. Eskreis-Winkler et al. (2014) also note that this study was an important part of the body of literature resulting from the research in that it is longitudinal in nature. Having Grit

validated as a separate factor affecting success levels is important in that researchers were hoping at the time that, given a chance to be expanded upon, Grit would be a sort of magic bullet that would propel educational theory and practice as well as processes used in other industries forward by leaps and bounds.

A study conducted in 2015 by Lucas, Gratch, Cheng, and Marsella, contributed to the literature by adjusting the conditions under which grit has an impact to controllable lab conditions. Lucas et al. (2015) studied 1,426 undergraduates who received course credit in return for their participation. Lucas et al. (2015) also studied a group of 2,132 participants recruited from Craigslist and paid $25 each for participation. Finally, they studied 3,830 participants recruited via Amazon's Mechanical Turk and paid at least $2 each. Results of this study confirmed that Grit is characterized by an individual's ability to persist and persevere under pressure. Understanding that Grit needs pressure or an adverse circumstance to bloom is key to understanding what we know about Grit. Those who possess the highest levels of Grit have commonly experienced a large share of adverse experiences. Researchers sought to determine if Grit was truly the magic pill that they hoped it was. Lucas et al. (2015) reported that Grit was not much more than a new name for an old concept. They argued that conscientiousness and Grit are essentially the same thing.

In 2017, Ion, Mindu, and Gorbanescue set out to determine the validity of Grit in predicting work relevant outcomes. The study questioned whether Grit was one of the best predictors of academic performance and other key outcomes. They also questioned if there was any weight to criticism of Grit's importance and if Grit can be considered a valid predictor of outcomes. The study's participants consisted of 170 Romanian working

adults. Ion et al. (2017) reported that most of the validating studies conducted to that point had been focused on educational outcomes and that results were still unclear. Ion et al. (2017) suggested that Grit does not reliably explain personality-job performance and job satisfaction relationships. This study reminds future researchers that more research should be conducted before using Grit as a basis for selection or for interventions that aim to deal efficiently with various aspects of performance or job satisfaction (Ion et al., 2017).

Rasskazova, Ivanova, and Sheldon's 2016 study posed the question: "if Maslow's hierarchy of needs is met first will Grit be increased in individuals?" Rasskazova et al. (2016) aimed to synthesize the commonly understood theories of self-determination and Maslow's hierarchy of needs. These two large panel studies consisted of data that was entirely self-reported and found that fulfilling low-level and high-level needs of both groups of participants had strong main effects upon many positive work outcomes including intrinsic motivation and organizational commitment. Rasskazova et al.'s 2016 study had many limitations including that its translation made results more difficult to discern, that data was entirely self-reported, that the need-satisfaction measures used for the study were non-standard and therefore have largely unknown properties and correlates, and that it was not longitudinal in nature (Rasskazova et al., 2016). However, the study is still important when considering the body of literature surrounding Grit in that it highlights a facet of the nascent nature of Grit that may be important to future studies. If explored further this may have applications for education when looking at students from diverse backgrounds when maintaining the foundational nature of Maslow's needs theory in the

educational system. It may also have applications for professional development in raising educator's awareness of student need levels with the trait Grit and its effects in mind.

A later study by Raphiphatthana, Jose, and Salmon (2018), further explored possible benefits of Grit by asking if dispositional mindfulness positively predicts Grit both cross-sectionally and longitudinally and if the mindfulness facets that have been shown to be stronger predictors of emotional regulation skills also positively and significantly predict the two components of Grit. Three hundred and forty-three undergraduate students from a mid-sized university completed an online survey during a laboratory session as part of their second year. Two mindfulness facets including 'not judging' and 'acting with awareness' predicted increases in two different aspects of Grit over time. The results of the study by Raphiphatthana et al. (2018) implied that by tending to present activities, one is more likely to sustain interest in long-term goals. Additionally, by being non-judgmental of one's thoughts and feelings, one is more likely to keep persevering and working toward long-term goals. These findings suggest that dispositional mindfulness helps individuals develop characteristics that support them in achieving their long-term goals.

Further, according to Raphiphatthana et al. (2018), mindfulness interventions may also boost Grit as a by-product. Interventions that prioritize non-judging and acting with awareness have been shown to be the most relevant to Grit. Raphiphatthana et al. demonstrated in their 2018 study that Grit can be increased through dispositional mindfulness interventions. Later studies would validate this finding. They found that Grit responds in a similar fashion when we attempt to increase it with interventions historically used to increase other more well known cognitive traits. Grit, like other non-cognitive traits, is

elusive to us in that we can sense its presence and see its effects yet struggle to conceptualize it with its almost supernatural nature.

A key study by Oriol et al. (2017) used two structural equation models that allowed them to observe the effect of both self-control and Grit on academic efficacy and satisfaction with school. The study consisted of a large sample size that spanned educational levels. This well designed study built upon the work of well-known researchers like Duckworth et al. (2010). Oriol et al. (2017) found that self-control was related to promoted delayed gratification and directly influenced thoughts, emotions, and impulses. They also found that Grit enhances the achievement of goals through perseverance (Oriol et al., 2017).

Wanting to show more concrete evidence for the elusive trait of Grit, Wang et al. (2017) explored activity in specific regions of the brain and its implications for and connections to the concept of Grittiness. The study sought to determine if there was specific brain activity associated with Grit and other success enhancing non-cognitive factors. Specifically, this study asked if spontaneous activities in the prefrontal cortex (PFC) predict academic performance and whether or not those activities in the PFC mediate the influence of Grit on academic performance (Wang et al., 2017). The research team looked at the association between Grit and the fractional amplitude of low-frequency fluctuations (fALFF) in the brains of healthy adolescent students using resting-state functional magnetic resonance imaging. This team of researchers was able to identify spontaneous activity in the dorsomedial prefrontal cortex (DMPFC) and show that it was related to individual differences in Grit. Briefly, the study demonstrated a unique functional neural mechanism related to Grit. Grit was shown to be negatively related to the regional fALFF in the

right DMPFC. The right dorsomedial prefrontal cortex is the region of the brain that is involved in self-regulation, planning, goal setting and maintenance, and counterfactual thinking for reflecting on past failures. Furthermore, the work of Wang et al. (2017) indicated that the spontaneous activity of the right DMPFC acts as a neural link between Grit and academic performance. Finally, findings may have implications for education in that Grit-related behaviors and neural training programs can be developed to improve students' Grit-related skills. Wang et al. (2017) noted that the correlation may be with Grit when considering counterfactual thinking and its ability to improve Grit scores. This key study demonstrated physiological evidence for Grit and its association(s) with academic performance with the DMPFC being identified as the neural link between the two. Even more exciting when considering the body of literature surrounding Grit is the possibility for follow ups to this study as a part of the longitudinal project the data was mined from (Wang et al., 2017). With the evidence for Grit validated and shown in a concrete way within specific regions of the brain, researchers refocused their attention to Grit's ability to increase academic success.

The previously discussed studies demonstrated and validated the trait of Grit. They defined Grit and considered it separately and in addition to other better-known predictors of success. Finally, they showed that Grit had some affect on success levels both academically and in wider applications. Ion et al. (2017) also warned of possible negative uses, correlations, and consequences of applying what is known about Grit to professional development and other more business-minded applications. With those elements of Grit being initially established and the challenge to explore further broadcasted, researchers next focused closer on academic associations and applications of Grit. Now armed

with the hopeful perceptions that Grit could be increased and did affect success levels,

researchers held high hopes that Grit would be a key element to increases in student aca-

demic success and have important professional development applications for the educa-

tion field.

A study by Duckworth, Quinn, and Seligman in 2009 noted that Grit was related

to teacher effectiveness. A study noted in this publication by Furrer, Carrie, and Skinner,

Ellen (2003), another by Guay, Marsh, Senecal, and Dowson (2008), and finally one by

Miner, Dowson, and Devenish (2012); have documented the role that a sense of related-

ness in the educational context played. Sense of relatedness was associated with academ-

ic achievement, motivation, and engagement. While looking closer at student related edu-

cational applications of Grit, a study by Cosgrove, Chen, and Castelli (2018), studied Grit

levels in adolescents enrolled in secondary education grades 7-12 across one large south-

ern school district where more than 51% of the population received free and reduced

lunch. Cosgrove et al. (2018) found that age, the students' number of advanced classes,

Grit, and each student's total number of absences were all correlated with academic per-

formance. Students who had higher Grit and lower total absences performed better on

English, Math, Science, and Social Studies. The purpose of this study was to examine the

relationship of Grit as a construct representing perseverance to overcoming barriers. The

study also attempted to look closer at the total number of student absences and their ef-

fect on academic performance while controlling for demographics and body mass index

(BMI). Interestingly, the study found that Grit and school attendance might serve as a

more accurate measure of protective factors even over cardiovascular health and BMI

(Cosgrove et al., 2018).

Another researcher, Datu, conducted a 2017 study that investigated the associations between students' levels of relatedness to parents, teachers, friends, and the Grit dimensions, as well as overall Grit. Specifically, Datu (2017) asked if it was possible that Grit was a psychological resource that could reach its full potential when combined with meaningful interpersonal relationships. Datu (2017) also wanted to know whether environmental conditions which enable satisfaction for the basic needs for relatedness and other psychological needs (i.e. autonomy and competence) might promote intrinsic motivation and adaptive functioning.

Just over 600 Filipino secondary students participated in the study with an almost equal number of males and females participating. This is a comparison study to existing findings that were conducted in less collectivist cultures. The researcher Datu found what he expected. Datu (2017) found that a sense of relatedness to various social partners was significantly correlated with Grit. Not surprisingly, given the nature of teacher-student relationships, relatedness to teachers in a collectivist culture was shown to have the strongest association with Grit. Results of this study suggest that it is likely that teachers are able to increase student levels of commitment and perseverance by designing academic tasks that require constant effort and determination. Relatedness to teachers and parents were shown to be related to concrete long-term educational benefits like increases in academic engagement. The findings provided further evidence regarding the salient role of the social organization of collectivist cultures (Datu, 2017).

In 2017, Oriol, Miranda, Oyanedel, and Torres set out to discover the strength of the relationship between self-control and Grit in both primary and secondary students. This team of researchers also wanted to know if both Grit and Self-control would be pre-

dictors of self-efficacy and school satisfaction in students from the primary and the secondary educational stages. Oriol et al. (2017) asked whether academic self-efficacy could act as a mediator between self-control and Grit. Oriol et al. wanted to know if self-efficacy could be a more global indicator of academic success. The researchers also posed questions regarding whether or not gender differences would be present. Over 15,000 students participated in this study. The sample was divided into roughly 10,000 primary students and 5,000 secondary students. Both groups were almost evenly distributed between males and females. Oriol et al. (2017) explored the guiding questions of the research completed and found that Grit and self-control have strong associations both for primary students and secondary students. Oriol et al. found that Grit is related to academic self-efficacy and that only secondary students showed relationships between school satisfaction and Grit. (Oriol et al., 2017).

Lee and Sohn (2017) asked questions regarding the specific domain of music students and the manner of practice they demonstrated. Lee et al's 2017 study showed that deliberate practice mediated the relationship between Grit and academic grades. The findings of the study supported Grit as an alterable force that motivates deliberate practice and results in increased scores. Lee and Sohn's study also confirmed that deliberate practice has a meaningful effect on academic achievement (Lee and Sohn, 2017). Present day effective practice in elementary classrooms commonly incorporates findings of this and other similar studies in its approach to teaching reading and addressing emotional intelligence skills for all students. At this point in an exploration of the body of literature surrounding Grit one might perceive, as researchers did initially, that Grit was indeed a 'magic bullet' of sorts that could help solve many concerns facing today's educational

systems. However, as teams of researchers continued to look closer and to isolate Grit into studies that were more and more domain specific the relatively minor associations that Grit had with academic success when compared to other similar traits became more emphasized.

A comparison study in 2014, conducted by Ivcevic and Brackett, sought to discern if the perceived correlations between target predictors including conscientiousness, Grit, and emotional regulation ability and school outcomes were valid. The study completed by Ivcevic and Brackett (2014) was published in the *Journal of Research in Personality.* The study by Ivcevic and Brackett (2014) confirmed that all school outcomes were significantly predicted by conscientiousness and emotional regulation ability. Ivcevic and Brackett's 2014 study did not find correlations between Grit and school success. Reasons for this disparity of results when compared to original Grit studies may be able to be explained by the small sample size of this study and its participants being limited to private school students.

The findings of Ivcevic and Brackett (2014) showed that Grit was not related to student academic achievement (Ivcevic & Brackett, 2014). Future researchers should be careful to consider these studies as a way to either prove or disprove the effects of grit on school outcomes and the 2014 study by Ivcevic and Brackett can be used to confirm other previously discovered corollaries between broad personality traits and self-regulation abilities in their ability to predict school success (Ivcevic & Brackett, 2014).

One such domain specific study was published in the *Information Systems Education Journal* in February of 2018 and showed that employment status and Grit were related when studied domain specifically. The study also exposed relationships that were not

completely consistent with existing research. One of the challenges to this study is that it did not account for related work factors (Brooks & Seipel, 2018).

A similar domain specific study conducted by Miksza and Tan in 2015 showed that two predictor variables, students' tendencies to exhibit Grit in their learning and their tendencies to be reflective about their practicing, were consistently related to outcome variables. Miksza and Tan (2015) demonstrated that cultivating dispositions of Grittiness would help students be more efficient, achieve flow in their practicing, and be confident independently when learning. This study has possible implications for supporting extensive practice with reflection in the primary level of student's educations especially in regards to reading instruction (Miksza & Tan, 2015). This study again highlighted Grit's nascence in that it supports things such as efficiency, flow of practice, and confidence as independent learners, which hold promise for resulting in increased levels of success. However, it also once again showed Grit to be marginal or supportive in nature rather than extensive.

A domain specific study that took place in 2017 demonstrated that Grit-S, the short grit scale developed and validated by Duckworth et al. (2009), scores correlated with the pursuit and successful attainment of postgraduate training but not with academic success during the didactic years of a PharmD program. This study may be less reliable in that the response rate was below the 50% mark from an originally relatively small sample size of third- and fourth-year pharmacy students (Palisoc, Matsumoto, Ho, Perry, Tang, & Ip, 2017). Palisoc et al. (2017) were credited with this study that asked if the findings correlating Grit and achievement in areas such as the completion of a military special forces course, the retention of sales representatives, staff retention in high schools in dis-

advantaged school districts, and teacher effectiveness would also predict for PharmD students pursuing additional specialized training such as postgraduate residencies or fellowships and/or correspond with academic didactic success in a PharmD program (Palisoc et. al., 2017). Students were more inclined to pursue postgraduate training with higher academic success and higher Grit-S. Students with higher Grit-S were also more likely to obtain a training position after graduation (Palisoc et al., 2017).

A study by Akos and Kretchmar (2017) aimed to explore a growing interest in supplementing traditional measures used to make decisions about which applicants to admit using non-cognitive predictors of college success. This domain specific study investigated remaining research questions surrounding non-cognitive factors and Grit correlation with predicting college success. This study found that grade point average is a "minor accomplishment" rather than an extraordinary achievement that can be explained by or correlated to Grittiness. This study highlighted the fact that the research surrounding Grit is hesitant to suggest that Grit requires a narrowing of interests. Increasing Grittiness is a trade off between breadth and depth. This study suggests that it may be beneficial to college students to not be Gritty in that they will not limit or narrow their opportunities. Therefore, colleges should remain with measures that predict everyday kinds of success, such as GPA, rather than moving to focus on the "constellation of non-cognitive factors" (Akos, & Kretchmar, 2017, p. 184). The realization, that while Grit was a part of what assisted success for individuals it may not be as powerful a tool as originally thought, was accepted as researchers began uncovering an even darker possible side of attempting to increase Grit in individuals.

Unintended Consequences

While much of the research surrounding the concept of Grit points to its correlates with increased and prolonged successes, a few studies have begun to shine light on some of the darker sides of Grittiness. *The Journal of Research in Personality* published a study that sought to determine if Grittier individuals were prone to spend time working on unsolvable or extremely difficult problems to the detriment of completing an entire task and/or completing more problems on a given task, and whether the same results could be seen in laboratory-created environments where the theoretical need for adverse conditions to highlight Grittiness were controlled for. The study found that Grittier individuals consistently invest more effort and persist even in tasks that are not going well. Grittier individuals were also found to be less prone to give up when failing even if they incurred a cost for persistence. Positive emotions and expectations were found to partially mediate the relationship between Grit and the decision to persist when losing. The results of the study established that failure is a necessary condition to differentiate behavior by Grit. Individuals with higher levels of Grit and those who demonstrate less Grittiness engage equally when succeeding, but Grittier individuals persist more when failing (Lucas, Gratch, Cheng, Marsella, 2015). In the study conducted by Lucas et al. (2015), cheating was a possible limitation due to the design of the study along with the fact that the study did not measure the conscientiousness of the participants. Although Lucas and his team showed a possibility for a handicap resulting from persistence even while failing, other research has shown that Grittier individuals do better in education and employment applications overall (Lucas et al., 2015).

An article published in the *Journal of Online Learning* showcased a study where students with diverse backgrounds or those who have been out of school for several years were shown to have unique needs based on their distinctive demographic characteristics. The study looked at students' perceptions of the importance of and satisfaction with supports currently in place, personal factors affecting students' lives, and the students' individual Grit levels. The study established differences between white and non-white students. While the study offered more of a discussion than a solid addition to the research, it is important in that it highlights the ever-present differences found among different socioeconomic and demographic groups of students. The study posed questions surrounding how to better address the individual needs of a diverse student body, especially underrepresented minority students (Milman, Posey, Pintz, Wright, and Zhou, 2015).

A study by Vainio and Daukantaite in 2016 delved into the direct and indirect mediating effects between Grit and well-being. This study explored how demographic variables corresponded to Grit. The study employed a mediation analysis strategy. The study found that Grit was strongly related to psychological well-being and levels of satisfaction with life. These relationships were mediated by an individual's sense of coherence and authenticity. The results of this study offered further support for the humanistic psychology perspective. Well-being was supported when viewed as a growth process toward the fulfillment of ones' potential and finding authenticity. Grit is a motivational aspect that could be enhanced in students via appropriate interventions, as has been done with other non-cognitive traits such as gratitude (Dahlsgaard, Peterson, Seligman, & Candland, 2005; Tough 2013).

Grit appears to be beneficial when involved in new approaches to learning and teaching such as emphasizing perseverance of effort instead of noting levels of talent between children. Authenticity could be magnified via discovery of ones' own values and goals. Noteworthy connections between Grit and well being were found, suggesting that interventions designed to improve Grit by ensuring important resources for a strong sense of coherence and authenticity should be considered. The results of this study suggest that Grit requires a sense that the world is coherent and an authentic connection with the self in order for it to fully benefit individuals' well-being (Vainio & Daukantaite, 2016).

A 2015 study by Anestis and Selby found that higher levels of Grit predicted more frequent suicide attempts. The suicide attempts were found to be with clear lethal intent even when accounting for critical covariates. Those who reported higher levels of Grit reported the most frequent suicide attempts. Non Suicidal Self Injury may increase suicidal behavior by facilitating increased persistence even in the face of pain and death (Anestis & Selby, 2015). This study was pivotal in the addressing of non-academic traits affecting students in that it negated or diminished escape theories of suicide. This key study highlighted emerging beliefs that are widely accepted and persistent theories surrounding suicidal behaviors involving a primary emphasis on escape theories were largely off target, at least until its considered that Non Suicidal Self Injury is a type of escape behavior that correlates with suicidal behavior. Limitations of the study are specifically its cross-sectional design, which does not allow for causal inference. Many of the components of this study involve changes over time, which require longitudinal studies to truly assess the perceived correlates. Finally, this study's participants were undergraduates who may qualify as high functioning, and therefore the results of this study may not

transfer to a more severe clinical sample. With regard to Grit, this study is important in that it highlights one of the possible unintended consequences; namely that increasing levels of Grittiness in students may lead to higher rates of self-injury and higher rates of suicide. Finally, this study contributed to the body of literature surrounding the concept of Grit by purporting the question of whether or not increased Grittiness would lead to increased or elevated adverse behaviors for future studies to discover (Anestis et al., 2015).

A study by Barton and Miller (2015) noted that their findings suggested that personal spirituality may be foundational. The study showed that spirituality was key to positive psychology traits in the majority of people. The authors went on to say that personal spirituality in the vast majority of people appears to be fundamental to the formation of positive virtues. Grit, optimism, forgiveness, and even meaning in life were affected by personal spirituality or the lack thereof (Barton & Miller, 2015). While the nature of the relationship between the variables is a matter of conceptual interpretation, a potential adult development model can be inferred around the relationship between spirituality and positive psychology but needs to be tested longitudinally (Barton, & Miller, 2015). In the study, Barton and Miller completed a survey assessing daily spiritual experiences, forgiveness, gratitude, optimism, Grit, and meaning. Frequency of substance use and level of depressive symptoms was assessed to determine the relative protective benefits of Grit. The level of personal spirituality and the level of positive psychology traits were found to coincide in 83% of adolescents and emerging adults and in 71% of older adults. A minority subgroup of virtuous humanists showed high levels of positive psychology traits but low levels of personal spirituality across both age cohorts. Depression

levels were found to be inversely associated with positive psychology traits and personal spirituality was determined to be protective against substance use (Barton & Miller, 2015).

Gheith and Aljaberi found in 2017 that an interactive training program impacted the development of non-cognitive skills better than using a traditional training program. The study found specifically that the interactive training programs helped foster three of the key non-cognitive skills: empathy, growth mindset, and Grit. The results of the study stated that effectiveness could be contributed to activities that were found to be relevant to real-world contexts, and that this could have contributed to attracting students' attention and boosted their motivation for completing the various tasks. The results of this study contrasted with a previous study by Angela Duckworth and her team in 2017 that noted significant results with regard to academic year variable. The study by Gheith and Aljaberi (2017) found that the training program did not contribute to developing planning skills. The study also showed a lack of contribution to developing locus of control and self-confidence skills in students in spite of affecting achievement and problem-solving skills in students (Gheith & Aljaberi, 2017).

The above studies show that, although the initial findings surrounding Grit seemed to have key implications for the future of education and professional development of educators, the associations Grit holds are not more powerful than other already commonly used predictor variables and may not be as promising as originally perceived to be. However, it is clear that Grit holds a place at the table as one of the factors to consider when undertaking the overwhelming responsibility of educating the world's future

populations. Even if that place can be better explained and understood when assigned to other better-known names.

Hattie, Gurung, and Landrum (2015) created a chart that visually synthesized findings from 1,400 meta-analyses of 80,000 studies involving 300 million students to show relative to each other how over 250 influences on student achievement impacted student achievement. The visual representation showed that grittiness was likely to have some positive impact on achievement but did not have the potential to considerably accelerate achievement. Many other factors, such as those strategies supporting student self-efficacy, were shown to considerably accelerate achievement. This study's results highlighted the fact that while grit does have value for increasing achievement, it does not possess the significant level of power previously assumed to affect achievement levels, and other strategies and influences are clearly more effective. The Visible Learning Program materials are licensed from the Visible Learning Limited Partnership and Cognition Education Group.

CHAPTER III: DISCUSSION AND SUMMARY

Summary of Literature

Initial studies surrounding Grit defined it as a two-dimensional personality trait comprised of consistency of interests and perseverance of effort despite outward circumstances being favorable or adverse. Grit was later studied as a three dimensional construct with the realization that grit requires adverse circumstances to truly develop and/or show its predictive power related to levels of success (Datu, Yuen, & Chen, 2017; Duckworth et al., 2010). Studies by Mooradian et al. (2016) and Eskreis-Winkler et al. (2016) together helped to establish a pattern of grit's ability to affect levels of success both academically and in a broader sense. The study by Mooradian et al. (2016) confirmed Grit's status as a key factor specifically in venture business success. Eskreis-Winkler, Shulman, Beal, and Duckworth (2014) found in a 2014 study that Grit demonstrated predictive validity across four different life constructs including marriage, military, education, and the workplace.

Early research held out trait Grit as a sort of magic bullet that held promise for numerous pressing areas including education (Duckworth et al., 2010) Duckworth et al. established that Grit could be defined and studied separately from other better-known non-cognitive traits. This led to research seeking to validate the original findings and to discover whether Grit was a trait that could be taught or increased in individuals; especially in the same manner that other non-cognitive traits were supported. (Duckworth & Gross, 2014) Grit is a productive personality trait that could be enhanced in students via appropriate interventions as has been done with gratitude (Seligman et al., 2005, 2009; Tough 2013). Raphiphattana et al. (2018) demonstrated that Grit can be increased thru

dispositional mindfulness interventions. The results of a 2016 study suggest that Grittiness in goal pursuits requires both a sense that the world is coherent and an authentic connection with the self in order for it to fully benefit well being (Vainio & Daukantaite, 2016). A study by Barton and Miller (2015) noted that personal spirituality may be foundational to positive psychology traits in the majority of people.

When considered together these studies suggest that Grit is a reliable predictor of and key ingredient to success. Knowing this peaked researcher's interest surrounding the possible applications of Grit for both students and teachers. Many researchers saw application possibilities that would allow businesses to maximize their investments in employees. Oriol et al. (2017) found that Grit enhances the achievement of goals through perseverance even before extreme external circumstances (Oriol et al., 2017) In 2017, research by Wang et al. explored activity in the brain and its implications for and connections to the concept of Grittiness by demonstrating concrete evidence for Grit through brain activity measurements. The study by Wang et al. (2017) contributed concrete evidence for Grit via brain activity in specific regions. Eskreis-Winkler et al. (2014) further underscored the perception of Grit's ability to significantly affect success with their landmark study. The study specifically showed Grit's ability to predict retention success over and beyond established context-specific predictors of retention success (Eskreis-Winkler et al., 2014). These comparable studies are powerful due to their longitudinal nature.

In 2015, Lucas, Gratch, Cheng, and Marsella isolated Grit to replicable lab conditions and showed that Grit required adverse conditions to demonstrate its full impact. Rasskazova et al.'s (2016) study highlighted a facet of the nascent nature of Grit that may be important to future research. Specifically, paying attention to those who come from

diverse socioeconomic backgrounds was highlighted as an area that begged future focus from teams of researchers working with studies surrounding trait Grit.

Brooks and Seipel (2018) investigated the impact of certain demographic variables on Grit and showed that employment status and Grit are related. This study by Brooks and Seipel exposed relationships that were not consistent with existing research. Existing research showed Grit to be a key factor in predicting success levels. The study by Brooks and Seipel began to cast shadows on that perception of Grit's effectiveness.

Milman et al. (2015) showed that nontraditional students, such as those with diverse backgrounds or those who have been out of school for several years, have unique needs based on their distinctive demographic characteristics. Milman et al.'s (2015) study highlights the ever present differences found among different sociodemographic levels and suggests that future research should focus on discovering the differences in a domain specific manner and implementing strategies to help close the gap between individuals from different socioeconomic levels.

With those elements of Grit being initially established and the challenge to explore further recommended, researchers next focused on the academic applications of Grit. Now armed with the hopeful perceptions that Grit could be increased and that it did affect success levels, researchers held high hopes that Grit would be a key element to increases in student academic success and have important professional development applications for the education field.

Duckworth et al. noted in 2009 that Grit was related to teacher effectiveness. A study that was discussed within the work of Duckworth et al. (2009) by Furrer and Skinner (2003); and another by Guay, Marsh, Senecal, and Dowson (2008); and finally one by

Martin and Dowson (2009); have documented the advantageous role of sense of related-

ness in the educational context as relatedness was associated with academic achievement,

motivation, and engagement. Datu provided further evidence in 2017 regarding the sali-

ent role of social and contextual factors (Datu, 2017). While looking closer at student re-

lated educational applications of Grit; a study by Cosgrove et al. (2018) found that age,

number of advanced classes, Grit, and total number of absences were all correlated with

academic performance. Students who had higher Grit and lower total absences performed

better.

Oriol et al. (2017) set out to discover if there was a strong relationship between

self-control and Grit. This team of researchers also wanted to know if both Grit and Self-

control would be predictors of self-efficacy and school satisfaction in students from both

the primary and the secondary educational stages. Oriol et al. (2017) found that Grit and

self-control have strong associations with self-efficacy. School satisfaction was related

for students at the secondary stage (Oriol et al., 2017).

Around the year 2017, with a few study results of similar nature falling even ear-

lier, researchers began to explore Grit in a domain specific manner. Ion et al. (2017)

completed a study that began to poke holes in the perception of Grit as a miracle solution

to the pressing problems faced by those across application settings. One domain specific

study by Lee and Sohn (2017) showed that deliberate practice fully mediated the relation-

ship between Grit and academic grades and supported Grit as an alterable force that mo-

tivates deliberate practice and results in increased scores. Lee's study confirmed that de-

liberate practice has a meaningful effect on academic achievement (Lee, 2017). Present

day effective practice in elementary classrooms commonly incorporates findings of this

and other similar studies in their approach to teaching reading to students using repetitive

deliberate practice and addressing emotional intelligence skills for all students.

At this point in an exploration of the body of literature surrounding Grit one might

perceive as researchers did initially that Grit was a solution to the myriad of concerns fac-

ing today's educational systems. However, as teams of researchers continued to look

closer the relatively minor associations that Grit had with academic success when com-

pared to other similar traits became more apparent. Ivcevic and Brackett (2014) sought to

discern if the perceived correlations between target predictors including conscientious-

ness, Grit and emotional regulation ability and school outcomes were valid. Ivcevic and

Brackett's 2014 study did not find correlations between Grit and increased school suc-

cess. Similar to the findings of Ivcevic et al. (2014). Baxelais et al. found in 2016 that

Grit was not related to predicting student academic achievement. (Ivcevic & Brackett,

2014). A domain specific study by Palisoc et al. (2017) demonstrated that Grit-S scores

correlated with the pursuit and successful attainment of postgraduate training, but not

with academic success. (Palisoc et al., 2017) Gheith and Aljaberi found in 2017 that an

interactive training program did impact the development of a set of non-cognitive skills.

The 2017 study was consistent with a the work of Bazelaia et al. (2016) that found a

weak correlation between GPA and all six non-cognitive skills.

In addition to discovering less profound implications for Grit as it relates to suc-

cess, researchers also began discovering possible non-preferable outcomes related to high

levels of grittiness in individuals. A study by Akos and Kretchmar (2017) looked at

measures used to make decisions about which applicants to admit using non-cognitive

predictors of college success and found that increasing Grittiness is a trade off between

breadth and depth (Akos & Kretchmar, 2017). Researchers had lost their high hopes for

Grit and were even beginning to discover a darker side that held not only some possibility

for good but also possibility for harm. Lucas et al. (2015) showed that both individuals

with higher levels of Grit and those who demonstrate less Grittiness engage equally when

succeeding but Grittier individuals persist more when failing (Lucas et al., 2015). A 2015

study by Anestis and Selby found that higher levels of Grit and perseverance predicted

more frequent suicide attempts with clear lethal intent even when accounting for critical

covariates.

Even in the light of disturbing discoveries, it is clear that Grit holds a place at the

table as one of the factors to consider when undertaking the overwhelming responsibility

of educating the world's future populations. The darker side of Grit may even be useful in

better understanding and developing strategies to help those individuals considering sui-

cide. Grit's role in the expanse of educational methods was best shown thru the work of

Hattie et al. (2015) who developed a visual representation that shows that Grit is likely to

have a positive impact on student achievement but was not shown to have the potential to

considerably accelerate student achievement. Other factors within the categories of strat-

egies emphasizing student meta-cognitive and self-regulated learning and student self-

efficacy were shown to be markedly more effective.

Limitations of the Research

The original search parameters used to address the specific research question were

limited by not further exploring many studies that have taken place around the world, by

not including some of the original research published by key researcher(s) Angela Duck-

worth and her team(s) and by not looking further into related areas such as psychology and socioeconomic status. The studies used in this review were limited to those looking at Grit in either western societies or broadly applicable collectivist cultures. The search was also limited by looking mainly for studies that were looking at Grit relative to factors of the educational field such as academic success, enrollment and admittance, and emotional awareness strategies and skills.

In addition, the pool of available research limited the answer to the research question mainly due to the lack of longitudinal studies that still need to be undertaken. A low quantity of longitudinal studies surrounding Grit and the quality of some of the studies hinder what we can gather from the research. Current researchers repeatedly plead for additional longitudinal studies to be completed regarding this topic. Grit is also shadowed by the lack of domain specific studies. Current research seems to be amassing an astounding number of studies that are domain specific almost as a rule. Although current research surrounding Grit seems to be looking to add to the pool of domain specific studies; it may be less limiting to pursue different directions.

Implications for Future Research

Research surrounding Grit would be wise to continue exploring Grit's connections to darker outcomes. In this way, many lives could potentially be saved. The study that showed the correlation unlocked a known but previously unproven concept. Namely, that escape theories surrounding suicidal behavior are largely wrong. If researchers were to continue to explore these areas uncovered by the study of Grit it may be key to the future of phycology and how we address the needs of those considering suicide. In addition,

if researchers would continue to study Grit as it relates to emotional regulation of students it may have further applications for the educational field. The body of literature surrounding Grit showed that Grit was a trait that could be taught or increased in individuals; especially in the same manner that other non-cognitive traits were supported. (Duckworth and Gross, 2014) The research also found that Grit is a productive personality trait that could be enhanced in students via appropriate interventions as has been done with gratitude (Tough 2013; Seligman et al. 2005, 2009) Raphiphattana et al. (2018) demonstrated that Grit can be increased thru dispositional mindfulness interventions which are already being used to increase other non-cognitive traits within the school settings. Future research should focus on the findings of Vainio and Daukantaite in 2016 that show that Grittiness in goal pursuits was found to require both a sense that the world is coherent and an authentic connection with the self in order for it to fully benefit well-being. Future researchers would also be wise to follow up on a study by Barton and Miller (2015) noted that personal spirituality may be foundational to positive psychology traits in the majority of people.

Implications for Professional Application

Grit may not have held the originally perceived power to affect success for students academically. However, it may be that researchers were simply asking the wrong questions surrounding Grit. If Grit were studied with more of a focus on its ability to help students regulate their emotions it may hold further applications for educators. Today's schools are filled with myriad problems surrounding behavior, emotional regulation, and the growing psychological needs of both students and their families. These needs sur-

rounding the emotional well-being of students, teachers, and their families affect every-thing including academic success. Exploring the non-cognitive nature of Grit further while following and building upon the findings of researchers such as Vainio & Daukan-taite (2016) and Barton and Miller (2015) would allow the body of literature surrounding Grit to further serve the educational system and to still hold the same level of nascent promise for affecting the future of education. Grit may not increase success for students in the manner originally intended; however, it still holds promise to increase success that is measured in more lasting ways than this temporal world strives to attain. Rather than being tied to dollar signs as many business minded investors had hoped; Grit may be beneficial in more subtle ways that ultimately affect levels of success indirectly. Like-wise, educators could benefit from Grit's exploration and applications and in turn could offer more to the students of today and far into the future generations. Studies surround-ing Grit may also be beneficial if studied further in a domain specific manner with a fo-cus on the needs of those coming from different socioeconomic and demographic back-grounds. Studies by Rasskazova, Ivanova, and Sheldon (2016) outlined the importance of paying attention to those who have different backgrounds while other studies reminded us that we need to look further into Grit in a domain specific way.

Conclusion

Grit is correlated with increased success as well as many factors that in and of themselves aligned with increased success. Interventions, especially those that are do-main specific and deliberately and carefully designed are proving to be an effective way to increase grit and by proxy increase success. Interventions success has been at times found to be short lived and similar to the effects from interventions aimed at better

known non-cognitive factors. Increasing grit in individuals has a dark side in that unde-sirable behaviors may also be increased. Grit without the foundation of a personal spiritu-ality is non-existent. Removing the foundation of personal spirituality from our culture and ultimately our world undermines the structural integrity of so many things with Grit and other positive psychology traits being among them. These key elements outlined for further future study by researchers such as Vainio & Daukantaite (2016), Barton and Mil-ler (2015), and Raphiphattana et al. (2018) have been shown to be consistently advanta-geous to building, sustaining, and furthering our success as individuals and societies as a whole. In conclusion, grit is able to contribute a piece to a better educational system and a better world but hinges, in an extremely nascent manner, on the opportunity referenced within the book of Proverbs and held out to all creation; namely, the opportunity heard from wisdom as she calls out in the street and lifts her voice in the public square:

> How long, O simple ones, will you love simplicity? How long will scoffers delight in their scorn and fools hate knowledge? Repent at my re buke! Then I will pour out my thoughts to you, I will make known to you my teachings. Come and listen to my counsel. I'll share my heart with you and make you wise. But since you refuse to listen when I call and no one pays attention when I stretch out my hand. You ignored my advice and re jected the correction I offered. So I will laugh when you are in trouble! I will mock you when disaster overtakes you. When calamity overtakes you like a storm, when disaster sweeps over you like a whirlwind, when dis tress and trouble overwhelm you. When they cry for help, I will not an swer. Though they anxiously search for me, they will not find me. For

they   hated knowledge and chose not to fear the LORD. They rejected my ad

vice and paid no attention when I corrected them. Therefore, they must eat

the bitter fruit of living their own way, choking on their own schemes. For

the waywardness of the simple will kill them and the complacency of fools

will destroy them. But all who listen to me will live in peace, untroubled

by fear of harm. (Proverbs 1:20-33, New King James Version)

According to the Bible we have before us opportunity to turn and to seek after a

solid foundation of truth, righteousness, justice which is in turn the foundational essence

of Grit. As discussed in this paper, Grit is a useful tool for building improved future edu-

cational systems of all kinds but its profitability is nascent to the degree that we also

choose the foundational pieces that allow it to flourish and offer its protection throughout

our lives. Like other nascent things only time will tell the level of their success or lack

thereof. As educators, we would do well to remember that anything we can offer students

will crumble without a solid foundation underscoring its strength and vitality.

Supporting students in their development of personal spirituality is foundational

and supports all other traits and strategies contributing to the independence we help them

build as they grow and learn. Final words from the Holy Bible ring true to this day:

My son, if you accept my words and store up my commands within you,

turning your ear to wisdom and applying your heart to understanding—

indeed, if you call out for insight and cry aloud for understanding, and if

you look for it as for silver and search for it as for hidden treasure, then

you will understand the fear of the Lord and find the knowledge of God.

For the Lord gives wisdom; from his mouth come knowledge and unders

tanding. He holds success in store for the upright, he is a shield to those whose walk is blameless, for he guards the course of the just and protects the way of his faithful ones. Then you will understand what is right and just and fair—every good path. (Proverbs 2:1-9, New International Version) Who is the man who fears the LORD? He will instruct him in the way he should choose. His soul will dwell in prosperity and his descendants will inherit the land. (Psalm 25:12-13, English Standard Version)

Wisdom admonishes us in foundational ways known to every creature under heaven that Grit is a part of building success in that it builds resiliency and studies surrounding building resiliency in students are the new form that the nascent nature of Grit has taken on in recent days. These studies are presented in the form of trainings, books, and inspirational speakers who remind us that resiliency is inherently tied to the 'science' of hope. The same admonitions reach us in the very core of our beings when we hear and heed the words of the ancient foundational scriptures that say: And now these three remain; faith, hope, and love. (1 Corinthians 13: 13, New International Version) Without them, Grit , resiliency, or anything else that supports increased and prolonged successes in life is meaningless. Like so many other things in the universe we currently call home; the nascent nature of Grit has indeed shown itself to be a circular path leading straight back to the heart and home of all creation-God's living and Holy Word.

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