

GROWING GRIT TO PRODUCE DOCTORAL PERSISTENCE:
A GROUNDED THEORY STUDY

by

Melanie Denise Moran Hudson

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

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ABSTRACT

The purpose of this systematic grounded theory study was to generate a model explaining how grit and a growth mindset develop and influence doctoral persistence in doctoral completers.

The theories guiding this study were Tinto's (1975) student integration theory of college persistence, Duckworth's (2016) theory of grit, and Dweck's (2016) theory of mindset.

Interview and reflective journaling data, as well as scores on the Short Grit Scale (Duckworth, 2016) and the Dweck Mindset Instrument (Dweck, 2016), from 12 doctoral completers were analyzed using systematic coding consistent with a grounded theory research design. The central research question of the study was, "How do grit and a growth mindset develop and influence doctoral persistence?" The central theme of *Personal and Social Responsibility* (PSR) carries theoretical, empirical, and practical implications for doctoral, or any other leaders who wish to develop grit in others, as well as individuals seeking to develop the trait within themselves. The findings also produced sub-themes of *expectations*, *engagement*, *service*, and *personal loss* in the life experiences of the doctoral completers. Sub-themes of religious *faith* and *passion* for their field were also discovered as significant factors in the participants' grit development, and the personal characteristics of *flexibility* and *shame resilience* (Brown, 2006) were revealed.

Findings also confirmed prior persistence literature citing the imminent value of *personal* and *academic relationships* (Tinto, 1993). The conceptualization of the Grit Growth Model was grounded in the identified themes. Since doctoral attrition has historically plagued institutions of higher learning, with conflicting explanations reported in the literature, program leaders will benefit by understanding these factors associated with persistence which can be addressed through direct intervention.

Keywords: grit, growth mindset, doctoral persistence, higher education, grounded theory

Dedication

This dissertation is dedicated to the love of my life, my husband Tommy. He was the one who made me keep working when I didn't feel like it. He was the one who supported my late nights of school assignments when I was on a roll. He pilfered in the kitchen and ate yet another sandwich when I was being diligent. He discussed, dialogued, and deliberated through every topic right along with me during coffee time or any time. He proudly told everyone about me and my work. He hovered over my lockbox of data. He bought me the "Hot Mess" candle to light my walks of shame when I blundered. He gave me Brené Brown. He bought me gift baskets. He walked the line. He covered for my absence. He bolstered, encouraged, cheered, panicked, prayed, fasted, talked the talk, and walked the walk. Together, we not only learned about a growth mindset and grit and persistence, but we also went all in and lived it out. Him more than me. I admire him, cherish him, adore him, and respect him. May we never forget these lessons we learned about stretching the boundaries and diving outside of comfort zones. May we always lean on each other when the path is uncertain. May we always remember the days when we talked endlessly about all the things. I will never forget what he has done. May I be half the blessing to him that he has always been to me.

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Beautiful, dear friends and family members along the way have asked how I am coming along, expressed interest in my work, pushed me to persevere, listened to my spiel, and applauded my progress. My new work team – Ester Warren, Darren Wu, Jenny Wilen, Ashley

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My sweet and spicy family has made this undertaking bearable and worthwhile. I am thankful for my favorite daughter, Josie, who filled in the gaps in order to let me focus or recover or avoid – whatever the current need was. Her quick wit and pushy ways add joy to my days that she doesn't even know, and her deep appreciation for intentional and meaningful *relationships* makes us soulmates. I adore that she tells everyone she meets about my dissertation. I am grateful to my oldest son, Charlie, whose sold-out commitment to his wrestling goals has stood as my living example of *grit* from the beginning. His daring greatly has so inspired me to also put forth continuous effort toward a worthy goal. His care and concern for me whenever I was low have meant so much, and his Christian *faith* and spiritual dedication are a blessing to our whole family. I am thankful for my middle son, Danny, whose perseverance in sports last year, even with less return on his investment than he envisioned, modeled a *growth mindset*, which esteems the process and continued hope for future reward – the “yet”. I admire him for the

consistency and self-determination to show up for his school and sports obligations, and especially for his loyalty to do the same for his people. His patient suffering when I failed to cook or be as present as before was his special sacrifice toward this endeavor. My youngest, Ben, my constant sidekick for college football viewing whenever I need an escape from all *responsibility*, has always been someone I can count on to be up for an adventure, offering genuine openness and companionship through any *engagement* opportunity I toss his way. This is the only way to live in my estimation. I am so grateful for his curiosity, his positive impact on his environment, and the quality time he offers to those he loves.

My parents, Errol and Jean Moran, who unknowingly prepared me to achieve a doctoral degree, have been such a constant source of support in every way – my entire life. By teaching me to have *faith* in God, providing me with a lifestyle of *engagement* through travel in the *service* of the Army, and parenting me with *expectations* in a supportive environment, they unwittingly provided the tools I would later need to obtain this goal. I am forever grateful for the relationship I have with them and inspired by the continual blessing they are to the people they care about. They have been my living example of “doing for others” by their commitment to Christian *service* to a long list of extended family and friends.

My participants. So much love and appreciation do I have for these twelve who shared their life experiences and values with a stranger so generously. I have always enjoyed knowing people’s stories, but this beginner foray into qualitative research has ignited a *passion* in me to explore the art and science of using those stories to paint a bigger picture that deepens our understanding of the commonalities shared by humankind – for a useful and transformative purpose. I am so grateful to them for the fundamental part they played in this research project.

Finally, there were numerous moments of personal challenge during this journey during which I relied on my own *faith* and called on the name of the Lord to supply endurance and ability. When I was weak, He was strong. I experienced the truth of scriptures such as “I can do all things through Christ who strengthens me” (Philippians 4:13, NKJV). Additionally, like many of my participants, our family encountered deep personal *loss* during the writing of this work. My husband’s longtime best friend and my brother in the Lord, Keith Williamson, passed away unexpectedly. This loss caused much heartache, but also inspired determination in all who knew him to finish our own course with fierce determination and the immeasurable love of Christ for the people in our lives as our guide. Keith’s life and passing reminded me that none of us know when we will reach the finish line, but with unwavering *hope* in the possible and a steely resolve to continue moving, we must keep running our race. Keith was a cherished honorary family member who still lives in our hearts and who we look forward to seeing again one day in heaven. “Therefore, since we are surrounded by such a great cloud of witnesses, let us throw off everything that hinders and the sin that so easily entangles. And let us run with perseverance the race marked out for us, fixing our eyes on Jesus, the pioneer and perfecter of faith” (Hebrews 12:1, NIV), so that, like the Apostle Paul, we can also one day say, individually, “I have fought the good fight, I have finished the race, I have kept the faith” (II Timothy 4:7, NIV).

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List of Abbreviations

Distance Education (DE)

Doctoral Community Network (DCN)

Doctoral Support Center (DSC)

Enhancing Diversity in Graduate Education (EDGE)

Grade Point Average (GPA)

Institutional Review Board (IRB)

Intelligence Quotient (IQ)

Limited-Residency Doctoral Program (LRDP)

Qualitative Data Analysis Software (QDAS)

American Association of Colleges and Universities (AAC&U)

Personal and Social Responsibility (PSR)

CHAPTER ONE: INTRODUCTION

Overview

Student persistence has received considerable attention from researchers over many years. Persistence in higher education has historically been attributed to assimilation into the academic and social structures of the institution (Tinto, 1975). However, doctoral students experience unique challenges compared to traditional undergraduate students, including navigating competing roles, as well as isolation and academic fatigue (Hwang et al., 2015; Pifer & Baker, 2016)—with attrition rates ranging from 40% to 70% (Ames, Berman, & Casteel, 2018). Although the initial literature regarding doctoral persistence relied on the more traditional student involvement and integration models of higher education (Astin, 1999; Tinto, 1993), the changing landscape of doctoral education—a steep increase in the number of distance education (DE) programs, as well as students’ time and energy constraints—calls for a closer look at individual student factors over engagement efforts. Over the last 20 years, researchers have scrutinized the complexity of factors that affect doctoral persistence, and many are now beginning to emphasize the essential role of individual characteristics of the student when studying persistence (Golde, 1994; Golde, 1998; Lovitts, 2005; Rigler, Bowlin, Sweat, Watts, & Throne, 2017; Spaulding & Rockinson-Szapkiw, 2012; Terrell, Snyder, & Dringus, 2009).

In recent years, a certain individual characteristic has received attention from researchers as it correlates to persistence (Datu, Yuen, & Chen, 2017; Hochanadel & Finamore, 2015). The trait of grit, established by Angela Duckworth (2016) as “the combination of passion and perseverance” (p. 8) to accomplish long-term goals, has emerged as a key factor in achievement of success across a wide variety of disciplines (Duckworth, Kirby, Tsukayama, Berstein, & Ericsson, 2011; Duckworth, Peterson, Matthews, & Kelly, 2007). Despite the extensive

literature demonstrating a correlation between grit and achievement of long-term goals, very little research has addressed *how* people develop the trait in the first place.

In the psychological arena, students of all ages have historically subscribed to one of two trains of thought: (a) I do (or do not) have what it takes to succeed, or (b) I can do anything I set my mind to (Dweck, 2016). One train reveals a fixed mindset, a self-theory, which reinforces the belief that qualities are static. The other train reflects a growth mindset, which empowers the belief that qualities are malleable (Dweck, 2008). Abundant literature confirms the positive effects of a growth mindset on student success (Dweck, 2016; Haimovitz & Dweck, 2017).

By introducing interventions, which promote a growth mindset, researchers are discovering that students' mindsets can be changed (Rattan, Savani, Chugh, & Dweck, 2015; Yeager et al., 2016). Emerging literature connecting the theories of grit and mindset has presented a convincing case for linking the two together to facilitate achievement of goals (Hochanadel & Finamore, 2015; McClendon, Neugebauer, & King, 2017; Wang et al., 2018; Yeager et al., 2016). If students possess both a growth mindset and a high level of grit, their chances of success are greatly improved (Duckworth et al., 2007; Fitzgerald & Laurian-Fitzgerald, 2016; Hogan, 2013).

Although the literature is rife with studies addressing persistence, meaningful practical solutions to doctoral attrition remain negligible (Brill, Balcanoff, Land, Gogarty, & Turner, 2014; Mendoza, Villarreal, & Gunderson, 2014; Sutton, 2014). If practitioners—armed with knowledge about how grit and a growth mindset develop—could design interventions that cultivate a growth mindset, as well as a higher level of grit in doctoral students, programs may begin to report higher doctoral completion rates. This study aimed to uncover the seeds that

practitioners can sow to foster both grit and growth mindset development, and consequently, doctoral persistence.

This chapter furnishes relevant background information surrounding doctoral persistence, grit, and mindset, as well as a rationale for this study, which explored the development of a growth mindset and grit within the context of doctoral persistence. The situation to self provides insight into the role of the researcher, and the summaries of the problem and purpose of the study offer justification for the research. Additionally, the empirical, theoretical, and practical significance of the study are addressed before the research questions are identified, as well as pertinent definitions. Finally, the stage is set to begin a more in-depth discussion of the applicable theories and past and present literature of interest in Chapter Two.

Background

A deeper examination of the progression of persistence literature pertaining to doctoral students reveals the historically complex set of variables that contribute to their completion of, or departure from, their programs. Most rigorous of all academic pursuits, post-graduate programs place demands on all areas of students' lives, which challenges their capacity to persist wholly and continuously over the course of several years (Rockinson-Szapkiw & Spaulding, 2014). Early departure is costly for both the student and the institution (Lovitts, 2001), and a closer look at certain individual attributes of doctoral students—such as grit and mindset—which may buttress persistence efforts is a worthwhile venture.

Historical

Doctoral attrition was first identified in the literature as a growing problem in the 1990's and early 2000's (Lovitts, 2001; Tinto, 1993). With various fields reporting anywhere from 40% to 70% attrition rates (NSF, 2009), researchers began to wonder why “the most academically

capable, most academically successful, most stringently evaluated, and the most carefully selected students in the entire higher education system—doctoral students—are the least likely to complete their chosen academic goals" (Golde, 2000, p.199).

Throughout the years since Tinto (1993) and Lovitts (2001) first prospected causes for doctoral attrition, many other researchers have explored factors that contribute to persistence (Golde, 1998; Rigler et al., 2017; Terrell et al., 2009). For much of the scholarly discussion, debate has centered on whether the causes of doctoral attrition are more to do with the institution, the individual, or a combination of both (Lovitts, 2001; Pifer & Baker, 2016).

Tinto (1993), well-known for his study of academic persistence in college, noted that doctoral persistence differs from that of the undergraduate, in that it is generally influenced more by the academic components than social structures of the scholastic journey. Although Lovitts (2001) concluded that the institutional academic structures were largely responsible for doctoral attrition, a key component of her conclusion contained a caveat:

With students' entering characteristics and individual differences held constant

[emphasis added], once they have entered graduate school, students' persistence is a function of the social structures and the social and cultural forces operating in the institutional, disciplinary, and inter- and intradepartmental contexts in which they find themselves. (p. 258)

However, entering characteristics and individual differences do not hold constant, and many researchers confirmed the critical role individual characteristics do, in fact, play in doctoral persistence (Golde, 2000; Santicola, 2013; Spaulding & Rockinson-Szapkiw, 2012). Even Lovitts (2005) later acknowledged the essential part that "individual resources" (p. 150), such as thinking styles, intelligence, and personality, play in persistence.

Traditional persistence models (Astin, 1999; Tinto, 1993) emphasized lack of integration into the institutional structures over personal student attributes to explain attrition. However, in this technologically enhanced era, many students already partake of a vast network of community connections through electronic social platforms (Rockinson-Szapkiw, Heuvelman-Hutchinson, & Spaulding, 2014). Additionally, a majority of students at the doctoral level must limit their investment of time and energy into their academic pursuits to the bare minimum due to their commitment to other roles and relationships (Gardner & Gopaul, 2012; Spaulding & Rockinson-Szapkiw, 2012). Therefore, the individual's need to graft into the structures of work and school in order to experience social connection has decreased markedly over the last 25 years (Putnam, 2000). With the rise in number of distance doctoral programs, student engagement strategies have evolved and faltered (Rockinson-Szapkiw, 2011; Sutton, 2014). Therefore, it is incumbent upon leaders in doctoral programs to include strategies that address personal development needs of doctoral students, in addition to engagement efforts in order to advance policies and initiatives that buoy students' individual abilities and personal commitment to persist to completion.

Since individual differences factor into a doctoral student's decision to depart, more research is needed to explore what specific characteristics drive completers to persist (Philpott, 2015). Santicola (2013) discovered that a common theme in doctoral graduates' perceptions of their ability to persist was their own commitment level and self-discipline: "This particular finding of commitment and discipline compels the researcher to conclude that these factors are necessary to prevail over obstacles. . . within doctoral study, in order to be successful and persist to completion" (p. 260).

Knowledge of the extent to which personal characteristics determine doctoral persistence is limited (Rockinson-Szapkiw, Spaulding, & Spaulding, 2016). Additionally, program leaders may share the perspective of Terrell et al., (2009) that “individual resources represent innate student characteristics and cannot be effectively addressed once the student has started the program” (p.113). However, research does support the external development of grit and a growth mindset, and program leaders may want to consider initiatives that cultivate these traits, even after matriculation (Duckworth, 2016; Dweck, 2016). Since recent literature supports the vital role of the characteristics of grit and a growth mindset in student success at the primary, secondary, and post-secondary levels (Datu et al., 2017; Dweck, Walton, Cohen, 2014), this study will explore their impact at the doctoral level.

Social

Doctoral students face a variety of challenges at each phase of the degree. Across disciplines and programs of all types, most advanced degrees consist of a definitive “knowledge consumption” phase followed by a “knowledge creation” phase (Pifer & Baker, 2016, p. 18). Each phase presents its own unique difficulties, and other hardships permeate all stages of the program. However, departing before completion results in detrimental and lasting repercussions.

If I stay. During the *knowledge consumption* stage of doctoral programs, which includes the admissions process through the comprehensive exam, students often experience a “rough transition into the learner role” (Pifer & Baker, 2016, p. 18) as many of them are adding the quest for an advanced degree to other demanding professional and personal roles. In the first year of post-graduate study, many students are still asking themselves if they have what it takes to succeed academically at this level of study, and others are still asking themselves if this is the path they want to continue to follow. Golde (1998) found that many students who depart during

or shortly after the first year had “reached the conclusion that the academic lifestyle, both as a student and as a professional, are predicated on an unbalanced lifestyle that they were not willing to lead” (p. 57). During the initial steps of the process, many students also encounter a lack of *fit* with their chosen program or institution; finding that their expectations are not met, there is a misalignment with the students’ “personality, preferences, values, and lifestyle,” or that “familial and economic fit” are not present (Rockinson-Szapkiw & Spaulding, 2014, p. 2).

In the *knowledge creation* phase of the program, which begins with the dissertation proposal and concludes with the final dissertation defense, many doctoral students struggle to make the leap from “autonomous to self-directed learners” (Rockinson-Szapkiw & Spaulding, 2014, p. 97). Even the brightest course takers hit an academic brick wall when faced with the task of producing a high quality, scholarly independent study. Lovitts (2005) described this critical transition:

Graduate students must make a crucial shift from the familiar realm of course-taker (a consumer of knowledge that is “carefully doled out in the form of courses or modules, course outlines and reading lists, lecture topics and assessment tasks” in tightly bounded and controlled environments (Delamont et al., 2000, p. 1)) to that of independent scholar/researcher (a producer of knowledge that often results from uncertain processes that take place in unstructured contexts). (p. 138)

Many candidates disclose feeling inadequately prepared for the rigors of this level of scholarship, leading to a reported 20% of total attrition at this phase of the program (Lovitts, 2005).

Additionally, at the dissertation phase, many students endure a variety of challenges, including difficulties in the relationship with their faculty supervisor (chair), isolation, waning motivation, burnout, and low self-efficacy (Hwang et al., 2015; Lovitts, 2005; Pifer & Baker,

2016). Students at this phase of the program often feel like they are chasing the proverbial carrot on a stick, working tirelessly with minimal guidance or affirmation, uncertain if, or when, the desired outcome will finally be realized.

Aside from the unique challenges encountered during specific stages, some difficulties infiltrate all levels of doctoral study. Students experience intense and prolonged stress associated with maintaining a healthy work-life balance (Rockinson-Szapkiw & Spaulding, 2014). The perpetual deadlines and sacrifice of other commitments can lead to emotional exhaustion and discouragement (Green & Bowden, 2012; Morrison Straforini, 2015). Students must persevere despite unexpected “intervening life experiences” (Spaulding & Rockinson-Szapkiw, 2012, p. 207), such as marriage, pregnancy, illness, or loss of a loved one. These events can delay, or even completely stall, progress toward completion. The alternative to meeting and beating all of these challenges is early departure, which leaves the carrot unattained, and the departing student frustrated.

Or if I go. Not finishing a doctoral degree can have a lasting negative impact on former students (Gardner, 2009). The students who depart experience financial, emotional, and professional loss (Andrews, 2017; Golde, 2000). Departing doctoral students must overcome feelings of failure and lower self-efficacy (Andrews, 2017). The wasted financial and personal resources weigh heavily on departing students for many years (Lovitts, 2001).

Andrews (2017) described the personal devastation he experienced when he failed his comprehensive doctoral exam and the ensuing years that were characterized by a looming sense of defeat. His story ended happily with renewed effort that resulted in completion, which Lovitts (2001) found to be somewhat common and remarked: “The fact that so many non-completers pursued additional education and that so many ultimately obtained the Ph.D. or another

professional degree is testimony to non-completers' resilience and their powers of perseverance in the face of apparent failure" (p. 251). However, many other non-completers never pick back up the torch (Lovitts, 2001). Departing study leaves students disadvantaged in the labor market and, in many cases, personally demoralized. Whether doctoral students depart as a result of academic failure or voluntarily, the negative consequences of non-completion—professionally and personally—remain evident.

Similarly, the investment, which does not result in completion, negatively affects the institution. Schools devote significant resources to doctoral students by means of support services, staff, and instructor attention (Golde, 2000). The administrative and academic investment lost by attrition hurts the institutions that never reap a return from those students who depart. Since some data suggests that the latter stage of the doctoral degree—the dissertation phase—generates the highest rate of departure, the costs are far greater to doctoral programs than undergraduate programs which lose more students after only a year or less (Golde, 2005; Lovitts, 2001). Additionally, governing bodies are pressuring institutions to submit to higher levels of accountability, using completion rates as an indicator of success (Gasson, 2015). Since research exploring reasons for attrition has produced wide-ranging results, institutions could be penalized for attrition unfairly, as well as face accrediting challenges as a result of uncertainty regarding effective practical solutions.

Society, as well, suffers from low doctoral completion rates. Not only is there an economic impact from wasted state and federal resources, but also social costs pertaining to the "loss of productivity of fine minds. . .and the recurring shortage of scientists and professionals" (Golde, 2005, p. 670). Lovitts (2001) sought to discover the causes of attrition, partly because "society needs highly educated people from all disciplines to fill a wide variety of positions both

inside and outside of academe” (p. 4). A less educated populace leaves a gap in society that lowers the knowledge level, talent, and depth of perspective, which are vital to solving societal deficits.

Theoretical

When Angela Duckworth (2016) was growing up, her father repeatedly reminded her that she was “no genius” (p. 277). The message she internalized from this upbringing shaped her early belief that talent matters most, and that her own value, specifically, was lower because of her lack of natural ability. Similarly, when Carol Dweck (2016) attended sixth grade, her teacher ordered the seating of the students by their intelligence quotient (IQ) score, allowing only the brightest to perform important classroom managerial tasks. Since Dweck failed to make the upper echelon, her identity and sense of worth became entangled with the belief that her natural ability was set by a predetermined quantity. Fortunately, however, both of these very accomplished women grew up to discover that the messages they received as children would not dictate their level of success as adults.

Evolution of grit. As an adult, Duckworth (2016) gravitated toward educational pursuits, interested in helping children fulfill their potential. During her time as a middle school teacher, she began to discern something unexpected: “Aptitude did not guarantee achievement” (Duckworth, 2016, p. 17). Some students were naturally smarter, but exerted less effort and earned lackluster grades; while other, less gifted students, earned higher grades due to old-fashioned hard work. Thus began her journey to unearth through empirical study that, in fact, “effort counts twice” (Duckworth, 2016, p. 35) when it comes to success (Figure 1).

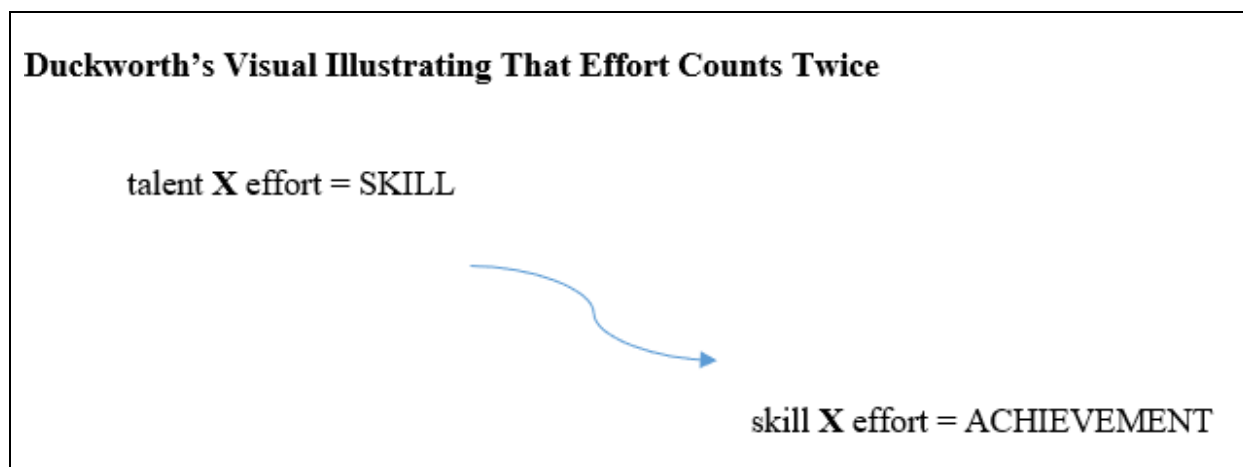


Figure 1. Duckworth maintains that natural talent is only developed into skill with purposeful effort, and only then can additional effort result in true achievement. Adapted from Duckworth, A. (2016). *Grit: The power of passion and perseverance*. Scribner: New York, New York, p. 42. Copyright 2016 by Angela Duckworth. Reprinted with permission (Appendix B).

Once she focused on the invaluable role of effort in achievement, Duckworth (2016) uncovered countless stories of otherwise minimally talented people who obtained excellence through continuous striving. Two common themes in these success stories emerged: (a) Perseverance of effort despite difficulty, and (b) Consistency of interest over a long period of time (Duckworth, 2016). The combination of these two constructs birthed the identification of the personality trait of grit. A person who manifests both qualities tends to accomplish more difficult long-term goals than a person who demonstrates natural ability by other indicators, such as IQ and grade point average (GPA) (Duckworth et al., 2007; Rimfeld, Kovas, Dale, & Plomin, 2016).

The development of an instrument to measure grit (Duckworth et al., 2007) resulted in the production of substantial literature to confirm the power of grit to generate human achievement. The Grit Scale and the Short Grit Scale (Duckworth et al., 2007) have been used to study the trait of grit more closely and in a wide variety of settings, from West Point Military Academy to the National Spelling Bee. Cross (2014) found that grit in doctoral students

correlates with higher GPA. The success stories associated with grit continue to unfold. With this in mind, researchers are now asking, how can grit be cultivated externally using interventions? Duckworth (2016) hypothesized key extrinsic and intrinsic factors which may drive grit-development but admits that scientific exploration of how to grow grit is yet untested.

Evolution of mindset. As an adult, Carol Dweck (2016) also worked with children in learning situations as she pursued research avenues that sought to uncover how students coped with failure. During her observations, Dweck experienced a surprising revelation: Some children she studied reacted in predictable ways when faced with tasks too difficult to master. They demonstrated behaviors associated with defeat, such as hanging their heads, losing heart, and giving up. But other students responded with unexpected enthusiasm. The challenge energized them and prompted behaviors associated with determination, such as leaning in, increasing focus, and doubling their efforts. Thus began her quest to discover “the kind of mindset that could turn a failure into a gift” (Dweck, 2016, p. 4).

Dweck’s (2016) intense research led to a breakthrough in the psychology of success, which is the realization that what people believe about themselves determines their ultimate level of accomplishment. Most people adopt one of two distinct, polarized mindsets. A *fixed mindset*, also called an entity mindset, manifests through people who believe that their own traits (intelligence, character, personality) are prescribed at birth at a certain level, with little hope for change. Alternatively, a *growth mindset*, or incremental mindset, materializes in people who consider their basic qualities as merely a launching point for development (Sevincer, Kluge, & Oettingen, 2014).

Dweck’s subsequent work, as well as the work of many others, delving into the ramifications of the theory of mindset has only strengthened the argument supporting the vital

role of people's implicit self-theory in determining their ability to accomplish goals (Mangels, Butterfield, Lamb, Good, & Dweck, 2006; Wiersema et al., 2015). Andrews (2017) testified about his own transformation from a fixed mindset toward a growth mindset to overcome failing his doctoral comprehensive exam the first time. He now advises "higher education practitioners. . .to encourage perseverance among college students. . .by allowing their students to fail and supporting them as they move toward greater gains in learning from that failure" (Andrews, 2017, p. 19). As the literature continues to grow, so does the immense value of exploring the practical implications in educational settings of not only encouraging a growth mindset in students, but purposefully shifting students' and teachers' mindsets through interventions (Dweck et al., 2014). By intentionally advancing a growth mindset in doctoral programs, practitioners can equip students to persist in the face of challenges and even failure.

Intersection of grit and mindset. Looking over the brief history of the lives of Duckworth and Dweck, as well as the events leading to the genesis of both of their significant theoretical contributions to their fields, a qualitative researcher cannot help but draw parallels. Both researchers faced childhood experiences that molded their own implicit theories, leading them toward a fixed mindset regarding their own capabilities. Both followed an internal desire to use their capabilities to help other students succeed. Both encountered a defining moment in their educational research in which their previous mindset was transformed, as new revelation unfolded before them. Because of this convergence in their personal and professional stories, as well as the similarity in the important implications of their theories for the field of education, it is no surprise that their foundational discoveries began to intersect in the literature.

Although Dweck's (2016) idea about a fixed versus a growth mindset initially focused on intelligence, her work soon expanded to include non-cognitive qualities, such as athletic ability

and business acumen. Her research generated two findings about people with a growth mindset:

- (a) They find success in “doing their best, in learning and improving” (Dweck, 2016, p. 98), and
- (b) They “found setbacks motivating. They’re informative. They’re a wake-up call” (Dweck, 2016, p. 99).

Essentially, Dweck (2016) keyed in on the same phenomenon as Duckworth, which is the vital role of *effort* in development. Although American culture particularly reinforces and rewards *natural* talent with fortune and fame (especially in comparison to other cultures), Dweck (2016) contended that the stories that inspire are the stories of those people with limited talent—handicaps even—who overcome their disadvantages to achieve greatness. Not only do these people motivate others to achieve through hard work, but they also tend to develop character because of their great effort; something that many who achieve success by means of natural ability lack (Dweck, 2016).

If intelligence, athletic ability, and business skills can be honed and elevated through intense effort, then what about personality traits? Dweck (2008), using seminal research, as well as current empirical literature about twins, confirmed the intricate connection between personality and beliefs:

Personality [is traditionally defined] in terms of consistent patterns of experience and action that are evident across multiple situations or life contexts. As such, beliefs, with their power to mold experience and action, are central to this definition of personality. Moreover, showing that belief interventions do, in fact, change such consistent patterns of experience and action will be central to the case that personality can be changed. (p. 391)

Also citing research which examined heritability of personality traits in 2,000 sets of twins, Duckworth (2016) reported that the trait of grit, specifically, was concluded to be on par with

heritability of other personality traits; in essence, “some of the variation in grit in the population can be attributed to genetic factors, and the rest can be attributed to experience” (p. 82).

With the wealth of research demonstrating the power of belief in determining the amount and quality of effort that individuals are willing to put forth in order to achieve (Dweck, 2016), as well as research supporting the eminent value of continuous effort in successful completion of long-term goals (Duckworth, 2016), one can see clear evidence that linking growth mindset and grit theories could logically create a dynamic combination in terms of doctoral, or any other, success.

Situation to Self

Due to the inherent nature of qualitative research, in which the researcher is immersed in the data (closely analyzing that data through the lens of particular worldviews and philosophical assumptions), it is incumbent on the researcher to situate the study in relationship to self (Corbin & Strauss, 2015). Consequently, I will now outline my own motivation for conducting this study, as well as my philosophical, educational, and religious views pertaining to the research as a precursor to a more developed discussion in Chapter Three in the section entitled, “The Role of the Researcher.” Additionally, I communicate my commitment to bracketing out, or suspending, my own understandings (Creswell, 2013).

Motivation

As a doctoral student, I am motivated to discover how doctoral students can best persist all the way to the end of their degree. The economic and personal resources invested in the pursuit of an advanced degree are significant in the life of a student. If my research can contribute to the future success of other doctoral students, then my work has been worthwhile. This personal motivation strengthened the rigor of this study, because it increased my resolve to

objectively find the truth that was drawn directly from the data of doctoral students' experiences and perceptions.

Interpretive Paradigm

From a social constructivist framework, it is my responsibility as a researcher conducting grounded theory to engage in the process fully, described by Corbin and Strauss (2015) as follows: "Concepts and theories are constructed by researchers out of stories that are constructed by research participants who are trying to explain and make sense out of their experiences and lives, both to the researcher and themselves" (p. 26). In this study, I explored the life experiences and beliefs of the participants from their own perspectives that relate to the central phenomenon (doctoral persistence), grit, as well as a growth mindset, and then interpreted those beliefs and experiences collectively. This constructed a model depicting how both a growth mindset and grit develop, which best communicates my own understanding of their perspectives.

Philosophical Assumptions

Certain philosophical assumptions arise in the framing of this study. From an ontological standpoint, my worldview about the nature of humankind's existence credits each individual person's personality and development to a unique partnership between God and the individual. I believe that God creates each person with certain innate talents and gifts, but that each person is also able to further strengthen those basic characteristics through effort. It is this combination of nature and nurture that demonstrates the partnership. In this study, the search for common developers of grit and a growth mindset were examined because of my own preconception that cultivation of these and other characteristics is possible.

In evaluating my epistemological assumptions, I acknowledge that in qualitative research, what the participants *perceive* to be truth *is* truth. I made every effort to rely on the participants'

exact words to draw conclusions, thereby more accurately facilitating the discovery of truth as they understand it, not as I interpret it (Creswell, 2013). Likewise, as a human instrument, I must examine my own axiological assumptions, considering my own values and the role they play in my decisions (Creswell, 2013). In this study, I believe that my desire to treat others how I wish to be treated increased the validity of my work, as the participants' needs were of the highest priority. Additionally, the importance of reporting truthful and meaningful findings, out of consideration of the audience, guided decision-making.

Finally, methodological assumptions affecting this study stem from my belief that new knowledge emerges through careful and inductive examination of the data. Therefore, the use of a qualitative approach and a grounded theory design, in particular, aligns with my preconception that previous theory can be extended through more in-depth inquiry (Creswell, 2013). By interviewing doctoral completers, I believe new knowledge emerged which expands what was already known about individual characteristics that support persistence efforts.

Philosophy of Education

Having taught elementary school in the public school system for four years, algebra in a community college for seven years, as well as my own four children at home for 15 years, I am a firm believer in the value of effort in academic persistence. I have repeatedly witnessed positive results when my students increase their diligence and determination to succeed.

In my own life before doctoral study, I would venture to guess that I exhibited tendencies characteristic of a fixed mindset. I focused on areas of strength and shied away from challenges. Academic success came easily to me with little effort even through graduate school. Following graduate school, I stepped away from all academic pursuits in order to prioritize family endeavors. It was during this time that, for once in my life, I dedicated myself to a formidable

goal requiring great sacrifice to achieve excellence in the domain of parenting and relationships. However, in this arena, no standard of measurement can confirm my success. But the seeds of belief in the value of work and effort to foster desired improvement were planted.

As a doctoral student over the last three and a half years, I have experienced many occasions of a faltering of the will and then a rebound of effort that led to successful outcomes. I now see evidence in my own studies that concerted effort drives achievement. The theories of grit and mindset resonate with me as an educator, and I have a strong desire to see the practical value of cultivating a growth mindset and the trait of grit in students explored fully empirically.

Religious Parallels

My own religious faith runs parallel to the various themes of this study. As a Christian, the preeminent power of belief is central to my faith. Dweck's (2016) theory of mindset holds that an individual's ability to accomplish something lies in his or her *belief* that it is possible to achieve. In Mark 9:23, Jesus tells His followers, "Everything is possible for one who believes" (New International Version). Eternal salvation itself is received simply by the power of belief: "For God so loved the world that he gave his one and only Son, that whoever believes in him shall not perish but have eternal life" (John 3:16).

In addition, the theme of persistence to obtain answers to prayer appears multiple times in scripture: "I tell you, even though he will not get up and give you the bread because of friendship, yet because of your *shameless audacity* [emphasis added] he will surely get up and give you as much as you need" (Luke 11:8). Likewise, Luke 18:1-8 illustrates the persistent widow who gets her answer through continual asking: "And will not God bring about justice for his chosen ones, who cry out to him day and night? Will he keep putting them off?" (verse 7).

Finally, Romans 5:3-5 offers encouragement for believers to persist despite challenges and setbacks:

Not only so, but we also glory in our sufferings, because we know that suffering produces perseverance; perseverance character; and character, hope. And hope does not put us to shame, because God's love has been poured out into our hearts through the Holy Spirit, who has been given to us.

These scriptures reveal a fascinating alignment between the Christian faith and the empirical findings of Dweck (2016) and Duckworth (2016).

Suspending Judgment

My goal is not to insert my own faith in such a way that my results are invalidated in the eyes of those who do not share it, but simply to point out that, in scholarship, the Christian faith does not necessarily diverge from science, nor does science negate Christian principles. Sometimes the two can run entirely parallel as they did in this study. With this in mind, I relied on my educational training and professional experience to carefully document my processes of suspending judgment. I demonstrated discipline in using reflective journaling to instill good faith in readers that my philosophical, educational, and religious preconceptions had minimal effects on my findings, thereby increasing the rigor of my work (Appendix R). As a doctoral student, discovering and reporting truthful findings that help future doctoral students is of utmost consideration. The model produced by this study presents those truthful findings—the stories as told by the participants—adding empirical, theoretical, and practical value to the field. It is my hope that the imminent value of the research, which holds meaningful implications for researchers and practitioners in the quest to nurture student persistence, will preempt any concern regarding researcher bias.

Problem Statement

Doctoral attrition rates across decades and disciplines fall between 40% and 70% (Ames et al., 2018). Researchers are exploring strategies that will guide administrators in higher education in designing support services, resources, curriculum, and practices that will enable their doctoral students to cross the finish line by earning a terminal degree (Burrus et al., 2013). A survey of theory typically associated with attrition and persistence in higher education yields references to Tinto's (1975) theory of social and academic integration, which recognizes the critical need for college students to connect to the social and academic components of an institution in order to persist to completion. Relying on Tinto's (1975) model, many persistence researchers have explored the more complex student and institutional factors which doctoral candidates attributed to their own persistence, such as motivation, intelligence, program type, curriculum, and other personal attributes (Spaulding & Rockinson-Szapkiw, 2012; Wao & Onwuegbuzie, 2011). One personal attribute that has garnered recent attention related to the achievement of long-term goals—grit (Duckworth, 2016)—could provide key insight into doctoral students' capacity to persist. Recent research linking mindset theory and grit theory indicates that grit is not static, but malleable (Dweck, 2008; Fitzgerald & Laurian-Fitzgerald, 2016). The problem is, stakeholders in doctoral programs need to understand *how* the characteristics of grit and growth mindset develop within individuals, ultimately aiding in the achievement of an arduous, long-term goal such as a doctoral degree.

Purpose Statement

The purpose of this systematic grounded theory study was to develop a model depicting the connection between grit and growth mindset, and how these characteristics develop and influence doctoral persistence. Doctoral persistence was operationalized as completion and

conferment of the doctoral degree. One theory guiding this study was the theory of grit (Duckworth, 2016), defined as passion and perseverance to pursue and accomplish the same goal over the course of many years, despite setbacks and minimal positive feedback. Additionally, the theory of mindset (Dweck, 2016) guided the aspect of this study related to the growth of grit. In mindset theory, Dweck (2016) posited “your basic qualities are things you can cultivate through your efforts, your strategies, and help from others” (p. 7). A growth mindset, which interprets challenge and failure as a path to future success, can propel people toward achievement of endless pursuits. If doctoral program leaders can discover the building blocks of grit and a growth mindset, they can design early interventions within and across the various stages of their programs to promote a growth mindset, grit growth, and ultimately persistence.

Significance of the Study

This study extends the theory of grit to include emerging knowledge about how the trait of grit develops, which Duckworth (2016) acknowledged is somewhat limited by lack of previous research, and it contributes to a growing body of research that connects the development of grit with a growth mindset (Dweck, 2008; McClendon et al., 2017; Wang et al., 2018). Empirically, this study fills a gap in the literature concerning what experiences or beliefs lead to the development of grit and the role of grit in the success of doctoral completers. Doctoral program administrators seeking to support persistence need this vital information in order to design practical programming that addresses individual development.

The ultimate value of empirical work and development of theory resides in the practical significance derived from the research: “Knowledge leads to useful action, and action sets problems to be thought about, resolved, and then converted into new knowledge” (Corbin & Strauss, 2015, p. 21). Years after his seminal work in academic persistence in higher education,

Tinto (1998) noted that despite the large body of research on the subject, “the educational experiences of students have remained largely unchanged, their education relatively unaffected by the research on student persistence” (p. 168). Program administrators must explore ways to “more effectively bridge that gap that divides theory, research, and practice” (Tinto, 1998, p. 168) so that students have the best chance to achieve completion.

With this in mind, the results of this study add practical value to the emerging body of research on doctoral persistence. The findings enable doctoral program administrators to better understand the role of grit and growth mindset in doctoral completion and what support structures, as well as design components, would better prepare students to achieve it. In a much broader sense, the results enlighten leaders from all disciplines who wish to train others to increase their ability to effectively accomplish long-term undertakings of all kinds. Finally, individuals who wish to foster the development of a growth mindset and grit within themselves will benefit from the Grit Growth Model produced by this study.

Research Questions

In this grounded theory study, the personality trait of grit, popularized by Duckworth (2016), is recognized as correlating with achievement of long-term goals across academic domains (Credé, Tynan, & Harms, 2017; Rimfeld et al., 2016). Additionally, the possibility of increasing one’s level of grit is acknowledged (Duckworth, 2016). Using Dweck’s (2016) theory of mindset as an underpinning of the study—that is the power of belief in the process of growing or developing any particular trait—the following central question and four sub-questions were proposed:

Central Question 1: How do grit and a growth mindset develop and influence doctoral persistence?

Because of the unique intersection of the theories of grit (Duckworth, 2016) and mindset (Dweck, 2016), and their focus on the value of effort in achievement of educational goals, it is important to understand their role in the doctoral journey. Doctoral study, which results in completion, requires persistence of effort unlike any other academic goal (Lovitts, 2001; Rockinson-Szapkiw & Spaulding, 2014). The role of a growth mindset in doctoral persistence has not been studied, but researchers are decrying its value to policy-makers at all educational levels (Rattan et al., 2015). Only one study, which examined grit as a predictor of doctoral success indicators, can be found (Cross, 2014). Duckworth (2016) and Dweck (2016) both confirm that these individual qualities can be developed. Therefore, doctoral program leaders would benefit from understanding *how* these two individual attributes develop, as well as the part they play in persistence.

Sub-Question 1: What life experiences influence the development of grit in doctoral completers?

Duckworth (2016) proposed several external factors that may develop the trait of grit. Authoritative parenting style was confirmed to correlate with level of grit (Guerrero, Dudovitz, Chung, Dosanjh, & Wong, 2016). Additionally, intentional stretching through involvement in extracurricular activities that require intensive, sustained effort correlates with grit (Duckworth et al., 2011; Miksza & Tan, 2015). Duckworth (2016) also posited that a culture of grit drives people to demonstrate the trait in order to assimilate into the group culture. All of these external drivers of grit development are either hypothetical or minimally tested. The nature of grounded theory demands that the data be analyzed without preconceptions of the outcome (Corbin & Strauss, 2015), so previous literature surrounding grit development served merely as a reference, not as a guide, during analysis.

Sub-Question 2: What values and beliefs influence the development of grit in doctoral completers?

Some people naturally seem to possess the trait of grit as a result of internal values (Duckworth, 2016). For example, a sense of purpose or personal calling correlates with grit (Duckworth, 2016). Duckworth (2016) also described internal factors that may explain how grit develops, such as natural passion or interest for a topic. Additionally, there is some thought that increased effort, which results in achievement, then results in increased effort—and so a cycle emerges which increases grit (Duckworth et al., 2011). Again, at the heart of grounded theory design is the necessity of removing preconceived notions of where the data will lead, so as the data was gathered and analyzed, the participants' values and beliefs were evaluated accordingly (Creswell, 2013).

Sub-Question 3: What is the relationship between grit and growth mindset in students who persist to doctoral completion?

What is evident about both grit and a growth mindset is the presence of *hope* that characterizes people who exhibit the attributes—Duckworth (2016) explained:

One kind of hope is the expectation that tomorrow will be better than today. It's the kind of hope that has us yearning for sunnier weather, or a smoother path ahead. It comes without the burden of responsibility. The onus is on the universe to make things better. Grit depends on another kind of hope. It rests on the expectation that our own efforts can improve our future. (p. 169)

Likewise, hope is necessary for one to possess a growth mindset (Duckworth, 2016). If a person has no hope of growing a specific personal characteristic, then no effort will be made to do so. It is this point of connection of hope, as well as others, that this question sought to uncover.

Definitions

A few of the concepts unique to this study are defined as follows:

1. *Entity theory (fixed mindset)*: a self-theory in which one believes that one's basic qualities are designated at birth and will remain static (Dweck, 2016).
2. *Grit*: the combination of passion and perseverance to obtain long-term goals despite challenges (Duckworth, 2016).
3. *Incremental theory (growth mindset)*: a self-theory in which one believes that one's basic qualities are malleable (Dweck, 2016).
4. *Persistence*: in this study, doctoral persistence was operationalized as persisting until completion of the doctoral degree.

Summary

Using the theory of mindset (Dweck, 2016) and recent literature regarding doctoral persistence (Hwang et al., 2015; Spaulding & Rockinson-Szapkiw, 2012) as a foundation, this grounded theory study examined the relationship between a growth mindset, the personality trait of grit (Duckworth, 2016), and doctoral persistence. By scrutinizing the beliefs and experiences of doctoral completers, as well as their level of grit and type of mindset, the Grit Growth Model was generated depicting the process of grit and growth mindset development, and their role in driving doctoral persistence.

CHAPTER TWO: LITERATURE REVIEW

Overview

Doctoral study, like other rigorous endeavors, requires a degree of personal sacrifice and commitment that many students are unable to maintain—leading to surprisingly low completion rates (Ames et al., 2018). Unlike any other academic pursuit, the quest for an advanced degree demands so high a level of persistence—an ability to push past *I don't want to* and *I can't* day after day, year after year—that about half of the students who begin programs of study cannot sustain them (Gardner & Gopaul, 2012). Successful graduate schools present themselves as “highly desirable places to be and maintain this elitism by offering selective admission and membership to ‘the Best.’ The selectivity allows the system. . .to make great demands on students. . .in terms of commitment, loyalty, time, and energy” (Lovitts, 2001, p. 259). Despite comprehensive vetting policies and strict admissions requirements, doctoral attrition rates outpace undergraduate early departure rates (Gardner, 2008; Golde, 2005). As doctoral program leaders seek to prevent early departure, new information, which uncovers specific components of doctoral completers’ formula for successful persistence, would enable administrators to address individual needs or deficits through program design. Before exploring a new model for improving doctoral persistence, however, it is necessary to survey previous research surrounding persistence, as well as situate the current study within a theoretical and conceptual framework.

Many of the current practices, which aim to buoy doctoral persistence, stem from previous research that called for increasing students’ level of academic and social integration into the institution or appealed to institutions to increase efforts toward student support. However, very few practitioners have ventured to directly develop personal characteristics, such as grit and a growth mindset, within their students in order to equip them to persist successfully.

These characteristics have been demonstrated to boost academic performance in students at all other levels of education but have been explored very little at the post-graduate stage.

A systematic review of the literature uncovered recent studies that explored doctoral persistence as well as the role of the individual qualities of grit and mindset in success across many domains. This chapter presents a review of the current and seminal literature related to the topic of study. In the first section, the theories relevant to persistence, the trait of grit, and the theory of mindset are discussed. A conceptual framework is introduced to illustrate the relationship suggested between doctoral persistence, grit, and a growth mindset.

Next, a synthesis of recent literature regarding theoretical and practical aspects of doctoral persistence is outlined, as well as the changing landscape of doctoral study and characteristics of modern-day doctoral students. Subsequently, the role that grit and mindset play in the achievement of long-term goals is described. Finally, literature surrounding the factors that lead to the development of the trait of grit and its intersection with growth mindset is discussed. Through the lenses of these significant theories, a gap in the literature is identified, presenting a viable need for the current study.

Conceptual Framework

As a qualitative work, this research examined individual stories to “discover important patterns and themes” (Patton, 2015, p. 12) that revealed how the participants developed grit and a growth mindset, and how these qualities produced persistence in the completion of their doctoral degrees. In a qualitative work, it is essential to frame inquiry within the greater context of previous theory (Patton, 2015). In this way, the new knowledge gained, about how grit and a growth mindset grow, can be grounded by previous knowledge in the field of education related to persistence (Grant & Osanloo, 2014). The grounded theory design of this study provides a

unique opportunity for the researcher to extend previous theory—to graft new knowledge with prior understanding—to aid practitioners in better serving doctoral students. Given the nature of grounded theory, which aims to generate theory, Corbin and Strauss (2015) recommended the use of a conceptual framework instead of a theoretical framework as a means to “use the previous theory to provide insight, direction, and an initial set of concepts to use as a starting point for developing new concepts and expanding old ones” (pp. 52-53).

Theory of Social/Academic Integration

A survey of theory typically related to the problem of attrition in higher education yields many references to Tinto’s (1975) theory of social and academic integration, which recognized the critical need for college students to connect to the various social and academic components of an institution in order to persist to completion. Tinto’s student integration model (SIM) served as a launching point and seminal theory for research in academic persistence. Tinto (1975) emphasized the value of interactions between individuals and their environment in developing persistence. Because of Tinto’s work, demonstrating the necessity of integration into the academic and social sectors of the institution in order for students to persist, the body of research surrounding persistence has grown in depth and breadth, helping administrators understand how to best design their programs in order to reduce student attrition.

Tinto (1975) described academic integration as a product of the student’s grade performance and intellectual development. These two indicators signify the student’s academic success within the institution and serve to predict meaningful academic integration into that particular institution. Good grades, viewed as an extrinsic reward from the school, which can be utilized as resources to obtain career advancement after college, benefit the student in a tangible

way. On the other hand, intellectual development offers the student intrinsic growth that, while more difficult to measure, offers the student valuable knowledge motivating persistence.

Social integration, defined by Tinto (1975) as multi-dimensional, consists of “degrees of congruency between the individual and his social environment” (p. 107). Peer group relationships, extracurricular activities, and faculty interactions, under the umbrella of social integration, all converge to determine a student’s *fit* socially into the institutional environment (Tinto, 1975; Rendon, 1994). Equally important as academic integration to the student’s ultimate commitment to the institution, positive social integration predicts likelihood of persistence (Stage, 1989).

More recent researchers who specifically examined persistence at the doctoral level have acknowledged the unique nature of doctoral student experiences. Although Astin (1999) confirmed the vital influence of student involvement at the undergraduate level, Pifer and Baker (2016) described the more typical doctoral student challenges: “The task of balancing personal and familial roles and responsibilities during the doctoral journey presents challenges across the stages. . .[as] 43% of students who leave graduate programs do so for personal or family-related reasons” (p. 23). Indeed, doctoral students of the modern era have less time and space in their daily lives to devote to integration or engagement opportunities with the institution than students of the previous century, or even the previous decade (Putnam, 2000).

It is evident that many present-day doctoral students simply do not have the time to dedicate to involvement with the institution beyond the most basic academic requirements due to their other professional and personal commitments (Gardner & Gopaul, 2012; Morrison Straforini, 2015). Because of a variety of additional competing roles in doctoral students’ experiences, reliance on the traditional student persistence models is insufficient. In fact, a

combination of individual, integration, and institutional factors forecasts perseverance in the program (Litalien & Guay, 2015; West et al., 2011). Rockinson-Szapkiw et al. (2016) found that quality of program, financial support, curriculum, and instruction were among the institutional factors which candidates attributed to their own persistence, while integration factors indicated were social, academic, and familial integration.

Additionally, in Spaulding and Rockinson-Szapkiw's (2012) study of factors attributed to doctoral persistence by the students, the researchers relied on Tinto's (1975) model, focusing on the student and institutional factors that play a role in the students' continued efforts. Some student factors attributed to persistence included demographic variables, motivation, and personal attributes—such as intelligence and personality (Spaulding & Rockinson-Szapkiw, 2012). Brill et al. (2014) also explored common individual challenges experienced by post-graduate students, such as “maintaining motivation, self-efficacy beliefs, and time management” (p. 28). Other factors that typically affect doctoral persistence—responsibilities and coping skills—relate to roles outside of *student* that add to the workload and how the student manages these competing demands. Spaulding and Rockinson-Szapkiw (2012) chose a qualitative approach, “given the emphasis on giving a voice to participants by exploring the meaning *they* attribute to their persistence in an educational doctorate” (p. 204). In this way, the researchers connected Tinto's theory with the actual experiences of present-day doctoral students, through the students' eyes.

Although individual factors merit mention intermittently in doctoral persistence literature over the years (Brill et al., 2014; Pearson, Cumming, Evans, Macauley, & Ryland, 2011), less research has addressed specific characteristics. Given the particularly unique nature of post-graduate education, the increasing role of distance or limited residential program formatting

(Sutton, 2014), and heavy constraints on doctoral students' time and ability to integrate with the institution, the need to identify and examine specific individual student characteristics (which affect completion rates and how institutions can proactively develop those traits) is especially apparent.

Theory of Grit

Duckworth's (2016) theory of grit has emerged as a popular and already frequently used foundational theory on which to base a wide range of inquiry. Her theory suggests that inherent talent alone does not predict success, but that effort, passion, and persistence (grit) have a much higher correlation with achievement. The theory, unique in that it encompasses all disciplines, unseated a powerful assumption in American culture that natural-born talent alone represents the *holy grail*—in sports, business, and academia. Her message is so resounding and counter-culture, that she published it in book form, earning a spot on the New York Times bestseller list instantly. Example after example, noted in the publication, illustrate regular people across many domains reaching the highest level of success despite minimal natural talent.

Over diverse contexts, including West Point Military Academy and the National Spelling Bee (Duckworth et al., 2011), Duckworth asserted that the Grit Scale instrument (Duckworth & Quinn, 2009) provides a more accurate forecast for success than other traditionally used predictors. The theory maintains that the personality trait, reflected in attitudes such as *never give up* and *hang in there till the end*, acts as a stronger force in people's lives to empower success than natural-born skill. Grit has been found to answer the questions, "Why do most individuals make use of only a small percentage of their resources, whereas a few exceptional individuals push themselves to their limits? Why do some individuals accomplish more than others of equal intelligence?" (Bashant, 2014, p. 14).

A distinction of grit theory, particularly for the current study, is the implications for the accomplishment of long-term academic goals. Pursuing any type of college degree requires continuous commitment over the course of several years. Recently, grit has been equated with course satisfaction and final grade earned in community college classes (Climer, 2017), while Rogalski (2018) found that grit correlates with persistence evidenced by continuous enrollment in community-college students.

Although doubtful about the validity of the connection between grit and positive college academic outcomes due to conflicting findings in the literature, Hodge, Wright, and Bennett (2018) found a positive correlation between grit, engagement, and academic productivity in 395 university students. Interestingly, this study (Hodge et al., 2018) also concluded that engagement mediated the relationship between grit and productivity, suggesting that Tinto's (1993) student integration theory could be more applicable to students who have this characteristic. However, no research has correlated grit with doctoral persistence. Since doctoral completion can take anywhere from three to over 10 years (NSF, 2009), it uniquely qualifies as a long-term goal worthy of inspection through the lens of grit theory.

As the value of the characteristic of grit in personal achievement has become more evident, the question of how it develops in individuals has also become more prevalent. By identifying "some insight into the antecedents of grit" (Raphiphatthana, Jose, & Salmon, 2018, p. 76), educational leaders at all levels can promote the growth of grit in students through purposeful mechanisms. On the theory side, some components of dispositional mindfulness may act as a precursor to grit growth. Raphiphatthana et al. (2018) found that the construct of acting with awareness may improve consistency of interest, while non-judging may promote perseverance. In practice, Olson (2017) demonstrated that "intentional assignments in a first-

year seminar class can facilitate the development of grit” (p. 99), while Pierrakos (2017) advocated for deliberate training exercises to foster student perseverance.

Additionally, of particular interest to the present research, a growing body of literature convincingly suggests a critical link between a growth mindset and grit (Fitzgerald & Laurian-Fitzgerald, 2016; McClendon et al., 2017; Poeschel & Tucker, 2018). By instituting interventions, which cultivate both a growth mindset and grit, practitioners are finding that students “persist in the face of academic challenges” (Hochanadel & Finamore, 2015, p. 49) more than those who do not receive these interventions.

Theory of Mindset

Dweck's (2016) theory of mindset, in which she demonstrated that intelligence is not fixed, and that people can actually improve their capabilities, promotes the power of belief in one's own possibilities. Through extensive research, Dweck (2016) explored the notion that “your basic qualities are things you can cultivate through your efforts, your strategies, and help from others” (p. 7). A growth mindset, which interprets challenges and failures as paths to future success, can propel people toward achievement of endless pursuits. Educators who wish to develop a growth mindset in their students must facilitate a focus on valuing the process and on embracing challenges—students must be guided to not be defeated in the *now*, but to hope for the *yet*. The guiding principal in using the theory of mindset in education involves teaching students to “react to challenges with excitement, rather than fear” (Davis, 2007, p. 11). Dweck (2016) and colleagues have inspired practitioners at all educational levels to apply the theory not only to students, but also to teachers.

Because Dweck's (2016) research has not been limited to only intelligence, but also applies to any quality or personal characteristic one desires to grow, her theory is important to

the premise of this study, which surmises that growing the trait of grit is possible. Even if a person does not naturally display the passion and perseverance necessary to complete a long-term goal—such as doctoral study—the theory of mindset establishes the precept that a person’s level of grit is not fixed. Grit can be cultivated purposefully. Building on this theory, educators are beginning to take practical steps to intervene in struggling students’ college experiences in order to promote their success through the development of a growth mindset, as well as a higher level of grit (Fitzgerald & Laurian-Fitzgerald, 2016; Yeager et al., 2016). Applying mindset theory to doctoral students as they begin their program could have important theoretical implications to support the power of mindset, as well as meaningful and practical implications for doctoral persistence.

Visual of Conceptual Framework

By conceptualizing the relationship between all the essential constructs of this study with a visual representation, a blueprint of the “floorplan” of my research can be communicated more clearly (Grant & Osanloo, 2014, p. 18). In this way, the alignment of the major elements of the research project is internalized by the audience through visualization (Holliday, 2016).

In Figure 2, Tinto’s (1973) seminal student integration theory links the two components of institutional factors (Ames et al., 2018; Lovitts, 2001) and individual factors (Rockinson-Szapkiw et al., 2014; Santicola, 2013), which have been found to drive doctoral persistence. The two individual factors that correlate to achievement of educational goals (Duckworth, 2016; Dweck, 2016), grit and a growth mindset, are depicted. Not yet established empirically, the experiences or beliefs, which develop these individual characteristics, are represented by question marks. The present study begins the process of resolving some of those question marks.

Finally, on the institutional side of the equation, efforts to support student persistence, such as engaging students more effectively with activities or groups at the institution (Rigg, Day, & Adler, 2013) and providing access to resources (Santicola, 2013), are typically aimed at satisfying Tinto's (1975) traditional model of integration. Additionally, institutions have tried direct support measures, such as mentor programs and close supervision (Gardner 2008).

This study explores the possibility of an atypical approach to increasing student persistence, such as by offering direct student development interventions that grow doctoral students' personal characteristics of grit and a growth mindset (Duckworth, 2016; Dweck, 2008), apart from program initiatives aimed at social and academic integration, or other support mechanisms.

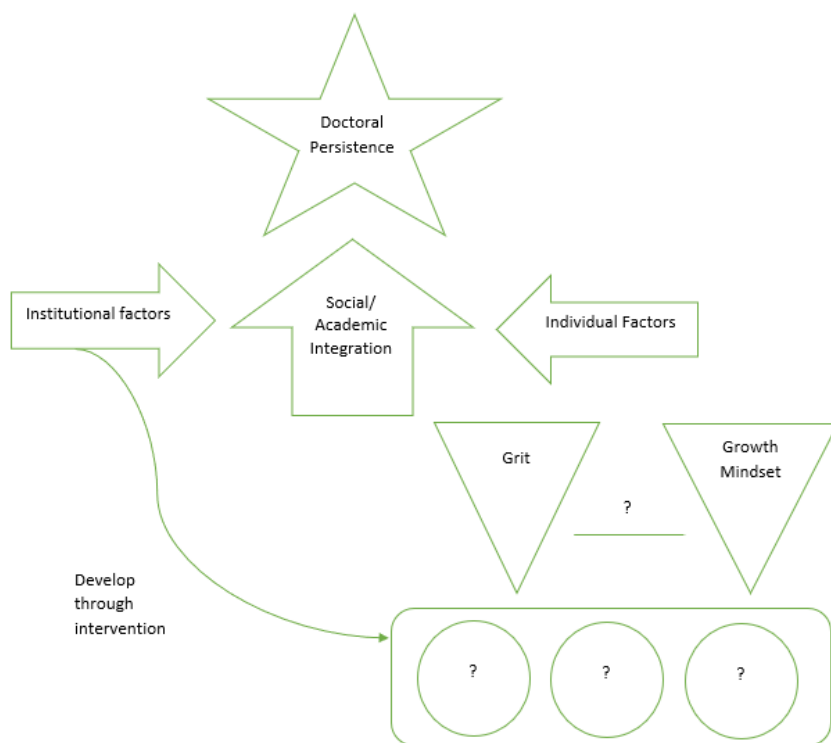


Figure 2. Conceptual framework visual representation.

Related Literature

Empirical research grounded by theory provides new growth in a discipline that connects to a whole body of literature. Once a theory is supported by research, then subsequent researchers have a solid foundation to build upon, producing new knowledge with intricate roots. Just as Tinto (1975) based his own theory of student integration on the prior work of Durkheim (1961), and then a host of other researchers cultivated new areas of enlightenment stemming from Tinto's model of student persistence (Burrus, 2013; Miller & Bell, 2016; Milem & Berger, 1997), humanity is thereby connected through mutual understandings with wide-ranging practical applications. Tinto (1997) admonished:

There is a rich line of inquiry of the linkage between learning and persistence that has yet to be pursued. Here is where we need to invest our time and energies in a fuller exploration of the complex ways in which the experience of the classroom comes to shape both student learning and persistence. (p. 619)

With this in mind, this section further explores the previous literature related to the phenomenon of doctoral persistence, as well as relevant literature surrounding the theories of grit and growth mindset, leading to the most current knowledge in the field.

Doctoral Persistence

Relying on Tinto's (1975) theory, recent researchers have narrowed the scrutiny of college persistence to doctoral persistence. Doctoral students experience particular challenges, which differ from those of undergraduates (Gasson, 2015; Rockinson-Szapkiw, Spaulding, Swezey, & Wicks, 2014). Not only do these students face struggles related to integration and institutional determinants, but they also must navigate difficulties related to their competing roles and a much higher level of academic rigor (Morrison Straforini, 2015; Rigler et al., 2017).

Finally, students must rely on their own set of individual characteristics to accomplish this pinnacle of educational goals. Theorists and practitioners seek to identify and address the unique needs of doctoral students in order to support their successful completion of an advanced degree.

Theory. Tinto's (1975) student integration model has guided much of recent literature addressing doctoral persistence, but Lovitts (2001) differed from Tinto by placing more responsibility for high attrition on the shoulders of institutions' social structure and cultural organization. The most recent research supports a synthesis of the ideas of these two important theorists, citing the vital role of a combination of integration, institutional, and individual factors in supporting doctoral persistence (Rockinson-Szapkiw et al., 2016; Spaulding, & Rockinson-Szapkiw, 2012; Terrell, Snyder, Dringus, & Maddrey, 2012). Indeed, a survey of literature reveals an overarching consensus that "there is no one reason why doctoral students leave" (Gardner, 2009, p. 97). The general recognition in the literature of the complex nature of this phenomenon demands careful consideration by administrators of a variety of paths to support student completion.

Integration model. Although the majority of Tinto's (1973, 1993) work addressed undergraduate persistence, he did propose a theory of doctoral persistence. Tinto (1993) suggested the more pivotal role of the specific department in the socialization processes over institutional, and therefore, the prominence of academic over social integration due to an immersion in one particular local academic unit. Likewise, Lovitts (2001) and Golde (2000) reiterated the impact of department in designing "educational communities that shape the experiences of doctoral students" (Golde, 2005, p. 671). Recently, doctoral programs that emphasize a cohort model (Santicola, 2013), or implement other connectivity initiatives (Terrell

et al., 2012), demonstrate efforts on the part of academic departments to provide integrative supports in hopes of reducing attrition.

Institutional model. Since Lovitts (2001) and Golde (2000) accentuated the responsibility borne by faculty members to address doctoral persistence through programming and institutional structures, many programs have made attempts to identify students' needs and provide additional supports (Brill et al., 2014; Van der Linden et al., 2018). Tinto's (1993) model was also intended to act as a catalyst for institutional change, guiding leaders to ask and answer, "How can the institution be altered to enhance retention on campus?" (p. 113). While some programs offer mentoring services (Brill et al., 2014), others have introduced a doctoral support center (DSC) to assist candidates (West et al., 2011). However, a common theme in the literature reinforces the non-existence of a singular solution: "There is no generalized model to explain doctoral student persistence because of its complexity that is associated with various individual characteristics. . .and institutional culture/support level" (Hwang et al., 2015, pp. 185-186).

Individual model. Although Lovitts (2001) originally put the onus of improving doctoral retention on institutions, many individual traits have been found to contribute to doctoral students' ability to persist. Lovitts (2005) later acknowledged the importance of such individual qualities as thinking styles, intelligence, and personality in supporting doctoral persistence efforts, given the aspect of "creative performance" (p. 150) which the successful completion of the dissertation demands. The sheer length of the process of completing a doctoral program leads to emotional exhaustion for many students, and they must dig deeper than they ever have before in any other context of life. Rigg et al. (2013) found that several factors mediate this emotional exhaustion, such as student engagement and advisor support, but that student self-

efficacy plays a vital role as well. Additionally, Litalien and Guay (2015) emphasized the part played by perceived competence and faculty support. These studies lend credence to the argument that a combination of integration, institutional, and individual factors determines each student's persistence capabilities. While integration and institutional efforts have been found to increase persistence (Rigg et al., 2013; West, Gokalp, Edlyn, Fischer, & Gupton, 2011), program leaders cannot overlook the individual student's characteristics when looking for ways to proactively facilitate degree completion.

Translating Research into Practice. Administrators and faculty members who wish to increase doctoral retention are using the literature to search out meaningful and practical implications for improving student persistence. From streamlining program components (Gasson, 2015) to improving social and faculty connections (Rigler et al., 2017; West et al., 2011), many program leaders are broadening their endeavors to implement policies that support student retention until completion.

However, even Tinto (1998) expressed disappointment in the lack of translation of student persistence research into meaningful change in educational experiences. Although engagement efforts have increased largely on the student affairs side, there have been little to no “comparable changes in the academic side of the house” (Tinto, 1998, p. 168). Likewise, Pifer and Baker (2016) examined 15 years of literature surrounding doctoral education and found that efforts to translate lessons learned from research into meaningful practical applications have been largely ineffective: “Investing in new knowledge about and assessment of doctoral education is only the first step; the return on that investment will come only when the resultant knowledge and better data are fed back into the world of practice” (p. 16). Indeed, few studies suggest practical ways institutions can address individual factors, such as a fixed mindset and a

low level of grit, which may lead to doctoral attrition. Examining the impact of individual characteristics on persistence is critically important since many doctoral completers acknowledge the prominent role that personal determination and perseverance played in their ability to finish (Rockinson-Szapkiw & Spaulding, 2012; Wao & Onwuegbuzie, 2011).

Integration model. Since traditional persistence models relied heavily on the importance of student integration into the structures of the institution, many practical efforts toward reducing doctoral attrition have centered on social and academic engagement strategies, such as building community through cohorts, designing online connection platforms, or establishing a doctoral student support center (Ames et al., 2018; Terrell et al., 2012; West et al., 2011). From Tinto's (1973) model of student integration, program leaders recognize that “involvement matters. The more academically and socially involved individuals are—that is, the more they interact with other students and faculty—the more likely they are to persist” (Tinto, 1998, p. 168).

In order to promote increased connectedness and student satisfaction, Rockinson-Szapkiw (2011) recommended the “adoption of a collaborative workspace” (p. 1166) by means of an online portal for distance doctoral students during the dissertation process. Similarly, one university has initiated a five-year plan to address doctoral attrition, with one strategy taking the form of a web-based virtual community of emerging scholars:

The Doctoral Community Network (DCN) is a student-driven online scholarly community designed to help doctoral students complete their dissertation and program of study and is a forum visible to all doctoral students attending the university...[It] provides comprehensive support services to assist new researchers as they learn to become independent scholars, capable of producing high-quality research. (Ames et al., 2018, p. 81)

However, many students agree, and indeed the higher attrition rate in distance education programs overwhelmingly supports, that no web-based connection strategy can ever supplant face-to-face interactions of residential educational experiences (Hoffman, 2014; Sutton, 2014).

Institutional model. Following the advice of Lovitts (2001) and taking responsibility for the institutional side of the equation, doctoral administrators have also initiated a variety of measures to directly support student completion. Dorn and Papalewis (1997) found that instituting a cohort model together with a peer mentoring program in doctoral programs, attended by working professionals, improved persistence: “The overwhelming positive responses regarding the power of peer mentoring. . . indicate that the doctoral cohort can provide vital support and mentoring to members trying to work full-time, maintain their personal commitments, and earn their doctorates” (p. 5). Other programs have implemented a more supportive writing development program, led by a doctoral support team (Sutton, 2014). These efforts represent a sample of the attempts made by institutions to offer direct interventions toward completion.

Individual model. However, the 21st century doctoral student differs significantly from the doctoral student of as recently as the 1990’s (Nasiri & Mafakheri, 2015). In the 2018 report from the Council of Graduate Schools about trending graduate school enrollment in the U.S., 57.5% of the 1.8 million enrolled last year were full-time students (Council of Graduate Schools, 2018). Since the figures divide full-time from part-time students close to the halfway mark, the current inquiry did not focus on full time status. Instead, this study explored the nature of the doctoral student in the current culture, regardless of their course load, discipline, or type of program. Most of today’s doctoral students are inundated with roles and relationships outside of their student responsibilities, so that the individual’s remaining resources must often be invested

in only the bare essential academic requirements of their programs (Terrell et al., 2012). Since many programs are now distance, or limited-residency (minimal face-to-face requirements), students who work full-time, are married, or have children (as well as any combination of all three), are able to pursue an advanced degree without relocating or sacrificing their other roles (Kennedy, Terrell, & Lohle, 2015). These same students are also overloaded with daily personal communications through electronic social media platforms, e-mails, and extra-curricular activities, which allow them less time to dedicate to engagement with the social structures of their institutions of employment and education (Putnam, 2000).

Because a large percentage of present-day doctoral students are working professionals who attend school part-time, the time-to-degree completion can take up to ten years (Wao & Onwuegbuzie, 2011). The sheer length of time can act as a draining force on students' marriages, relationships, and resources (Morrison Straforini, 2015). Emotional exhaustion, leading to burnout, can set in after prolonged school commitments continue to be stacked on top of the other depleting demands of life (Rigg et al., 2013). Attending part-time can also cause schoolwork to be relegated to minor-priority status, leading to low performance and discouragement (Hwang et al., 2015). Working professionals who attend school part-time may also find the extra demands that distance-education programs place on students—even sincere attempts at student engagement or community-building—burdensome and unhelpful (Gardner & Gopaul, 2012). Although isolation is a common theme in persistence literature (West et al., 2011), program leaders may need to rethink their integration attempts and incorporate more direct support measures that do not add unnecessary obligations to the students.

Since many doctoral students do not have the time and space in their lives to devote to engagement opportunities with their institutions, practitioners must shift their efforts away from

simply attempting to satisfy the integration models of persistence (Astin, 1999; Tinto, 1993) toward a model that emphasizes the importance of student characteristics. The results of this study produced a model, the Grit Growth Model, which highlights two notable individual characteristics known to correlate with academic achievement at all levels (Duckworth, 2016; Dweck, 2016). Leaders of post-graduate programs must recognize the need to support the development of these and other individual characteristics, which will enable students to demonstrate persistence, despite the many challenges of the modern doctoral journey (Rockinson-Szapkiw & Spaulding, 2014).

Role of Grit in Achievement

Since the theory of grit (Duckworth, 2016) emerged in recent years, the literature has grown tremendously with studies confirming both its validity and value. A special type of stamina—comprised of determined persistence and personal motivation—grit has repeatedly predicted academic performance (Lucas, Gratch, Cheng, & Marsella, 2015; Rogalski, 2018). According to Duckworth (2016), grit is composed of two separate constructs: long-term consistency of interest and perseverance.

Differentiated from resilience. Some have confused grit with resilience, but according to Duckworth's definition, resilience can be thought of as synonymous with the perseverance component of grit (Perkins-Gough & Duckworth, 2013). Perseverance is defined in grit theory as continued effort, despite hardship or setbacks (Duckworth, 2016). A deeper look into resilience literature, however, reveals that it is primarily associated with an individual's or group's ability to continue to flourish in life, despite hardship or trauma (Simpson & Jones, 2013; Wermelinger et al., 2018), whereas perseverance more commonly refers to educational pursuits (Stoffel & Cain, 2018). Additionally, resilience is often discussed when referring to

mental health (Larijani & Garmaroudi, 2018), while perseverance is consistently associated with reaching goals (Laborde, Guillen, Watson, & Allen, 2017). In essence, resilience refers to mental wellness and coping ability under adversity, while perseverance is expressed as a *never give up* attitude toward achievement (Duckworth, 2016, p. 7).

Two constructs of grit. The distinguishing component of grit, then, is the long-term interest (passion) aspect. Duckworth (2016) discussed this construct as continued pursuit of the *same* goal over many years, which requires sacrifice of other goals. While Credé et al. (2017) questioned the strength of the long-term interest construct's validity, they did acknowledge that the "primary utility of the grit construct may lie in the perseverance facet" (p. 492). However, Datu et al.'s (2017) review of 22 quantitative studies, which examined the trait of grit as the explanatory variable, confirmed the potency of both constructs (i.e., long-term interest and perseverance) of grit theory.

Across disciplines. Grit has been found to positively correlate with retention across disciplines above other context-specific indicators, such as intelligence, job tenure, Big-Five personality traits, and demographic variables (Eskreis-Winkler, Shulman, & Beal, 2014). Eskreis-Winkler, et al. (2014) found that grit predicted retention in the military, in marriage, in high school, and in sales. Lucas et al. (2015) demonstrated that grittier individuals are more willing to persist despite setbacks, such as monetary loss, as well as incur other costs—such as time and effort.

Doctoral completion. Some researchers have explored the role of grit in certain performance indicators of doctoral study. Cross (2014) found significant relationships between grit and grade point average, grit and number of hours devoted to studies, and grit and age. Pierrakos (2017) experimented with interventions in a doctoral level course that sought to

increase grit and other constructs in order to increase perseverance. In a pre-test/post-test control group design, Pierrakos (2017) introduced more stressful simulation-style learning activities to an engineering course in order to optimize the students' psychological preparedness for the workforce, resulting in significant findings for higher grit on the post-test.

Since many doctoral students are part-time students, Watts (2008) described a “fractured student identity” that occurs when they have to “make the psychological adjustment of constantly switching from one mindset to another” (p. 369) between their various student, professional, and personal roles. Although Watts (2008) dissuaded administrators from characterizing these students as sharing the same personal challenges and needs, Duckworth (2016) offered persuasive arguments that all students, in general, would succeed more surely if they possess a high level of grit:

To be gritty is to keep putting one foot in front of the other. To be gritty is to hold fast to an interesting and purposeful goal. To be gritty is to invest, day after day, week after week, in challenging practice. To be gritty is to fall down seven times, and rise eight. (p. 275)

Although grit has been studied in other educational contexts (Rimfeld et al., 2016; Stoffel & Cain, 2018), research is needed which examines the impact of level of grit on doctoral persistence. This is a very new field of discovery, and any deposit into the bank of literature that increases the knowledge of how to raise a person's level of grit would add practical value from which administrators of doctoral programs could draw.

Development of Grit

As more research is conducted exploring the ramifications of grit theory in a practical sense, more knowledge is needed to identify the common threads that weave grit into a person's

personality. A growing body of research is emerging which connects grit with a growth mindset, confirming the premise that grit is not static and can be developed within students through outside interventions (Fitzgerald & Laurian-Fitzgerald, 2016; Yeager et al., 2016). Of special interest are the intrinsic and extrinsic variables and how these interact to produce grit. In looking at a smaller target population—doctoral completers—this study digs deeper to add to the fledgling body of knowledge of grit development that is associated with the accomplishment of long-term goals.

Intrinsically. Several potential mechanisms support grit growth from an internal standpoint. A person's natural interests and passions usually guide them toward goals that they are willing to work harder and longer toward achieving (Duckworth, 2016). Additionally, consistent, intentional practice toward reaching the goal functions as a catalyst for creating even more drive and motivation to persist, such as in the case of the National Spelling Bee finalists and musicians who exhibited high levels of grit (Duckworth et al., 2011; Miksza & Tan, 2015). Finally, an innate sense of a larger purpose or calling enhances a person's degree of effort significantly toward achieving a long-term goal, especially if the goal benefits others (Hill, Burrow, & Bronk, 2014; Von Culin, Tsukayama, & Duckworth, 2014). Duckworth (2016) explained, "most gritty people see their ultimate aims as deeply connected to the world beyond themselves" (p. 148). Practitioners can help students identify their own natural interests, guide them to formulate a plan to develop goals from those interests, and inspire within students a vision for using the achievement of those goals to serve a higher purpose.

Extrinsically. As practitioners seek pathways to produce a higher level of grit in people using external measures, an inspection of prior theory and organizations, which have tried similar actions, merits consideration. Duckworth (2016) noted that her research uncovered

themes of authoritative parenting (management) style, intentional stretching exercises, and an overall culture of grit, which have all contributed to building the trait from without. As doctoral program leaders better understand these themes, they can use the knowledge to incorporate them into program design, structure, and overall culture.

Authoritative parenting. An authoritative parenting (or management) style refers to authority figures that take on a demanding, yet supportive role (Duckworth, 2016). It stands to reason that if the parenting style that psychologists concur produces children that “fare better than children raised in any other kind of household. . . regardless of gender, ethnicity, social class, or parents’ marital status” (Duckworth, 2016, p. 213) is so successful in families, then the demanding and supportive model should also foster desirable outcomes in the classroom.

Bassett, Snyder, Rogers, and Collins (2013) confirmed that in a classroom setting for undergraduate students, authoritative teaching style predicted “high academic standards, greater student interest, and more favorable student evaluations of instructors” (p. 1). Coates (2017) further demonstrated that grit development is possible in learning environments that set high expectations on performance in a supportive, relationship-building approach. Additionally, an authoritative style of parenting has been correlated with higher levels of grit in Latino adolescents, resulting in less delinquent behavior (Guerrero et al., 2016). By adopting a more authoritative approach to doctoral program interactions, educators and mentors may develop grittier doctoral students.

Intentional stretching. Duckworth (2016) also promoted the value of intentional stretching to develop grit externally. Intentional stretching may include any extracurricular activity that requires continuous effort to improve. In a study in which high school students reported feeling challenged in school and having fun during free time, but only *both* challenged

and having fun when participating in extracurricular sports (Duckworth, 2016), results indicated that passion and perseverance come together *only* during demanding activities that are voluntarily chosen (Miksza & Tan, 2015). By helping doctoral students choose a curriculum path that they feel passionate about, program administrators can set their students up for developing the grit that is necessary to accomplish completion (Duckworth, 2016).

Culture of grit. Finally, people tend to follow the norm of their surrounding culture, as in the case of the Seattle Seahawks, whose coach, Pete Carroll has said, “All we do is help people become great competitors. We teach them how to persevere. We unleash their passion” (Duckworth, 2016, p. 244). The power of conforming to a group’s standards can act as a driving force to grow grit through establishing a culture of passion and perseverance (Duckworth, 2016). Growing grit is not a new or elite concept. It just has not been fully explored empirically.

Mindset

Neuroscientists are demonstrating the important connection between mindset and behavior:

A mindset is an attitude, or a cluster of thoughts with attached information and emotions that generate a particular perception. They shape how you see and interact with the world. They can catapult you forward, allowing you to achieve your dreams, or put you in reverse drive if you are not careful. A mindset is therefore a significant mental resource and source of power. . .[understanding] mindsets helps you see the power of your perceptions. . .revealing your inner strength and resilience. The correct mindsets are integral to succeeding in school, work, and life. (Leaf, 2018, pp. 37-38)

Not only do people’s mindsets influence their behavior, but people also have the power to change their own mindsets. Leaf (2018) has spent 30 years researching and practicing

automatization—the power people have to “harness the brain’s plasticity” using focused effort to change negative thought patterns, and “thus the structure of the brain” (p. 45).

Draganski et al. (2006) demonstrated the plasticity of the human brain through research in which the images of medical students’ brains following periods of intense learning revealed a significant increase in gray matter in the posterior and lateral parietal cortex. Just as Leaf’s (2018) research in psychology demonstrated people’s capability to intentionally change thought patterns, neuroscientists also reinforced that “understanding changes in brain structure as a result of learning and adaptation is pivotal in understanding the characteristic flexibility of our brain to adapt” (Draganski et al., 2006, p. 6317). The work in both of these fields seems to easily support the assumption in this study that people’s mindsets can change.

Pertinent to doctoral study, pioneers in plasticity research advocate that seeking new avenues of study beyond the familiar at any age is critical to neurological health (Merzenich, 2013). When people leave their comfort zones by pursuing new experiences, learning new concepts and skills, and expanding their thinking, their brains’ “machinery is being continuously rewired and functionally revised” (Merzenich, 2013, p. 2), developing their future aptitude to grow in ability and neurological well-being. Increasingly, neuroscientists are demonstrating the power of new mental challenges to kindle capacity for new growth. The implications of plasticity research for doctoral program leaders suggest that efforts toward rewiring students’ brains to adopt a growth mindset are quite possible.

Mindset and persistence. Weiner’s (1979) “theory of motivation based upon attributions of causality for success and failure” (p. 3) explored the factors affecting student persistence, especially students’ quest to comprehend *why* they have succeeded or failed at a certain achievement. Students tend to attribute their personal accomplishments to internal

factors (i.e., ability) or external causes (i.e., effort). According to Weiner’s attribution theory, the “type of attributions a student makes will affect his or her level of motivation, [which] suggests that students who attribute failures to lack of ability and successes to external factors will be less persistent” (Ayres, Cooley, & Dunn, 1990, p. 153). Stemming from Weiner’s work, Diener and Dweck (1978) expanded the theory to include two distinct styles of attribution—“learned-helplessness (attributing failure to external and uncontrollable events) and mastery-oriented (attributing failure to insufficient effort)” (Ayres et al., 1990, p. 154). These two precursors to Dweck’s (2016) fixed and growth mindset theories offer deeper insight into doctoral students’ motivation to persist or depart.

Fixed mindset. In psychology, a fixed, or entity, mindset stems from a self-theory in which people believe that their basic characteristics are static and cannot develop further (Dweck, 1999; 2008). Typically, those who have this mindset struggle to overcome setbacks and defeat, and these people tend to pursue goals that fall within their identified areas of strength (Dweck, 2016). Conversely, they avoid goals that reveal areas of weakness. For these students, fear of failure can be debilitating. Andrews (2017) testified of his own doctoral journey in which failing his comprehensive exams almost discouraged him to the point of quitting. However, help from faculty members sparked a new level of fortitude within him, which empowered him to go back and start from the beginning—relearning the content necessary to pass the exam. Many doctoral students have never struggled academically until they reach this level of scholarship, and those students who have a fixed mindset may have difficulty believing that they can persist successfully once they first encounter academic adversity (Andrews, 2017; Dweck, 2016).

Growth mindset. Alternatively, a growth, or incremental, mindset proceeds from a self-theory in which people believe that their basic characteristics are malleable and can be advanced

through purposeful effort or external means (Dweck, 1999, 2008). Generally, people who hold this mindset embrace challenges and failures as opportunities to grow stronger and better (Dweck, 2016). Students who subscribe to a growth mindset fear failure less, and therefore persist even when setbacks occur. Doctoral students who already endorse a growth mindset stand a higher chance of persisting successfully because they will tend to esteem the *process*, since “the growth mindset allows people to value what they’re doing *regardless of the outcome*” (Dweck, 2016, p. 48). However, the role that a growth mindset plays in doctoral persistence specifically has not been explored.

Since not all students innately subscribe to a growth mindset, attempts have been made to modify students’ mindsets through interventions in order to support academic success (Dweck, 2016). Dweck et al. (2014) reported the repeated successes that mindset interventions (even fairly brief ones) have produced at the primary and secondary level, citing that “these long-term benefits in academic outcomes persist months and even years later. . .because they can trigger enduring changes in the way students perceive their ongoing school experience, which then feed on themselves to produce compounding benefits” (p. 14). In higher education, Broda et al. (2018) and Yeager et al. (2016) successfully experimented with direct interventions that cultivated a growth mindset in undergraduate students to improve academic performance in the face of challenges, while Mullen, Fish, and Hutingner (2010) discussed the value of changing mindsets in doctoral students indirectly, through mentoring.

Overlap Between Grit and Growth Mindset. A case study for grit theory – one of Duckworth’s (2016) co-workers, Scott Kaufman, also wrote a book synthesizing his comprehensive study and resulting reconceptualization of human intelligence (Kaufman, 2013). Traditional measures of human intelligence (IQ tests, as well as other instruments) fail to account

for the powerful force of human potential and possibility. Kaufman's (2013) Theory of Personal Intelligence asserts that intelligence is the "dynamic interplay of engagement and abilities in pursuit of personal goals" (p. 302). This new definition takes all of the components of the human mind into consideration:

It emphasizes the value of the individual's personal journey. [It] extends the time course of intelligence from a two-hour testing session of decontextualized problem solving to a lifetime of deeply meaningful engagement. [It] arms students with the mindsets and strategies they need to realize their personal goals, without limiting or pre-judging their chances of success at any stage in the process. [It] shifts the focus from doing everything right to a lifelong learning process where bumps and detours are par for the course. From a fixed mindset to a growth mindset. From product to process. (Kaufman, 2013, p. 302)

Kaufman's personal story, detailing his path from special education classes as a child to great musical and academic success at Cambridge and Yale, and now as a groundbreaking researcher in the area of human intelligence, demonstrates that intense passion and perseverance to overcome challenges can indeed empower achievement (Kaufman, 2013).

Looking closely at the most basic tenet of mindset theory, it is evident that the defining feature is the role of belief in determining personal action (Dweck, 2016). Examining grit theory reveals the fundamental component of continuous effort (action) in order to attain goals (Duckworth, 2016). If a person has a growth mindset, it is reasonable to conclude that the personal action taken, when challenges arise, would be some form of continued effort. Since mindset represents belief and grit requires action, one could even theorize that a growth mindset may precede or be necessary for the development of grit.

Neuroscientists who study the brain through magnetic resonance imaging may have produced evidence in support of this grit-growth mindset connection. They have examined the neural correlates of grit and a growth mindset, finding that “both traits are related to staving off distractions” (Myers, Cheng, Black, Bugescu, & Fumiko, 2016, p. 1525), and that there is “novel evidence for the neuroanatomical basis of grit and. . .that growth mindset might play an essential role in cultivating a student’s grit level” (Wang et al., 2017, p. 1688). Myers et al. (2016) concluded, “shaping a growth mindset may be an intervention pathway to help an individual develop grit” (p. 1522). The close relationship between grit and a growth mindset seems to be gaining traction in neuroscience, as well as the field of education.

This correlation between grit and a growth mindset has not been widely tested, but at the very least, these two theories intersect harmoniously in the literature based on the significant role of effort that each one reinforces as vital to academic success (Datu et al., 2017; Wiersema et al., 2015). Although Tempelaar, Rienties, Giesbers, and Gijsselaers, (2015) suggested that “intervention programs may profit from shifting some of their focus toward adapting effort beliefs and effort attributions, away from implicit theories” (p. 118), the power of the belief behind the effort should not be overlooked or underemphasized.

Power of belief. In a two-pronged study that was both retrospective of doctoral completers and non-completers’ experiences ($N = 420$), as well as prospective of doctoral students’ drop-out intentions ($N = 1060$), Litalien and Guay (2015) studied persistence through the lens of self-determination theory (Deci & Ryan, 1985) and found that the aspect of *perceived* competence was the “cornerstone of doctoral studies persistence. This determinant was the strongest distinguisher between completers and non-completers” (p. 229). If doctoral students *believed* that they could complete the degree they were much more likely to complete it.

Duckworth (2016) reiterated this message concerning the power of belief in her book, citing tale after tale of personal testimonials of achievement driven by belief. Indeed, the literature supports the declaration by the late, very accomplished Henry Ford who said, “Whether you think you can, or think you can’t—you’re right” (Duckworth, 2016, p. 178).

Power of hope. Another theme common to both the theory of grit and mindset is the necessity of the presence of hope in people who are striving to accomplish educational goals (Duckworth, 2016). Hope is the feeling that something desired may happen. It is a *belief* in something yet to come. In one of Dweck’s (<https://www.youtube.com/watch?v=hiiEeMN7vbQ>) most popular videos, a Ted talk, she speaks about the tyranny of the *now*, as well as the great power of the *yet*. By fixating on present hardships or setbacks as forecasts of failure, students lose hope and falter. Conversely, by focusing on effort, strategy, and process, students of all ages are able to build a bridge to the *yet*.

In a study of high school students, Kern, Waters, Adler, and White (2015) found that accomplishment correlated with hope and a growth mindset, among other factors, while Manwen, Shurong, and Ning (2018) suggested the use of Snyder’s (Snyder et al., 1991) hope therapy for university students. Similar to growth mindset interventions, which reinforce process (Dweck, 2016), hope therapy helped students learn how to “determine important, achievable, and measurable goals, set multiple paths to move toward these goals, identify the motivational resources and interactions of each obstacle to its motivation, review progress towards the goal, and adjust the targets and passages as needed” (Manwen et al., 2018, p. 119). This focus on process, not outcome, seems to be the key to results for educators.

Duckworth (2016) encouraged educators to inspire hope within students through the use of intentional selection of language, as well as actions, which stimulate optimistic expectancy:

“Language is one way to cultivate hope. But modeling a growth mindset—demonstrating by our actions that we truly believe people can learn to learn—may be even more important” (p. 182).

As doctoral program leaders strive to inspire students to hope for the accomplishment of the advanced degree, they can take practical steps to do so by proactively reinforcing effort and process when setbacks occur—with both language and purposeful actions.

One such leader, Dr. Rhonda Hughes, co-founder of the Enhancing Diversity in Graduate Education (EDGE) program, which supports women and minorities who are pursuing doctoral degrees in mathematics, galvanized Duckworth (2016) to change the wording on one of the items on the Grit Scale instrument. Hughes wrote to Duckworth:

I don’t like that item that says, “Setbacks don’t discourage me.” That makes no sense. I mean, who doesn’t get discouraged by setbacks? I certainly do. I think it should say, “Setbacks don’t discourage me *for long. I get back on my feet.*” (p. 194)

Duckworth agreed and changed the wording.

Doctoral educators, as well as educators at all levels, must consider the important connection between a growth mindset and the development of a higher level of grit to reinforce student persistence. Golde (2005) reported that a significant portion of doctoral attrition is “unnecessary and preventable” (p. 696), reminding program leaders that efforts must be increased to address individual student support needs, including the use of means that they have not previously considered. Direct interventions, aimed at personal characteristic development after matriculation, have not been widely tested. Done successfully, more students will reap the benefits of their investment, as will their institutions and society.

Summary

Doctoral attrition has historically plagued institutions of higher education. Because program administrators seek to provide the program design and support mechanisms that students seeking advanced degrees need to succeed, researchers have explored the factors contributing to attrition, as well as persistence. Additionally, researchers have examined the validity and practical applicability of grit theory, which recognizes the vital role of grit above other traits in achievement across disciplines. Defined as passion and perseverance to pursue long-term goals (Duckworth, 2016), grit is necessary for doctoral completers to persist past the various challenges of each stage of the program. However, little is known about the experiences in life and individual beliefs, which develop the trait. A gap exists in the literature pertaining to how to purposefully develop grit, as well as how grit drives doctoral persistence to completion.

Additionally, recent literature supports the vital role of a growth mindset in goal achievement (Dweck, 2016). By examining the level of grit, as well as the role of a growth mindset, in doctoral completers, practitioners can better understand the needs of future students. Using a qualitative lens to examine doctoral completers' stories in their own words, common themes that explain their grit and growth mindset development were identified (Creswell, 2013).

Using grounded theory contributed to the goal of the study of extending grit theory in a practically significant way (Corbin & Strauss, 2015). By revealing the experiences and beliefs in completers' lives that cultivated the grit necessary to finish the program, as well as a growth mindset, this study assists higher education administrators in more fully understanding which students are more likely to complete and what intervention strategies may better prepare them to do so.

CHAPTER THREE: METHODS

Overview

The purpose of this systematic grounded theory study was to develop a model explaining how grit and growth mindset develop and influence doctoral persistence. The value of students' committed efforts and the belief that those efforts can result in doctoral completion are yet undiscovered in their role in affecting persistence. In addition, the external factors that shape grit have not been fully explored empirically, nor the intersection of grit with a growth mindset (Duckworth, 2016). This chapter details the rationale for the research method, design, and approach used to accomplish the goals of the study. The research questions and description of the setting, participants, and procedures are outlined to provide a map for future replication. Next, a description of the researcher's role and methods of data collection and analysis construct the path that led to the development of the Grit Growth Model (Corbin & Strauss, 2015). Finally, questions of trustworthiness are answered before the findings are revealed in Chapter Four.

Design

The goals of this study were achieved through the execution of a qualitative method of research. Because factors attributed to doctoral persistence are “intertwined and involve a complex interplay of institutional and personal factors” (Wao & Onwuegbuzie, 2011, p. 115), a qualitative line of inquiry served as an important instrument to delve into more discerning questions of *how* and *what* (Creswell, 2013). Because qualitative study aligns with a constructivist worldview (Creswell, 2014), which purports that individuals construct subjective meanings from their experiences, this study fit into the qualitative mold, as the experiences of the participants—doctoral completers—were the subjects of the inquiry.

In order to better understand doctoral completers' background beliefs, implicit theories, and personality traits, it was vitally important to uncover a deep level of data from the participants' own point of view (Patton, 2015). Because the methods in this line of inquiry were emerging, as opposed to predetermined, the qualitative approach was best suited to explore the subject under review (Creswell, 2014). Most importantly, the purposes of this study were achieved through the development of open-ended questions and data collection methods surrounding interviews and document inspection. Qualitative research methods are employed when a researcher seeks to understand a phenomenon more deeply, exploring the questions of *how* and *what*, instead of establishing the presence of a basic correlation or relationship between variables (Creswell, 2014). Since this project uncovered the deeper explanation for doctoral completers' success according to their own perceptions, this phenomenon was best suited for qualitative study.

Corbin and Strauss (2015) defined grounded theory as a “qualitative methodology that aims at constructing a theory from data” (p. 15). This design was appropriate to use for the current study since theory grounded in data collected from doctoral completers emerged through “analytic strategies” carried out by the researcher (Corbin & Strauss, 2015, p. 86). Since this study gathered data for the purpose of generating theory about the relationship between grit, a growth mindset, and doctoral persistence—as well as theory regarding what experiences and beliefs in a person's life produce grit—this design was the optimal choice.

Grounded theory originated from a single joint research project in 1965 by two sociologists, Barney Glaser and Anselm Strauss, who developed the methodology and published it in text form as *The Discovery of Grounded Theory* (Corbin & Strauss, 2015). Their common bond was the desire to argue against “armchair theorizing” while emphasizing the need to build

theory from concepts derived, developed, and integrated based on actual data” (Corbin & Strauss, 2015, p. 6). Although Glaser and Strauss parted ways professionally, each one cultivated his own unique style of grounded theory research in the years that followed.

Systematic grounded theory, selected for this study, evolved through the work of Anselm Strauss as an approach to data analysis that emerging researchers can more readily follow (Corbin & Strauss, 2015). Corbin and Strauss’ (2015) *Basics of Qualitative Research*, a self-described effort to “take an extremely complicated process and make it understandable to beginning qualitative researchers” (p. 25), provides a guide to data analysis using the constant comparative method of grounded theory which ultimately generates or extends theory from the data.

Constant comparison “refers to the act of taking one piece of datum and examining it against another piece of datum both within and between documents” (Corbin & Strauss, 2015, p. 93). This type of scrutiny is used throughout the entire analysis process as new interpretations lead to careful comparisons in search of concepts that can be linked together or differentiated. I followed the systematic approach of grounded theory in this study, in order to fulfill the purpose of constructing a model explaining the process of grit and growth mindset development in doctoral students who persist to completion. Since the theories of grit and mindset are already well established, the unique goal of this study was to produce a model which illustrates how these two constructs interact to aid in doctoral persistence. This goal was realized in the Grit Growth Model revealed in Chapter Four.

Research Questions

Central Research Question: How do grit and a growth mindset develop and influence doctoral persistence?

SQ1: What life experiences influence the development of grit in doctoral completers?

SQ2: What values and beliefs influence the development of grit in doctoral completers?

SQ3: What is the relationship between grit and growth mindset in students who persist to doctoral completion?

Setting

This study relied on data gathered primarily through electronic means, such as: web conferencing, written correspondence with participants recruited from internal listservs from my own professional organization, American Education Research Association (AERA), social media advertisement, and snowball sampling. This type of data collection was necessary for researcher convenience, given financial constraints preventing extensive travel.

Participants of this study were chosen with every attempt to achieve maximum variation of demographics and program type. Several disciplines were included in the sample to increase variation, and, in turn, generalizability (Creswell, 2013). Consequently, many of the participants hailed from all parts of the United States and from a wide variety of ethnic, religious, and socioeconomic backgrounds, thereby supporting variation of participants (Creswell, 2013).

Participants

Initially, I utilized purposeful, convenience, and snowball sampling methods to locate participants who fit the selection criteria of the study (Creswell, 2014). Since my purpose was to examine doctoral persistence—operationalized as completion—to identify commonalities or categories, which elucidate the development of grit over the course of their lifetime, I initially recruited doctoral completers (within the last five years) by e-mail from list servs of one of my professional organizations (AERA). Additionally, I recruited survey participants by snowball sampling personal and professional contacts, as well as through social media (Appendix N). In

the initial questionnaire (see Appendix C), I described the complete terms of the study and included a link to my online survey instrument. Potential participants who followed the link to take the survey were first asked to verify that they met the criteria of being age 18 or above and having completed a doctoral degree within the last five years. Next, the survey collected demographic information and answers to the two instruments. Finally, the survey participants were asked if they would be willing to participate further in the interview and reflective journal portion of the study. Willing participants electronically signed their informed consent (Appendix D) and provided contact information. Once I received completed surveys, I evaluated the demographic information in order to make the final selection of interview participants that represented maximum variation (Creswell, 2014).

In this study, I employed theoretical sampling which ensured that as the data was analyzed, I could “construct full and robust categories,” that enabled me to “clarify relationships between categories” (Charmaz, 2006, p. 103). To this end, a broad net was cast in order to recruit a wide variety of demographic qualities within my eventual interview participants. Out of 52 submitted surveys, 51 entries were analyzed, since one of them was contacted to interview (specifically because he was the only one to score as having low grit), and it was discovered that he had not yet completed the degree after all. When selecting interview participants, every effort was made to align the demographics of the interview sample to reflect the same proportions of those demographics in the larger survey sample. Out of 51 submitted surveys, the starting point for desired number of interview participants was 10, but as data was collected, two more interview participants were recruited. Corbin and Strauss (2015) advise adding to the sample as needed to be sure to achieve saturation of categories. In grounded theory, analysis of data produces categories, which drive further data collection. New participants, as well as additional

data collection, strengthened these categories, and sampling continued until theoretical saturation occurred (Corbin & Strauss, 2015). Theoretical saturation is reached when “all major categories are fully developed, show variation, and are integrated” (Corbin & Strauss, 2015, p. 135). The Results section of Chapter Four demonstrates that my final interview sample ($n = 12$) accomplished theoretical saturation. Table One below illustrates the demographic profile of the interview participants.

Table 1*Participant Demographics (N = 12)*

Participant Pseudonym	Age Range	Race	Sex	Marital Status	Religion	Type of Degree	Discipline	Type of Program
Holly G.	30's	AA	F	Mar.	Christian	EdD	Higher Ed.	Res.
Hannah G.	30's	W	F	Mar.	Judaism	PhD	Ed. Psych.	Res.
Helen F.	40's	W	F	Mar.	Christian	EdD	Nursing Ed.	Dis.
Hester G.	50's	AA	F	Mar.	Jehov. Wit.	PhD	Psychology	Dis.
Harrison G.	40's	W	M	Mar.	Christian	EdD	Ed. Leader.	Dis.
Harry	30's	W	M	Mar.	Non-religious	PhD	Clin. Psych.	Res.
Heidi G.	30's	W	F	Mar.	Non-religious	PhD	Literature	Res.
Henry G.	30's	W	M	Mar.	Christian	EdD	Higher Ed.	Dis.
Hayden G.	40's	W	M	Mar.	Christian	EdD	Curr. & Instr.	Dis.
Hazel F.	70+	W	F	Mar.	Christian	EdD	Curr. & Instr.	Dis.
Heather G.	50's	W	F	Mar.	Christian	DNP	Nursing	Dis.
Hezekiah G.	30's	W	M	Mar.	Christian	PhD	Higher Ed.	Dis.

Notes. AA = African-American, W = White, F = Female, M = Male, Mar. = Married, Sing. = Single, Jehov. Wit. = Jehovah's Witness, Res. = Residential, Dis. = Distance

Procedures

Data collected for this study only occurred after receiving permission from the Institutional Review Board (IRB) to conduct the study and approval was documented via e-mail from IRB (Appendix A). Once IRB approval arrived, permission to use Dweck's (1999) Mindset Instrument and The Short Grit Scale (Duckworth & Quinn, 2009) was requested and received from Carol Dweck at Stanford University (Appendix G) and Angela Duckworth at the

University of Pennsylvania (Appendix E). Next, I submitted a request for participants by e-mail through the appropriate gatekeepers of AERA to distribute my recruitment letter to their public listservs (Appendix C). When this sampling method did not produce enough participants, I widened my efforts to include social media (Facebook and LinkedIn), as well as snowballing through both my own student institution and my work institution networks.

The recruitment form described the study and asked potential participants to follow a web-based link to the online survey. Once in the survey, participants completed a demographic questionnaire and completed both Duckworth and Quinn's (2009) Short Grit Scale and Dweck's (1999) Mindset Instrument. Participants were asked to submit their email addresses if they were willing to participate in the interview portion of the study, as well as electronically sign consent (Appendix D). Once enough completed surveys were submitted, I analyzed the demographic information from the completed questionnaires to determine which combination of participants offered maximum variation regarding age, ethnicity, gender, socioeconomic background, degree, and program type (Corbin & Strauss, 2015). The participants selected were contacted via email in order to schedule personal interview appointments, either via web conference or face-to-face, depending on proximity.

Once each interview was conducted, the content of the interview was transcribed verbatim by an online transcription service and then checked for accuracy by me, as well as forwarded to the participants for verification. Each participant was then asked to complete an extension reflective journal assignment to be returned by e-mail to the researcher within 3 days. As the data analysis ensued through researcher memoing and categories began to emerge, I enlisted additional interview participants and/or requested brief follow-up interviews with the original participants. I offered the participants the choice of having a verbal interview or simply

submitting answers in writing to the final follow-up questions. This constant comparison method ensured that saturation of themes was reached (Corbin & Strauss, 2015).

The Researcher's Role

As a human vehicle in this study, I collected and analyzed data from a certain pre-determined worldview, driving findings from my own frame of reference. It was essential that as I began the process of memoing—attaching meaning to data from my own perspective—that I maintained impartiality to the best of my ability (Creswell, 2013). The only connection I had to any of my participants is that some were members of the same professional organization (AERA), and some work at the same institution of my program and job (but none work directly in my department). I upheld disciplined standards of objectivity by genuinely seeking to understand the meanings that the participants intended to convey, as well as journaling any bias that surfaced as I conducted the study.

In a qualitative study, the researcher becomes a “key instrument” in the research (Creswell, 2013, p. 45). As a doctoral student, the topic of doctoral persistence resonates deeply with my current undertaking. In order to properly separate my own experiences and potential biases, which would unduly influence the study, it was important for me to keep a reflective journal (Appendix R) to bracket out my own perspectives which could impact my decisions (Corbin & Strauss, 2015; Creswell, 2013). However, my being a doctoral student does not predicate only negative consequences: “It is [researchers’] knowledge and experience. . .that enables them to dig beneath the surface and respond to data. Though experience can blind researchers’ perception, it can also enable researchers to understand the significance of some things more quickly” (Corbin & Strauss, 2015, p. 78). In this way, my own role as a doctoral student can be considered a benefit to the study, not a liability, in terms of bias.

Additionally, being a doctoral student contributed to my motivation to conduct this research—the findings from this study could facilitate higher rates of advanced degree completion by future students, and I would be grateful to produce work that benefits others explicitly. Duckworth’s (2016) description of a common thread found in those who have grit captures this sentiment: “The long days and evenings of toil, the setbacks and disappointments and struggle, the sacrifice—all this is worth it because, ultimately, their efforts pay dividends to *other people* [emphasis added]” (p. 144). With that thought in mind, the design of grounded theory appeals to my innate hope that my own research will generate new knowledge which translates into meaningful, practical use in the field of higher education in general, as well as future doctoral students specifically (Corbin & Strauss, 2015).

Data Collection

Because “every method has its limitations, and multiple methods are usually needed”, this study will follow standard qualitative research protocol of triangulating methods of data collection (Patton, 2015, p. 316). By using at least three methods of data collection, cross-data validity checks can strengthen the findings (Patton, 2015). This study relied on data collected through two instruments, semi-structured interviews, theoretical memoing, reflective journaling, and a final follow-up questionnaire.

Instruments

Although this study is qualitative, the use of valid and reliable instruments to determine what level of grit and what type of mindset the participants demonstrate was integral to the analysis and findings phase. Patton (2015) explained that sometimes “triangulation within a qualitative inquiry strategy can be attained. . .by combining qualitative and quantitative methods” (p. 317). This does not imply that this study engaged in a formal mixed-methods

approach, but merely that in this particular study, the quantitative data informed the deeper, qualitative analysis. No correlations or empirical causality were drawn from the numerical data.

Short Grit Scale. The Grit-S (see Appendix F), developed by Duckworth and Quinn (2009), has demonstrated “predictive validity, consensual validity, and test-retest stability” (p. 172) as the most economical measure of the trait of grit. By administering this instrument first, I anticipated using this score as a baseline for organizing the participants into sub-groups before analyzing qualitative data. Since the scoring ranges from a possibility of 1 (*not at all gritty*) to a possibility of 5 (*extremely gritty*), I planned to organize my participants into two sub-groups: (a) Participants who scored between 1 and 3 were to be dubbed *lower grit* participants, and (b) participants who scored between 3 and 5 were to be dubbed *higher grit* participants. Since my aim was to explore commonalities and differences between those who exhibit high and low grit, in order to identify factors contributing to grit growth, participants who scored exactly 3 on the Grit-S were not selected for the qualitative phase of data collection.

As a grounded theory study, the research plan evolved once data emerged (Corbin & Strauss, 2015). I recognized before executing the study that no potential participants may surface who obtain a *lower grit* score, and made plans to proceed with a study of only *higher grit* participants if that occurred, without the added component of comparing differences in themes between the two sub-groups. I knew that this was a very real possibility, since doctoral completers could be *riding the wave* of their recent accomplishment, scoring themselves generously on the instrument. This is indeed what happened, so the study moved forward with no sub-groups.

Duckworth and Yeager (2015) acknowledged the limitations of self-reporting instruments in accurately measuring personal qualities, but given that doctoral completers have demonstrated

their own grit with the achievement of such a goal and that “self-report questionnaires are arguably better suited than any other measure for assessing internal” (p. 240) qualities, the instrument was considered valid. Additionally, Duckworth and Yeager (2015) concluded that these instruments are more suited toward practical purposes of improving students’ outcomes:

Scientific inquiry and organizational improvement begin with data collection, but those data must inform action. Too little is known about the question of how to act on data regarding the personal qualities of students. . .If a classroom is low on grit, what should one do? If a student is known to have a fixed mindset, how can one intervene?. . .How can multidimensional data on personal qualities be visualized and fed to decision makers more clearly? (p. 246)

It is these questions in particular that this present study sought to answer, and it is the practical value of the results that was desired.

Dweck’s Mindset Instrument. In addition to administering the Short Grit Scale, data was also collected using a revised form of Dweck’s Mindset Instrument (see Appendix H) (De Castella & Byrne, 2015), which only changed Dweck’s (1999) original instrument by making items reflect a first-person perspective (using *I* statements). Although the mindset instrument typically uses a 6-point Likert scale, there is also some precedent for using a more standard 5-point one as I did (Orvidas, Burnette, & Russell, 2018; Spinath, Spinath, Riemann, & Angleitner, 2003). In personal communication (May 3, 2019), Dweck explained that she normally uses the 6-point scale because it “requires participants to make a decision—a midpoint allows people to not decide which they believe.” However, since my purposes were qualitative and the instrument served as a means to compare growth mindset level with grit level, I chose a 5-point Likert to align with the Short Grit Scale instrument for easier cross comparison of scores.

Participants completed the instrument within the same survey form as the Short Grit Scale. I scored the instrument and used the data during later analysis and discussion. The type of mindset the participants reported through the instrument informed analysis and hypothesis-building when exploring participants' grit scores, as well as the beliefs and experiences which may have contributed to the shaping of their mindset and level of grit. The literature suggests the yet untested premise that a growth mindset may precede the purposeful development of grit by supplying the necessary hope, which accompanies effort, to improve personal qualities (Duckworth, 2016; McClendon et al., 2017). The mindset scores facilitate that discussion.

Semi-structured Interviews

Because the interviews covered the lifespan of the participants, a happy medium between an informal, conversational approach and a standardized approach was the best interview method for this study. Using an interview guide helped “ensure that the same basic lines of inquiry are pursued with each person” and that “the interviewer. . .has carefully decided how best to use the limited time available” (Patton, 2015, p. 439). Each interview was audio recorded using a digital recording device. The audio recording of each interview was transcribed by an online automated transcription service for analysis. I thoroughly reviewed the transcript for accuracy, and each participant was given the opportunity to conduct member checking on the transcript to confirm complete and accurate data (Patton, 2015). The interview guide below (also see Appendix I) served as a means of probing into the background and beliefs of the participants, leaving room for the researcher to deviate from the script as constant comparisons began to produce categories which warranted further examination (Corbin & Strauss, 2015).

Interview guide:

1. Life experiences (childhood):

- a. Please describe your life experiences as a child up to age 18, focusing on the highlights—what was good about your childhood and what was hard?
- b. Please describe the people who were most influential to you growing up.
- c. How would you characterize yourself as a student in K-12?
- d. If you received a low grade on a test or assignment as a child, how did you feel and respond?
- e. How would you describe yourself as a person at age 18?
- f. Please describe any events, circumstances, or other people that you feel molded you significantly during those growing up years.
- g. Tell me about a time in your childhood when you thought you wouldn't make it. How did you?

2. Beliefs (childhood):

- a. What was important in your home as a child?
- b. What character traits were rewarded?
- c. What character traits were discouraged?
- d. What values or beliefs emphasized in your home shaped the person you became?

3. Life experiences (adult):

- a. Please describe your life experiences as an adult, from 18 up until now, focusing on the highlights: what has been good about your life and what has been hard?
- b. Please describe the people who are most important to you now.
- c. How would you characterize yourself as a student in college?

- d. What was your experience like in graduate school?
- e. Identify a specific success that you are proud of, and why.
- f. Please describe a time that you experienced failure and what attributed to it.
- g. How would you describe yourself as a person now?
- h. What have you learned about life that you try to pass on to others?

4. Beliefs (adult):

- a. What is important in your home?
- b. What character traits are rewarded?
- c. What character traits are discouraged?
- d. What values or beliefs are emphasized in your home now?
- e. What are you most proud of?
- f. As an adult, was there a time when you thought you wouldn't make it? How did you?

5. Doctoral persistence:

- a. Describe your doctoral journey, with focus on the qualities within yourself that supported your own persistence until the end.
- b. Describe specific actions or program features from your institution that pushed you through setbacks.
- c. Tell me about a time when you thought you wouldn't make it. How did you?
- d. Why did you want to get a doctoral degree?
- e. In a single word or phrase, what most helped you finish?

The central question of this study was: *How do grit and a growth mindset develop and influence doctoral persistence?* The data gathered from the interview portion of the study was

analyzed for themes and cross-referenced with the quantitative data from the two trait instruments to search for possible answers to the central question. Question sets 1 and 3 correlate to sub-question 1: *What life experiences influence the development of grit?* Question sets 2 and 4 relate to sub-question 2: *What values and beliefs influence the development of grit?* The questions in all four sets were designed to give the participant maximum freedom for an open-ended response, yet within the context of what the researcher sought to know, so that common themes would emerge (Patton, 2015).

Question set 5 connects to sub-question 4 of the study: *What is the process for developing grit and growth mindset in students who persist to doctoral completion?* By exploring the participants' perceptions of factors that influenced their own persistence, the interview format generated data in keeping with qualitative research, which addresses "the meaning [that] individuals or groups ascribe to a social or human problem. . .[which] includes the voices of the participants" (Creswell, 2013, p. 44). This question set helped identify the common program features and personal mechanisms the participants relied on to help them complete their degrees.

Reflective Journal Assignment

The next method of pre-planned data collection occurred after the interviews were completed, initial analysis had transpired, and some categories were formulated from the data (Creswell, 2013). The participants were e-mailed a reflective journal assignment that contained the following questions and were asked to return their responses by e-mail to the researcher within 3 days (see Appendix J) (Corbin & Strauss, 2015).

Reflective Journal Questions:

1. Grit

- a. What do you know about grit? Do you think grit can be developed? If so,

how?

- b. Do you know anyone who you think has a lot of grit? How so?
- c. What percentage would you venture that individual grit plays in finishing a doctoral degree?

2. Mindset

- a. What do you know about a growth mindset?
- b. Do you know anyone who has a growth mindset? How so?
- c. Do you think a growth mindset can be developed? If so, how?

3. Final thoughts

- a. Do you have any further thoughts about the potential relationship between grit, a growth mindset, and doctoral persistence?

Question sets 1 and 2 correlate to sub-question 4 of the study: *What is the process for developing grit and a growth mindset in doctoral students to support persistence?* Question set 3 provided the participants with one last opportunity to add further voice to their thoughts on the topic of the study. By doing so, after categories were identified, I maximized the likelihood that the data told the participants' story according to the rigor of systematic grounded theory methods (Corbin & Strauss, 2015).

Follow-up Questionnaire

Once a central theme emerged, I collected additional data from the participants, allowing them an opportunity to give voice to the theme, as well as the unexpected themes, with their own words (Corbin & Strauss, 2015). I crafted a final questionnaire (Appendix K) and allowed the participants to choose the format of delivery, either a verbal interview or simply written responses. All but two participants opted for written responses.

Follow-up Questions

1. Would you mind taking a few moments to comment on how each of the following dimensions are evident in *your own* personal and/or professional lives? Feel free to describe the evidence of these characteristics generally or to give specific examples that come to mind. Please don't be humble or shy! Remember your identity is shielded by a pseudonym in the study.
 - a. Striving for excellence: developing a strong work ethic and consciously doing one's very best in all aspects of [work/life];
 - b. Cultivating personal and academic integrity: recognizing and acting on a sense of honor, ranging from honesty in relationships to principled engagement with a formal academic honors code;
 - c. Contributing to a larger community: recognizing and acting on one's responsibility to the educational community and the wider society, locally, nationally, and globally;
 - d. Taking seriously the perspectives of others: recognizing and acting on the obligation to inform one's own judgment; engaging diverse and competing perspectives as a resource for learning, citizenship, and work;
 - e. Developing competence in ethical and moral reasoning and action: developing ethical and moral reasoning in ways that incorporate the other four responsibilities; using such reasoning in learning and in life.
2. In your personal life, when you make mistakes that hurt others, what actions do you take?
3. When other people in your personal or professional contexts make mistakes that hurt you, what is your thought process and reaction?

4. In an academic setting during your doctoral or previous experiences, when you have made an error or failed, how did you respond internally and externally?
5. Finally, a resounding message I got from the interviews surrounded the concept of personal responsibility, in the sense that, *Nobody can get this doctoral degree for me but me*. Can you briefly elaborate on this message as it relates to your own experience or mindset?

Question set 1 and question 5 relate directly to the central theme of the findings, detailed later in Chapter 4. These questions enabled me to refine the Grit Growth Theory by checking for gaps and filling in the core category with additional supporting data (Corbin & Strauss, 2015). Secondly, questions 2-4 provided explicit extension to an unexpected theme that had emerged in a more implicit way in the original data collection phases.

Data Analysis

Data analysis procedures followed the guidelines set forth for grounded theory research by Corbin and Strauss (2015). According to their recommendations, I engaged in constant comparisons, alternating between data collection and data analysis, making changes to the interpretations as better understanding was reached: “That is why the method is called grounded theory because the researcher is constantly evaluating interpretations against data” (Corbin & Strauss, 2015, p. 87). Both informal data analysis methods, such as memoing and classifying participants, and formal methods, such as open, axial, and selective coding, were implemented. As a final step, I integrated the findings into a central core category, visualizing the other concepts in relationship to that core category, and formulated a theory about the relationship between grit, a growth mindset, and doctoral persistence. Corbin and Strauss (2015) highlighted the essential role of the researcher in this last, critical step: “Several different theories may be

derived from the same data depending on the perspective of the researcher and where he or she decides to put the emphasis” (p. 298).

Informal Analysis

Once the quantitative instruments were administered, both the completed Short Grit Scales (Duckworth & Quinn, 2009) and Dweck’s (1999) Mindset Instruments were hand-scored using the scoring guides (see Appendix F and H), and the participants were categorized based on the results in order to shape the qualitative discussion. Once the scores were obtained, I assigned pseudonyms to the participants. Since no participants scored between 1 and 3 on the Short Grit Scale, none were assigned a pseudonym beginning with the letter *L* to designate that participant as having demonstrated a low level of grit on the instrument. Therefore, since all 12 interview participants scored between 3 and 5 on the Short Grit Scale, they were all assigned a pseudonym that begins with the letter *H* to serve as a reminder that the participant demonstrated a higher level of grit (Duckworth & Quinn, 2009). Participants who scored exactly 3 on the instrument were not selected for the qualitative phase of data collection, as their scores demonstrated neither a high nor low level of grit.

Next, I designated those participants, who demonstrated having a growth mindset by scoring above 3 on the mindset instrument, as having a last name initial of *G*. Those participants who scored exactly 3 were not assigned a last name initial, to designate that they demonstrated neither a growth nor fixed mindset. Finally, the participants who scored between 1 and 3 on the mindset instrument were assigned a last name initial of *F*, as a reminder that they scored as having a more fixed mindset (Dweck, 1999). This method of data analysis provided a means to conduct richer analysis with the qualitative data, while also remembering the quantitative data without having to look back at the scores repeatedly.

One of the most distinctive analysis methods of qualitative research, memoing, allows the researcher to conduct analysis during or directly after data collection while perspective is fresh in the researcher's mind, as well as during formal analysis while coding (Corbin & Strauss, 2015). During the memoing process, ideas begin to formulate about relationships between concepts and, over time, further clarity is established through in-depth exploration of the data, testing and refining of propositions, and ultimately, identification and saturation of themes. The use of memo writing is an essential tool of analysis: "Without memos, researchers would have difficulty remembering all the details of their analysis. Rereading and sorting through memos and diagrams is like going back through the family collection of heirlooms" (Corbin & Strauss, 2015, p. 296).

In this study, I dedicated significant personal time and effort to writing memos, which reflect and describe concept development, during data collection and analysis (see Appendix O). During and immediately after the personal interviews, and upon receiving the reflective journal assignments, I made these notes carefully, and used an organized filing system to keep the memos for future analysis. Likewise, during formal coding analysis, memo writing documented my thought processes of assigning meaning to data, which lead to the development of concepts and categories, relationships between concepts, and themes (Corbin & Strauss, 2015). These were carefully catalogued in a systematic fashion. In this way, "the treasures of analysis. ...[were] carefully stored and. . .the products of analysis available for the final analytic leap to integration" (Corbin & Strauss, 2015, p. 296).

Formal Analysis

Upon receipt of interview data and reflective journal data, it was important to begin formal analysis as soon as possible, while I could still remember details of the experience and to

preclude being inundated with an overwhelming task of analysis (Corbin & Strauss, 2015).

Additionally, the grounded theory design calls for the use of analysis results to guide future data collection. Throughout this dynamic process, the researcher can continue to go back and collect more data and even more participants (theoretical sampling) in order to reach saturation of themes, generating a fully developed model (Creswell, 2013).

With the assistance of a Qualitative Data Analysis Software (QDAS) called *NVivo*, which Corbin and Strauss (2015) recommend to accomplish the tedious analysis tasks of “recording, sifting, and sorting through data” (p. 203), I engaged in the complex process of grounded theory analysis described by Corbin and Strauss (2015). Although some researchers prefer to avoid the use of computer assistance for qualitative analysis due to concerns about stifling creativity and dependence on the *mind* of the computer, a vast number of inquirers are harnessing the benefits of technology to “enhance their own capabilities to be creative and make discoveries” (Corbin & Strauss, 2015, p. 204). For this study, the software aid was only used as an organizational tool to maximize data management and classification effectiveness.

Open coding. Throughout grounded theory study analysis, the two foundational strategies are asking questions and making comparisons (Corbin & Strauss, 2015). In this initial phase of coding, I began to assign meaning to the data, looking for significance and relationships. Through the use of memo writing, I identified conceptual labels drawn from the raw data. The use of the participants’ exact words through in vivo coding ensured that the meaning intended by them was emphasized and that their voices were explicitly articulated throughout data analysis (Corbin & Strauss, 2015). In this phase, I inserted all qualitative data into the software program and organized it according to sub-questions of the central research question. I also separated all data pertaining to personal and academic relationships into separate

categories, as these categories are well established in the literature, and I wanted to examine the more unknown factors of student persistence apart from relationships. Once concepts began to emerge, I then began to isolate levels of concepts and pursued further data surrounding the concepts (Corbin & Strauss, 2015).

Axial coding. In this next phase of coding, the goal was to begin to merge the concepts that had been identified into related clusters, which formed a larger category; this is the phase in which the concepts were linked together “to analyze data for context and process” (Corbin & Strauss, 2015, p. 295). It was important at this stage of analysis to focus on process and context, described by Corbin & Strauss (2015) as the connections between actions and interactions, as well as background conditions that influenced them. Looking closely at the dynamic processes that occurred in my participants’ lives, situated within the context as it was described, ensured that my findings were more theoretical than descriptive. At this stage, I transitioned from the *NVivo* software to a more simplistic analysis structure utilizing individual Microsoft Word documents for each of my codes. I found this method more flexible in allowing the use of color-coding and moving data back and forth within and between documents. Throughout the entire enterprise of coding, I was mindful of my participants’ grit level and mindset, denoted by their pseudonym. One of the guiding questions was, *What similarities in experiences and beliefs are exhibited by all of the interview participants, since they all exhibit higher grit?* Alternatively, data analysis took note of differentiating between participants who tested as having a growth mindset, a fixed mindset, or neither.

Selective coding. Finally, a single category was selected as the central theme, and the Grit Growth Theory was generated by integrating all other categories around the central one (Corbin & Strauss, 2015). Once this integration occurred, the Grit Growth Model was

constructed to demonstrate the findings regarding the process of how grit and a growth mindset develop and influence doctoral persistence. In the model (see Chapter Four), the experiences and beliefs, which were found to develop personal grit and a growth mindset, are portrayed, as well as the findings that reveal the proposed relationship between the two constructs. See Appendix Q for a table of code counts that emerged from the analysis process.

Trustworthiness

Because qualitative research involves subjective meaning making from non-numerical data, and because the researcher serves as a deeply integral actor in the data collection and analysis phases of the study, certain steps must be taken to establish the trustworthiness, or rigor, of the findings (Creswell, 2013). In grounded theory, decisions made by the researcher are particularly susceptible to researcher bias, which means that stricter adherence to systematic precautions strengthens the integrity of the final product (Corbin & Strauss, 2015).

Credibility

In order to increase the internal validity of this study, several strategies were employed. Creswell (2013) suggested that at least two strategies be initiated to account for internal accuracy. The first strategy entailed triangulation of the data in order to collect multiple sources of information from the participants' perspective, which acts as "corroborating evidence" (Creswell, 2013, p. 251) toward the identification of categories and themes. Using the interview data, theoretical memoing, the reflective assignment, and a final follow-up questionnaire, I was able to make cross-comparisons between the data sources, which enriched my conclusions. Additionally, I conducted member checking once transcriptions of data were prepared, as well as after analysis and findings were drafted. In this way, the participants endorsed the accuracy of the data before analysis proceeded, as well as the credibility of the findings (Creswell, 2013).

Finally, potential researcher biases were fully disclosed prior to conducting research, so that any preconceptions that may have molded decision-making were revealed at the outset of the research (Creswell, 2013).

Dependability

Similar to reliability in quantitative research, dependability is “focused on the process of inquiry and the inquirer’s responsibility for ensuring that the process was logical, traceable, and documented” (Schwandt, 2015, p. 309). In order to inspire confidence that I stayed true to the process of grounded theory, I carefully documented the steps of the study through an audit trail (Appendix P), and then enlisted an external researcher to examine my audit trail to authenticate my faithfulness to the design components (Schwandt, 2015). Additionally, I recruited an external peer reviewer to vouch for consistent coding in the analysis.

Confirmability

Confirmability calls for the researcher to demonstrate that objectivity remained central to the researcher’s decision making throughout the process; it calls for “linking assertions, findings, interpretations, and so on to the data themselves in readily discernable ways” (Schwandt, 2015, p. 309). Confirmability was strengthened through the aforementioned strategy of keeping a detailed audit trail of the analysis process, as well as utilizing direct participant quotes throughout the representation of findings to support conclusions.

Transferability

Finally, trustworthiness is bolstered by the extent to which the findings can be transferred to other contexts. In the case of grounded theory, “a theory should be sufficiently general that it can be applied to diverse situations and populations” (Corbin & Strauss, 2015, p. 345). Transferability was addressed in this study by using maximum variation in my participants and

by using thick, descriptive data to help the reader extend the context to others. The goal was to vary the participants according to age, race, gender, and socioeconomic status. Additionally, the doctoral programs varied by type, delivery platform, and discipline. In sum, a grounded theory study that generates a theory that is both believable and applicable to diverse domains creates trust with the audience in the quality of the inquiry (Corbin & Strauss, 2015).

Ethical Considerations

In order to preserve the integrity of this study, the strictest ethical considerations were observed. Fundamental to ethical research considerations, the policy of no data collection prior to official IRB approval and site approval was held in absolute adherence. All potential risks to the participants in this study, as well as assurances by the researcher of good-faith measures that would be taken to mitigate those risks, were detailed in the informed consent form (see Appendix D). Participation in the study was voluntary, and recruited participants were assured of their prerogative to withdraw at any time with no consequences. This study posed no more risk to the participants than everyday life, and the only anticipated risk was the potential for identifying data to be lost or stolen. I made every human attempt to prevent such an event by utilizing the most astringent security and confidentiality measures reasonable with the data collected. Physical data was protected by a lockbox, and electronic data was secured by password and the use of pseudonyms for participants. The well being of the participants was of the highest priority in this study, and I communicated this pledge to them, both in the consent form and personally.

Summary

This chapter detailed the specific methods governing how this grounded theory study accomplished its purpose: to create a model depicting how grit and a growth mindset develop and influence doctoral persistence, the Grit Growth Model. By following the procedures, data

collection methods, steps of analysis, and measures of assuring trustworthiness and ethical commitment according to the guidelines set forth in this chapter, I executed this study with the quality and rigor that the standards of scholarly inquiry demand.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this systematic grounded theory research was to develop a model explaining the connection between grit and a growth mindset, focusing on how these two qualities develop and influence doctoral persistence. This chapter presents the findings of the study by presenting and explaining the Grit Growth Model, using supporting quantitative and qualitative data as a foundation for the findings. This emergent theoretical model is illustrated and the answers to the research questions are discussed. The chapter concludes with a summary of the major findings, paving the way for a more in-depth discussion of the results of the study in Chapter Five.

Participants

The interview participants of this study ($n = 12$) were selected using the methods and criteria described in Chapter Three. After receiving 52 survey responses, some volunteering for the interview portion of the study, a list was compiled of potential qualitative participants. Only one survey participant scored as having low grit, but upon contacting him for the interview portion, I discovered that he had not actually yet defended or completed his dissertation. Therefore, participants were selected for interviews based on meeting the criteria of demonstrating a high level of grit, as well as supplying variation in demographics, including age, sex, race, religion, discipline studied, and program proximity (see Table 1 in Chapter Three). There were seven female interview participants and five males. The ages spanned the thirties through the eighties. Six interview participants were in their thirties, three were in their forties, two were in their fifties, and one was in her eighties. Six interview participants achieved a Doctor of Education (EdD), five earned a Doctor of Philosophy (PhD), and one acquired a

Doctor of Nursing Practice (DNP). Four of the interview participants completed mostly residential programs, while eight of them completed mostly distance programs (*mostly* was defined in the survey as 80% + online). The following participant narratives present the basic demographic information shared by each selected participant, brief biographical sketches, as well as quantitative scores on the grit scale (possible scores range from 1 to 5, with 5 being the highest possible grit) and the growth mindset questionnaire (possible scores also range from 1 to 5, with scores above 3 indicating a growth mindset and scores below 3 indicating a more fixed mindset). Each participant's pseudonym was chosen based on these scores: first names beginning with *H* indicate high grit scores. Since no participants scored low on the Grit Scale, no participants were designated with a first name beginning with *L* for low grit. Each participant's last initial indicates growth (*G*), fixed (*F*), or neither (no initial) mindset. Finally, each participant's own attribution of what most enabled their completion of a terminal degree concludes the narratives. The participant narratives are presented in the order in which the interviews occurred.

Holly G.

Holly G. identified herself as a married, African-American female in her thirties. She was raised in a two-parent family and had two half siblings from previous marriages. She grew up in a small, southern town and said her family “didn’t have a lot of money”, but they also used the resources they had to travel, even internationally, to gain exposure to a variety of places and people. In her growing up years, emphasis was placed on doing her best in school and spending time with family. Although she attended Catholic schools as a child, her parents did not engage in the faith. However, Holly G. indicated that she currently practices the Christian religion in the Catholic Church. She recently completed a primarily residential EdD program in Higher

Education and works in higher education at a community college near her hometown. She considers one of her greatest strengths, “always being able to find my way, find my crowd, or find my tribe, if you will. That's something that no matter where I am, I feel like I do really well.”

Holly G. scored 3.75 on the composite grit scale (4.25 in perseverance/3.25 in long-term interest), earning her a pseudonym beginning with *H* for higher grit. Additionally, she scored 3.63 on the mindset scale (3.25 in intelligence/4.0 in kind of person), leading to her being designated as having a last initial of *G* for endorsing a growth mindset. When asked to provide a single word or phrase that explains what most helped her finish her degree, she listed three: (a) trust in God, (b) a strong support system, and (c) an intentional self-care routine.

Hannah G.

Hannah G. reported being a white, married female, also in her thirties. She grew up in the suburbs of a northeastern city in a family of comfortable means. Her parents remain married, and she has three sisters with whom she shares close relationship. Growing up, she developed a deep love of reading and learning and considers herself an extremely conscientious student. She currently identifies with the Jewish faith and had early influences in both Jewish and Catholic practices. Her family emphasized “the idea of giving back—and that you don’t give back for the personal attention—but you have a duty to serve your society.” Her PhD degree is in Educational Psychology, and her program was primarily residential. She is still working on a post-doctoral program in a mostly distance capacity and believes “it's about finding something that is self-satisfying and not giving up on chances to do that even if it means working hard.”

Hannah G. scored a composite 4.25 on the grit scale (4.5 in perseverance/4.0 in long-term interest), explaining her first name beginning with an *H* for higher grit. Her mindset score was

3.88 (4.0 in intelligence/3.75 in kind of person), earning her a last initial of *G* for affirming a growth mindset. She attributed her completion of a doctoral degree to a strong emotional support network and personal passion for her topic.

Helen F.

Helen F., one of only two participants whose quantitative score identified as endorsing a fixed mindset and consequently a last initial of *F*, indicated that she is a white, married female in her forties. She was raised in a two-parent family that is deeply devoted to the Christian faith, and she continues to live a life in which her faith is central. As a family involved in ministry, they struggled financially, but she said, “I don’t ever remember feeling poor.” Losing her father—who she favors in personality—several years ago, has been the hardest thing she has ever experienced. However, she is also able to be thankful for the time she had with him: “I have such joy in the pleasure of what I had with him.” She completed an EdD in Nursing education, which was mostly distance through her own institution and works in upper administration in higher education bettering the nursing preparation programs offered to students.

Helen F.’s grit score was 4.38 (5.0 in perseverance/3.75 in long-term interest), leading to a first name pseudonym beginning with *H* for higher grit. Her mindset score was one of only two interview participants that fell beneath the 3.0 midpoint, indicating a more fixed mindset. With a composite score of 2.5 (3.0 in intelligence/2.0 in kind of person), Helen F. provides for interesting discussion of the role of mindset in doctoral persistence. However, it is worth noting that the qualitative data from Helen F. tells a different story. She described herself as a former task-driven leader who successfully transformed into a more relationship-based leader, indicating that she does, perhaps, endorse a growth mindset:

When you looked at what my focus was always on—the tasks of life—and so I did a lot of work [on myself] as a leader. . .and that's something that the people that work for me now will say, *you are such a relational person, you're so very engaged.*

Additionally, Helen F. mused, “I feel that when we look at successes and failures as a time to learn, we really do win. A failure is only a failure if you do not learn from it.” It seems likely that her mindset score did not accurately reflect her viewpoint in this case. When asked what most helped her finish an advanced degree, she indicated that God and intentionality pushed her past the finish line.

Hester G.

Hester G. described herself as an African-American, married female in her fifties. She grew up in a small southern community in a housing project, although she said that her grandmother, who worked at the nearby university, made sure that she and her two siblings “never missed anything.” She was raised by her mom and her mom’s partner who she says “took me as his child” around the age of two. While growing up, her mother converted from Catholicism to Jehovah’s Witness, and Hester G. still practices the faith of Jehovah’s Witness to this day. It took her 10 years to complete a mostly distance PhD program in Psychology as a working professional, and she works in higher education in the same community where she grew up. She believes that “even the negative can be a positive if we are in tune with ourselves and our faith because not everything is man-made. Some things are designed by God. Even mistakes.”

Hester G. scored a 4.38 on the grit scale (5.0 in perseverance/3.75 in long-term interest), indicating a high level of grit, and therefore a first name pseudonym beginning with *H*. Additionally, her growth mindset score was a 3.88 (4.5 in intelligence/3.25 in kind of person),

reflecting an endorsement of a growth mindset. She was asked what single word or phrase communicates what most helped her complete her degree, and she responded with, “Failure was not an option.”

Harrison G.

Harrison G. identified himself as a white, married male in his forties who grew up in a well-to-do, influential family of two parents and one sister. He has always been a high achiever, attending West Point Military Academy and serving honorably in Iraq. Harrison G. was raised in a Catholic family who practiced the traditions of the church, but who lived life according to their own desires and morals, which diverged from traditional Christian morality in many ways. As an adult, Harrison G. reached a turning point during his military service, at which time he committed his life to biblical Christianity. He continues to live out that faith today. He completed an EdD in Educational Leadership through a primarily distance program, but at an institution in his own town. He is presently serving in upper leadership at a thriving Christian K-12 school and shared, “I’m very proud that I’m able to represent this school and represent Christ in a way that honors it. . . I want to honor my community, have people be proud of this, not of me, but of this community.”

Harrison G.’s grit score was 4.5 (5.0 in perseverance/4.0 in long-term interest) earning him a first name pseudonym beginning with *H* for higher grit. On the mindset questionnaire, he scored a 3.25 (3.5 in intelligence/3.0 in kind of person), barely reaching the designation of endorsing a growth mindset and last initial of *G*. He attributed his completion solely to the dedication and support of his committee chair.

Harry

Harry reported being a married, white male in his thirties. He grew up relocating frequently since his father worked for the Department of Defense. He was raised in a two-parent home with one brother, but he lost both his mom and brother during his young adult years.

Financially, he said of his family, “we weren’t rich, but. . .we were totally secure.”

He considers himself non-religious. He completed his PhD in Clinical Psychology in a mostly residential program and works in higher education and the private sector in mental healthcare.

When pursuing goals, he believes in maintaining a “balance and not even a middle ground, but sort of holding both of those concepts as truth at the exact same time, where it's like I can totally be working towards things and moving towards something and yet I can also be 100% content where I am and holding both those things.”

Harry’s grit score was a 4.13 (4.25 in perseverance/4.0 in long-term interest), leading to his designated first name pseudonym beginning with an *H* for higher grit. Harry’s score on the mindset questionnaire was a midpoint score of 3.0 (2.0 in intelligence/4.0 in kind of person) causing him to be the only participant with no last name initial, indicating he endorses neither a growth nor a fixed mindset overall. When discussing what most helped him complete his degree, he expressed that he considers himself adept at navigating the tension between flexibility and rigidity—that he is able to walk the line between working toward a goal, while also finding contentment in the here and now.

Heidi G.

Heidi G. identified herself as a married, white female in her thirties. She grew up in a family of six with both parents working as teachers, which enabled her family to enjoy traveling during the summertime. Heidi G.’s family followed the Christian faith during her childhood, but

she described herself as currently non-religious. She completed her PhD in Literature in a primarily residential program and works in higher education administration. She is relishing the aftermath of her degree program: “I try to do things like I finally read for enjoyment again, which took about a year and a half after writing a dissertation to really want to read again. . .finding something that has nothing to do with work and realizing that that's fully valuable to do in your life on a daily basis.”

Heidi G. scored 4.0 on the grit scale (4.24 in perseverance/3.75 in long-term interest), thus securing a first name beginning with *H* for higher grit. She also scored a 3.75 (4.0 in intelligence/3.5 in kind of person) on the mindset instrument, resulting in a last name initial of *G* for endorsing a growth mindset. When asked what single word or phrase depicts what most helped her finish her doctoral degree, Heidi G. said, “Persist. The concept of continue—to keep going.”

Henry G.

Henry G. described himself as a married, white male in his thirties. He grew up in a family of little means, reporting that “we were quite poor. . .resources were, were always, uh, strapped and. . .my dad. . .frequently worked two, sometimes three jobs to make ends meet.” Although his immediate family abstained from active pursuit of religious faith, Henry G. has practiced the Christian faith since childhood as a direct result of the influence of his grandmother. He completed a mostly distance EdD program in Higher Education Leadership and currently works in higher education administration. Tough times as a child and as an adult have taught him personal resilience and responsibility: “I would also say that the core values that were instilled in me at an early age, that things in life aren’t gonna treat you fair, but you dig deep, and you make things happen for yourself because nobody else is going to do it for you.”

Henry G.'s grit score was a 3.75 (3.5 in perseverance/4.0 in long-term interest), leading to his designation of an *H* first name, representing a higher level of grit. Additionally, he scored an even 4.0 (4.0 in intelligence/4.0 in kind of person) on the mindset instrument and received a last initial of *G* for affirming a growth mindset. Henry G. ascribed his doctoral degree completion to his own resourcefulness, as well as his continued efforts to see it through until the end.

Hayden G.

Hayden G. indicated that he is a white male in his forties and married. He was raised by Christian missionaries and remains a practicing Christian. Later in his childhood, however, his parents divorced, and he was then raised as part of a large, blended family. Hayden G. served in the military and then became a high school teacher and coach. His doctoral degree was mostly distance and resulted in an EdD in Curriculum and Instruction. He is currently a teacher and coach in high school and uses his own experiences to motivate his students and athletes: "You got to mentally prepare yourself and push yourself through any type of obstacles. . .in life, you're not gonna always win. You're going to have the failures and losses in life. . .how you respond is what makes you who you are."

Hayden G. scored a 3.75 (3.75 in perseverance/3.75 in long-term interest) on the grit scale, resulting in a first name pseudonym of *H* for higher grit. His mindset score was a 5.0 (5.0 in intelligence/5.0 in kind of person), earning a last name initial of *G* for upholding a growth mindset, as well as the distinction of the highest growth mindset score of all the participants. When asked what single word or phrase expressed what had most helped him complete a terminal degree, he indicated that God and self-motivation deserved the credit for his success.

Hazel F.

Hazel F. described herself as a married, white female in her eighties. She has had a happy and active life, growing up enjoying the hustle and bustle of a family restaurant and then engaging in a wide variety of experiences as an adult, including flying airplanes. Hazel F. grew up as an only child in a Christian home and her faith continues to play a prominent role in her life. Her doctoral degree was primarily distance, with some face-to-face classroom time as well. She earned an EdD in Curriculum and Instruction and plans to use her degree to teach at the higher education level. At 81, Hazel F. firmly believes people should “always do the best you can. . . if you're going to do something, do it well. If you can't do it well, then don't take on the job.”

Hazel F. scored a 4.75 on the grit scale (5.0 in perseverance/4.5 in long-term interest), earning a first name initial of *H* for higher grit. She is only one of two interview participants to score below a 3.0 on the mindset scale, resulting in a last name initial of *F* for a more fixed mindset. Her composite mindset score was 2.88 (2.25 in intelligence/3.5 in kind of person), indicating that she very nearly endorses neither a fixed or growth mindset, or is undecided. This is not a rare occurrence, as Dweck (2016) reveals that about 20% of the population score in the neither fixed or growth mindset range. When asked what most helped her finish her doctoral degree, Hazel F. attributed her accomplishment to her own determination.

Heather G.

Heather G. is a married, white female in her fifties who was raised in a family of Ivy League professors who were also devoted atheists. As a young adult, however, she committed her life to the Christian faith. Both of her parents were married several times, enduring both divorce and loss. As a young adult, Heather G. served in the military as a nurse. Her doctoral

degree was mostly distance, and she earned a DNP in Nursing. Heather G. presently works in higher education, serving as a nursing program administrator and instructor. She takes her work and its contribution to society at large very seriously: “I work very hard to give an excellent education to my students even if it means late hours and extra work. I recognize that the education I am providing to my students will eventually impact thousands of patients across the nation and even the world.”

Heather G.’s score on the grit scale was 4.63 (5.0 in perseverance/4.25 in long-term interest), leading to her first initial of *H* for higher grit. She scored a 3.75 on the mindset scale (2.5 in intelligence/5.0 in kind of person), indicating a wide difference of endorsement of the two sub constructs. Heather G. also credited her successful completion of a doctoral degree to her own determination to finish, indicating that a strong sense of personal pride is a factor in that determination: “When I say I’m going to do something, I have to do it.”

Hezekiah G.

Hezekiah G. is a married, white male in his thirties who is a practicing Christian. His parents sent him to Christian school as a child, but they did not focus on religion in the home. His growing up years were heavily affected by the sickness and passing of his younger brother at the age of 12. Later in life, his parents divorced. His degree is a PhD in Higher Education in a mostly distance program, but at the institution of his employment. He presently works as an administrative analyst and is always seeking to be better: “Striving for excellence is a backbone of what I do. I always want to improve, I always want to make more money, and I always want to be in a better position than where I was. I think this is one of the key reasons for the PhD. I wanted to move ahead and never be limited by my education.”

Hezekiah G. scored a 4.25 (5.0 in perseverance/3.5 in long-term interest) on the grit scale, resulting in a first name pseudonym of *H* for higher grit. His mindset score was a 3.5 (5.0 in intelligence/2.0 in kind of person), earning a last name initial of *G* for upholding a growth mindset. When asked what single word or phrase expressed what most helped him complete a terminal degree, he indicated that family and having a great chair were the reasons for his success.

Results

In this section, the Grit Growth Model, the steps of theme development, and the results of the study are presented. The core category and predominant themes are discussed, and the answers to the research questions addressed. The process of data analysis and theme development through coding was discussed in detail in Chapter Three and the table of final code counts is seen in Appendix Q. The results of this study produced a theoretical model, the Grit Growth Model, which illustrates the answers to the central and supporting research questions, and therefore depicts how grit and growth mindset develop and influence doctoral persistence. Corbin and Strauss (2015) discussed the original grounded theory criteria from Glaser and Strauss (1967), which required that the developed theory be credible and applicable. Member checking, peer review, and expert review provide confirmability that the Grit Growth Model meets both criteria, as it is both believable and can be aptly used to support grit growth in doctoral students by program leaders, as well as generalized to a wider audience.

Theoretical Model

As the analysis of data progressed and the search for a visual representation of the results ensued, I knew that a flowchart would not adequately communicate such a dynamic scenario as the complexity of factors involved in the growing of grit. Because of the allegory intimated by

the title of the study, I felt that a representation of a living, growing organism was crucial to the effective illustration of the results. My testimony of the emergence of the grapevine as the model, as a side note, can be found in the form of a reflective piece in Appendix L. Corbin and Strauss (2015) emphasize the importance of creating an understandable and relatable model: “The most carefully crafted theory is likely to lose its impact if it is not put into a form that makes it readily available to other professionals and perhaps lay persons” (p. 311). The Grit Growth Model (Figure 3) satisfies these conditions as it illustrates the process of how grit and a growth mindset develop and influence doctoral persistence to completion in an understandable form, also detailed in the narrative sections that follow.

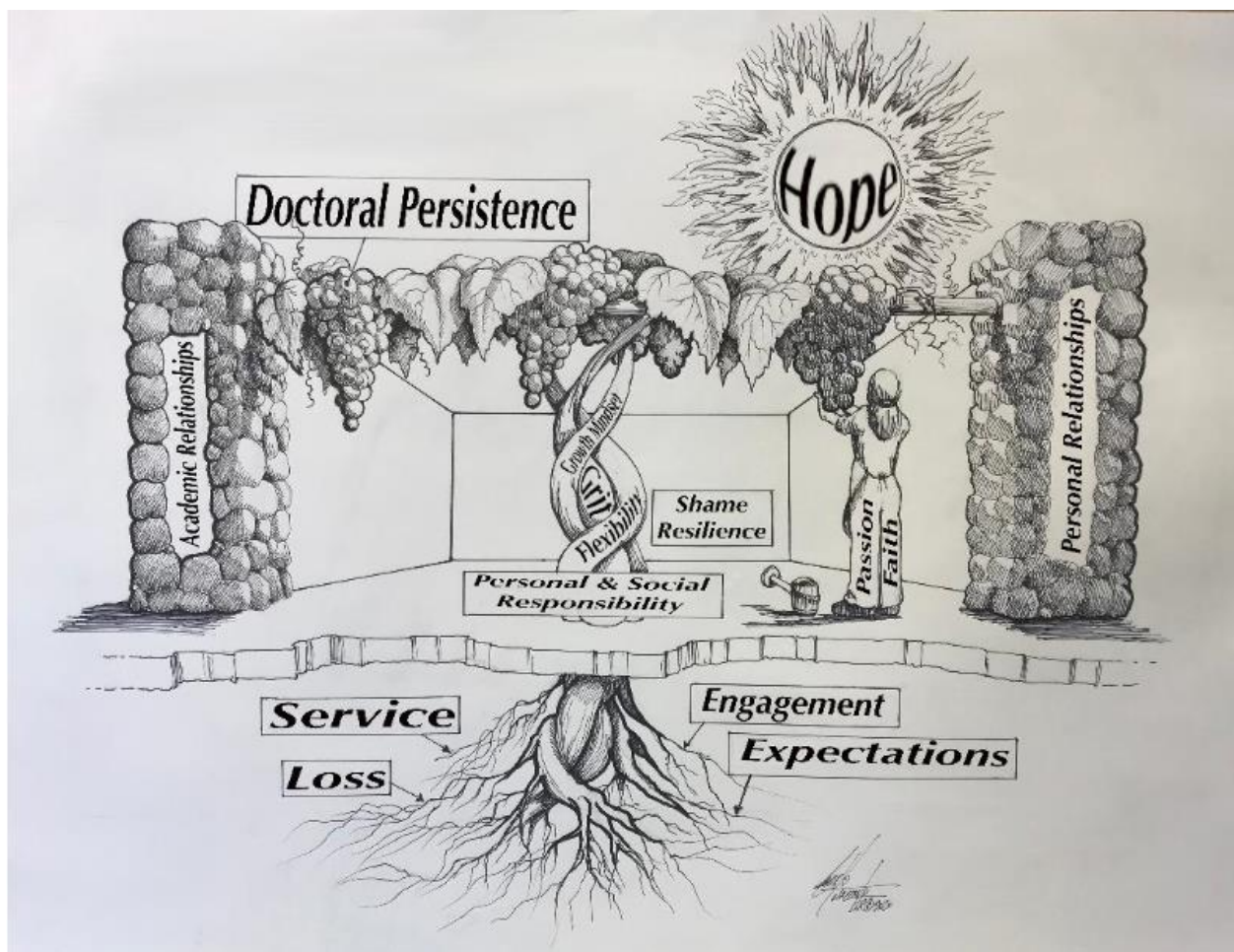


Figure 3. Grit Growth Model.

Grapevine—Doctoral completers. The entire grapevine plant in the model represents the individual who completes a doctoral degree. The Grit Growth Model depicts a person as a grapevine that is comprised of separate components, or vines, which represent personal characteristics. The fruit borne by the individual shown in the model, ripe grapes, depicts doctoral persistence to completion. As part of a complex system, the grapevine flourishes as a result of dynamic interactions between a variety of factors. In order to produce healthy fruit, the grapevine must be established in a conducive environment, draw nourishment from a well-watered root system, and develop and grow hardy components (Winkler, 1974). Additionally, the grapevine must be trained and pruned in the right direction, lean on dependable support structures, and abide in a habitat protected from pests (Winkler, 1974). For doctoral completers, this study revealed those factors, which are represented by the components of the vine and vineyard discussed in the following sections. Grapevines are considered generally tenacious plants that tend to generate wide-spreading root systems and which demonstrate persistent growth when conditions are favorable (Winkler, 1974), similar in many ways to a doctoral completer.

Sun—The presence of hope. For a grapevine to bear good fruit, growers must take care to ensure that the environment is favorable, especially regarding temperature and other climate-related conditions (Winkler, 1974). An otherwise hardy plant, in the wrong conditions, will not yield the desired fruit. Similarly, for a person to successfully complete a doctoral degree, an atmosphere of *hope* is key in providing the necessary stamina to supply the needed effort. Heidi G. subscribes to a hope that is rooted in her own efforts, that “if you show that you are working in good faith and you're continuing to do things, that you will be rewarded eventually,” whereas Henry G.’s hope lies within his trust in a higher power:

We just trust in Jesus with our whole hearts. . .we only see a sliver of what's going on.

We just see what's right in front of us. But God sees the whole picture. He works for our good. . .we just trust him with our whole hearts.

Therefore, the sun was selected in the Grit Growth Model to represent the important presence of *hope* in the doctoral completer's journey.

Vines—Personal characteristics. Grapevine plants produce individual vines (arms) that are designated in the Grit Growth Model as representing personal characteristics of the individual. In the model, the characteristics of *grit* and a *growth mindset* are illustrated as intertwining, since the quantitative and qualitative findings indicated that these characteristics are both present in the majority of the participants in the study, suggesting a probable inherent connection. Many of the participants expressed views similar to Hayden G.'s:

I believe grit is a toughness or a person with the will to succeed. It is a want-to attitude and doing something about it. I think it is something that has to do with your desire, and it can be developed if you are around like-minded people. I think athletes have growth mindsets. They are able to talk themselves into being successful even if they have failed. I think that with all those coming together a person can achieve success. A person has to want it and be able to go after it!

Furthermore, the qualitative results of this study revealed a potential correlation of a third personal characteristic, *flexibility*, depicted also as a separate vine. Harry articulated this best:

I know lots of people who have a lot of grit. These people tend to be those who are most flexible with changing circumstances. These folks certainly have disappointments and setbacks but rarely seem to be overwhelmed or stalled in moving toward things they value and find meaningful.

Roots—Life experiences that develop grit. The roots of the grapevine signify life experiences that develop grit in doctoral completers. The common categories of *expectations*, *engagement*, *service*, and *loss* that emerged as life experiences, which develop grit, are represented by the root system of the grapevine in the Grit Growth Model.

Most of the participants were subjected to certain *expectations* of others during their lives to either expend satisfactory effort academically or otherwise fulfill intentional obligations or character standards. Hester G., whose background as a child included living in a housing project, recalled the academic expectations she experienced:

Learning was important in my community. . .It was just go out, graduate and try to live a very productive life. . .and I tell people my mom was not the parent who worried about us finishing school, whereas some parents struggled. . .[but my] mom said that was kind of just expected of us.

For Hannah G., the idea of contributing was communicated in terms of community service, as she knew that she was expected to answer a call of duty to serve: “The idea of giving back and. . .[not] for the personal attention, but you have a duty to serve your society. . .My parents both really believe that you need to be spending your time contributing.”

Additionally, most participants experienced committed *engagement* in some sort of extracurricular activities and/or a wide variety of life experiences beyond daily living, such as travel or relocating. *Engagement* occurred during childhood, as in the case of Harry who grew up in a lifestyle of travel with the Department of Defense, which introduced opportunities to meet and integrate with many new people frequently, but also to then lose contact with them and start all over again:

Those experiences were really meaningful to me, and I really enjoyed them. . .yet they were also kind of challenging because. . .you make close friends and you meet people and you develop relationships. . .and then you move . . .we grew up on military bases. . .you would be moving every three, four or five years, but then everyone else would be moving. . .and it was never on the same cycle. . .that was kinda tough.

Engagement was also evident in the participants' adult lives, as in the case of West Point Military Academy graduate Harrison G., whose commitment to taking a leadership role in high school and college sports, and then transitioning to embracing leadership opportunities in the military, professionally, and through service organizations as an adult, has remained central to his character: "I have served at [my church] for many years, serve currently now as a certified pastor and a deacon in the church. . .have served in college ministries. . .adult ministries. . . service is part of. . .my DNA."

All of the participants are also currently devoting their professional energies toward *service*-oriented disciplines, such as education or nursing, indicating a desire to contribute to the betterment of society above obtaining individual financial gain. Holly G. expressed:

I feel a responsibility to the education community. . .Typically we are ranked between 48-50th in the nation in terms of health outcomes and education outcomes. I feel that the work I am doing is important in changing the outcomes of [my state's] citizens for the better.

Furthermore, the participants hail from families that either served in the military or in ministry, or both. Helen F. recalled her early years when her father was a pastor:

I was probably in the lower socioeconomic life. I know there was a few years at a time when dad didn't receive a paycheck from the church at all because it was a small church. . .[but] I don't ever remember feeling poor.

Finally, a large percentage of the participants gave an account of experiencing personal *loss*, either as a child or an adult. Hezekiah G.'s whole life has been marked by the sickness and passing of his younger brother, who died at age 12:

I would say [my life] was really difficult, especially earlier in life before the age of 13, because I had a brother who had severe cerebral palsy. He was about a year younger than me and lived to be 12 years old and he only ever weighed 40 pounds at his most, so it was severe. . .my dad worked a second or third shift, so I'd get home from school and he would go to work every single night. It was a little difficult then.

Represented as individual roots, these categories of life experiences seem to all coalesce to develop into the trunk of the grapevine, the central theme.

Trunk—Core category of Personal and Social Responsibility. The categories that emerged from the life experiences, as well as the values and beliefs of the participants, all synthesize into a single core category of *Personal and Social Responsibility* (PSR), represented by the trunk of the vine. Each participant demonstrated through words and actions a resolute commitment to accomplishing the goal (the doctoral degree) by whatever means necessary. Hazel F. articulated the running theme that emerged of *no one can get this degree for me but me* when she shared, “Everyone needs and accepts help when it is needed. However, you are totally responsible for achieving the doctoral degree. No one can do your thinking for you.” Additionally, manifest in all participants’ lives is strong evidence of a sense of duty to serving the larger good in society. Helen F. communicated that in her mind, “what I do when I research

should be beneficial to the community of professionals, uphold ethical integrity, and be representative of how I can positively impact others.” This sense of *personal and social responsibility* stems from the expectations, experiences, and individual value systems of each person and leads to the development of personal characteristics needed to achieve the goal of doctoral completion.

Vinedresser—Values and beliefs that develop grit. The vinedresser in the model does not symbolize a person, but rather represents those values and beliefs that act as molding or guiding forces in the person’s life. These forces interact directly with the vine, indicated by the tool in the vinedresser’s hand, and also with the roots, illustrated by the nearby watering can. The common categories emerging from the findings suggest that religious *faith* and/or personal *passion* for learning or a specific field comprehensively influence the direction and experiences of the participants’ lives. These internal forces not only shape the person directly, but they enhance and nourish the experiences as well.

Many participants grew up in homes of faith, but some, like Heather G., found faith on her own as an adult: “God's always been the center of it. [My husband and I have] been very strong believers working in the church.” Other participants like Hannah G., found personal meaning and purpose through their passions:

I just love learning. Pursuing a doctorate felt like the ultimate privilege. It wasn't like I went into it like, “Oh, here's my job.” I was like, “Great! Five years in school. Awesome!” I truly love school and then I finished my PhD and I'm thinking, “Should I go back and do another one?”

Pillars—Relationships. The findings of this study identified the preeminent value of *personal and academic relationships* to persistence efforts. Depicted as the framework for the

support of the grapevine, these relationships interact with the person's ability to grow and the fruit to ripen. Although a vital element of the process of grit development and persistence, these relationships themselves do not function as experiences or values. Participants in this study *intentionally* identified the critical role that these relationships played in their lives and took *personal responsibility* for leaning into that support as needed. Harry aptly voiced this idea:

There are certainly times to ask for help, but even that's ownership, right? To ask for help or to request help is still ownership of the task. . .I think that that's not inconsistent with personal responsibility. Even to seek help and to seek guidance is still a demonstration of, and a reflection of personal responsibility.

Fence—Unexpected theme of shame resilience. The fence around the vineyard represents another unexpected theme from the data. Many of the participants expressed a propensity for allowing themselves the grace to make mistakes, while not being overcome with feelings or expressions of doubt, failure, or hopelessness. Hannah G., for example, admitted that mistakes caused a certain level of distress:

Internally, making an error or failure in doctoral experiences was extremely disheartening and threatening to me. I value being excellent at my doctoral studies and thus a mistake or error made me feel careless, under-prepared, and served as a threat to my sense of self. I would worry about it for a long time and the only real way to feel better was to engage in distractions (like exercise).

However, she did not view her errors as irredeemable and was not deterred by them: “Externally I would try to admit to the error, and apologize, and see what could be done to fix it.” This demonstration of Brown's (2012) concept of *shame resilience* served as a protective factor in the

participants' ability to develop grit in the quest for a doctoral degree, thereby explaining the decision to represent this characteristic as a fence controlling for pests, rather than as a vine.

Fruit—Doctoral completion. The fruit of the grapevine, ripe grapes, represents the peak of the doctoral candidate's journey—achievement of the degree. This symbol of *doctoral persistence* aptly epitomizes the culmination of the committed belief and continuous effort required to reach the important milestone of completion. However, the selection of grapes is an intentional decision in that, just as earning a terminal degree is not truly an ending but instead a beginning, harvested grapes are only the first step of a rich refining process which develops world renowned fine wines. Similarly, doctoral completion opens the gateway to limitless possibilities in both arts and sciences.

Heather G. captured the relief of finishing and the continuing development that she is pursuing:

Finishing my DNP was at first just a great relief, no more papers hanging over my head! Then I started to hear my new name. I was a Dr.! To hear my students refer to me as doctor made me feel like I was finally legit, like I deserved to be a professor for the first time. My mother had been a PhD and I grew up hearing her students call her Dr. She died before I even started teaching, but I knew she would have been proud. It was, and still is, a bit surreal to think that I have attained a terminal degree, reached the end of the line in my education. Then again, I'm currently working on my Certified Nurse Educator certificate, so maybe we are never really done!

This Grit Growth Model of a grapevine, support structure, vinedresser, and enclosure illustrates the process of grit and growth mindset development in doctoral completers. Just as the parts of this intricate system all coalesce to successfully produce delicious fruit, the experiences,

values, protective factors, and relationships of doctoral students all converge to bring their dream of degree completion to sweet fruition.

Theme Development by Research Questions

The central research question, *How do grit and a growth mindset develop and influence doctoral persistence?*, was divided into underlying sub-questions. The following sections detail the findings derived from analysis of the data produced by the participants within each sub-category during the interview, reflective journal, and follow-up question portions of the study (see Appendix Q for code counts). Additionally, I include some key researcher memo data to support the findings presented. The participants were first asked to broadly share the highlights of their growing up and adult years—high and low points—as well as general questions about their experiences and values. Once initial themes emerged, follow-up questions focused on the finer details of those experiences and values. This section concludes with the core theme identified as the answer to the central research question.

Sub-Question 1: What life experiences influence the development of grit in doctoral completers? The participants shared a wide variety of life experiences that may explain the development of long-term passion and perseverance. The participants' responses revealed themes of *engagement*, *expectations*, *loss*, and *service*. The following sections further describe these themes identified as common threads within these experiences and delve into the supporting data within each theme.

Engagement. For the purposes of this study, *engagement* is defined as involvement with activities, life experiences, and/or the wider world in ways that are outside of the routine which results in personal stretching or gaining additional perspective. Engagement encompasses any life experiences that expanded the horizons of the participants beyond the realm of basic daily

living. For the most part, extracurricular activities—such as sports, music, or dance pursuits—satisfied the question of engagement. For others, occasions to travel, or even lifestyles of travel, expanded their level of engagement beyond the scope of their basic routines by providing increased exposure to a variety of both opportunities and challenges. Changing schools locally or by means of relocating entirely introduced another avenue of broadening the participants’ perspectives. In sum, engagement encompasses those interactions on a small scale (activities) and large scale (moving), which have taken participants past essential requirements of living—outside of their normal comfort zone—and added new perspective through exposure or personal growth.

Holly G. remembered being active in ballet classes as a child and how that experience paved the way for her to audition to be on the dance team later in college:

I don't know if I ever said when I was three or four, “Hey, can you send me to dance class?” But they did that. So, I think that was good, because when I wanted to try out for the team [in college], I already had the background to do it because my parents gave me that opportunity as a kid.

Additionally, a friend of hers in high school nominated her for class president, even though she was newer to the school. The sitting president at the time attempted to circumvent a democratic coup by also nominating her for class secretary. Holly G. looks back on this moment in her life as the time when her eyes were opened to her own capabilities: “I was like, ‘oh, she thinks I’m going to beat her at president. So, she nominated me for secretary.’ Then I was like, ‘I can probably beat her. If she thinks I can beat her, I probably can.’” Emboldened by this revelation, Holly G. recalled, “I declined the nomination for secretary and accepted the nomination for president, and I won the election for president. That was my first leadership role in life.”

In addition to encouraging activities, Holly G.'s parents also ensured that she was exposed to the wider world beyond their own town:

[My parents said], "We don't want you to [have a] small town mindset with no exposure to anything else." We made a lot of trips around the country, so I had seen a lot. I'd seen Washington, DC, New York City, Florida, California, Pennsylvania, Philadelphia. . .I had a lot of exposure. . .They even took me to Cairo, Egypt when I was a senior in high school. . .We went to see the pyramids and the Sphinx and the desert and tasted the food. I remember being so excited about the mangoes there, because the mangoes there were much better.

These traveling experiences left a positive impression on Holly G. as she enjoyed the adventure and the introduction to interesting places across the globe; however, her childhood experiences with changing schools frequently introduced challenges which made a negative impact: "Almost every two or three years I was integrating into a new environment. So that was new people. I was in situations where I was the only black kid in the class back in the 80s and 90s." She recollected recurrent social difficulties upon switching schools due to being new, a minority, and economically challenged.

Hannah G. also remembered growing up spending her time actively involved in a cross section of pastimes. Within the home environment, there was a strong focus on occupation with worthwhile activities such as "playing a lot of games, doing a lot of intellectually challenging things." Both curiosity and a love of learning were established early in life and shine through in her current post-doctoral role, as she acknowledged that:

Having the privilege and the freedom to go to graduate school to have it paid for, to be able to really study all these things that I love. . .It's so nice and so fun. You just get to engage with all of these cool things.

Today, she considers one of her prominent strengths to be an authentic enthusiasm for a wide array of passions.

Similarly, Hannah G. remembered struggling with making the academic and social adjustments necessary when changing schools:

Switching schools and switching back was a pretty formative experience because I had been with the same group of people my whole life and this was a much harder school. I struggled a little more and had to figure that out. . .then socially, making new friends and thinking about who I was. I think that shaped me in a negative way because it made me really self-conscious. . .I was pretty confident going into that. That took me down a lot of pegs. It wasn't like a positive shaping experience.

Both Holly G. and Hannah G. perceived that the frequent moves that they experienced as teenagers negatively affected their lives.

Harrison G. grew up in an affluent family in the community where he frequently “played golf and tennis” for leisure at his family’s country club. However, the extracurricular activity which dominated his growing up years was that he “was a hometown hero, basketball star” in high school who went on to play Division I basketball at the college level at the United States Military Academy at West Point. He expressed gratitude that his current daily commitments to church and his school have stood as an example to others and is especially glad that “I've been able to pass it on to my daughter.”

Harrison G. began his journey of traveling outside his comfort zone when he left home to attend West Point. He recalled reveling in the admiration of his community at the time, who rooted for him to succeed: “this kid's willing to leave like his family, this nest egg and go and try to pull that off.” During his time at West Point, he was stretched beyond any previous experience. Whereas, he was accustomed to getting stellar grades, he then learned that life would be different in a way he had not suspected:

I think I got a one or 2.2 GPA my first semester there playing basketball and trying to navigate all of this and I couldn't do it. I couldn't manipulate my way out of things anymore. That was a huge wake-up call. . .now I actually have to. . .completely dedicate myself if I'm going to get through this. And so, I became a dean's list student, but it took me some time to figure all that out.

After college, his travels continued during his military service in the form of deployment to Iraq. He considers this experience a turning point in his life:

Going to Iraq was a challenge that changed me. . .that re-dedication came, and you know, crazy things happen when you realize that bullets are gonna be flying by your head. . . You better get yourself straight. So that re-dedication was a huge change.

Harry reported living a full and busy life growing up, both within the context of school (“I took lots of arts and lots of gym classes and lots of exercise classes in high school”), and also by participating in wrestling in high school and college, as well as other sports: “Sports were a big thing, and so my parents were really engaged and available, so I had a lot of opportunities - to do well and I was exposed to a lot of things.” When asked about his involvement in community service now, he shared:

I coach wrestling. . .all sorts of pro bono clinical trainings without charge where I could easily charge hundreds of dollars an hour. I see patients regularly pro bono. . .I belong to a number of committees or organizations or boards. . .that promote wellbeing.

It is evident that Harry has continued to live a life filled with engagement in various contexts of life. Harry was also exposed to an extended spectrum of life experiences due to his father's career:

My father worked for the Department of Defense and so we moved around all the time... We moved around in Europe. . .England, and then moved back to the U.S. and then moved to Germany. And then we lived in Belgium for several years.

Although tough in many ways, Harry is convinced that his upbringing was developmental in a very positive sense, "I think it developed some pretty good skills. . .we always had great teachers and it was a great environment. . .It fostered education and general well-roundedness."

Overall, it was a lifestyle that Harry described as building within him openness to experience:

The expectation was that, if there was a food, you would try it and if you didn't like it, then you could say you didn't like it and not eat it, but you would still try it. You wouldn't have the option to not try something.

Heidi G. recollected being active in a variety of extra-curricular activities while growing up: "I was really involved in a lot of different things all the way through middle school. . .in high school my focus was marching band and yearbook and I also did sports, so I was in volleyball and softball." A sub-theme within the extra-curricular category was that many times the activities were competitive and demanding, such as in Heidi's G.'s experiences with marching band:

I still have nightmares about band. . .that's because I had a director who was very demanding. . .and we spent a lot of time every fall doing marching band. It wasn't just a football game kind of deal. . .It was competitive. . .every Saturday in the fall we would go and compete.

Another aspect of note was the participants' prolonged engagement with more than one activity, as also in the case of Heidi G., whose range of long-term activities spanned beyond marching band and sports: "I was a dancer from the time I was three years old until I graduated high school. . .I really enjoyed it."

Heidi G. also benefitted from her parents' dual career as educators, in that their schedule allowed for time to travel: "We would travel. I think that. . .helped show me different ideas about. . .both the country and how we view things. We went to museums a lot." Additionally, she recalled being challenged by a teacher to embrace new opportunities within the school setting in an area of passion—writing:

By senior year I entered a writing contest and I actually got first place in that contest. . . she would have been my. . .yearbook and journalism [teacher], and she really helped to get me out of my comfort zone in writing. . .she was very supportive. . .and encouraged us to think outside the box.

This passion for writing also led to travel later on, "I went to Prague for a summer and got to meet a bunch of awesome writers and. . .get new people to talk to from different parts of the world, which is really awesome."

Hayden G. shared that he grew up competitively playing, and also heavily supporting, athletics: "I ran cross country. I wrestled. . .some of my highlights would be wrestling, 'cause I was a state champ in high school. I went to football games, supported every team, went to

basketball games.” Sports were also discussed as a means of coping with life’s challenges, such as dealing with his parents’ divorce: “It was either dwell on that or just do what you can to make yourself better. And then I think that’s why I got involved in sports, and just had an outlet because of that circumstance.” After a poor performance in college during his initial attempt, a stint in the military readied him to try again. Hayden G. even wrestled in college the second time around: “I went back to college at 29 years old and I was able to wrestle too. . .that was an experience. I was the old man on the team. . .so there were a lot of jokes about that.” He continues to demonstrate commitment to the sport by serving as the head high school wrestling coach where he teaches.

Hayden G.’s family travelled extensively in his early years when his parents served as foreign missionaries: “When I was younger, we traveled a lot. . .my parents were missionaries [in the far east]. . .we moved overseas for a couple of years and then we came back to the United States.” Although his parents later divorced, he continued to travel locally with his blended family. As an adult, he experienced world travel once again in the form of military service: “I was in the National Guard, and then when 911 happened, I had to get out of school. . .I traveled the world overseas, a lot in Asia and a lot of the Middle East.”

Hazel F. described a long life of engagement with life on every front. Beginning in childhood in her family’s restaurant interacting with the customers, until most recently learning to fly and owning an airplane, her life has been characterized by purposeful participation.

During her earliest years, she remembered her family’s restaurant being the hub:

My grandfather was a master baker. . .and they were the first people to have homemade ice cream for sale to the public. And people from. . .all around came to their restaurant to eat. . .I played in what we called the Middle Room of the restaurant where the families

would sit and eat. . .I would go up and sit and visit with them until their food came. . .

while I was only maybe two, three years old, I knew everybody.

As she got older, new opportunities to interface with the highest levels of society grew from the family's connections:

I was always a guest at the Ocala boy scout camp. . .one of the leaders that was famous was Harry Truman. Harry and Bess ate at our restaurant a lot, and I would sit and visit with them and when I got older and got married, my husband and I would go. . .visit with them at their home because they were good friends. . .I had the opportunity of knowing a lot of famous people before they had their heyday in politics.

Later as a teenager, her early social experiences launched her into a busy world of extracurricular activities:

I was the type of person that wanted to be involved in everything. . .I was editor of the school newspaper. I was on the yearbook staff. . .I just couldn't do enough when I was in high school. . .I was involved in everything. And when I went away to college, I did the same thing.

As an adult, Hazel F. and her husband raised their family to enjoy adventures in travel. Since they were both schoolteachers, they took advantage of summers off to explore as much of North America as possible in a camper. As their kids got older, they expanded their horizons even further:

We had a good time after they all grew up, then we traveled the world. We went everywhere. Every summer we'd take off and not come back until it was time for school to start. . .we went to Russia, China, Japan, all of Europe, Central America, all the islands

of Hawaii. . .we spent the summer in Alaska, oh, was that wonderful, and we just had a wonderful time traveling, seeing the world.

Even at her advanced age, Hazel F. continues to inspire others to engage with life experiences beyond the routine. After suffering a stroke during her dissertation, she managed to get back on track and complete her degree at the age of 81, beating her son to the punch! She expressed disappointment because “after the stroke, the doctor told me I had to give up a lot of stuff I was involved in.” Especially since, in her dissertation, she studied other individuals who completed a doctoral degree at an advanced age and reported that her participants agreed:

I had only one [participant] that was retired, because they all said they wanted to point out that it was very important that people should not retire—that they should keep doing something, working, doing something—for free, whatever. That in order to extend their life, they would be better off doing something rather than being retired.

In the recent years before her stroke, as testament to her commitment to live fully, she observed an occasion in which her husband said, “‘Well,’ he says, ‘do you think you could fly?’ And I said, ‘Yeah, I think I could fly.’ So we took flying lessons, we bought an airplane, and we flew everywhere.”

In sum, the engagement experiences reported by the participants provided opportunities for growth, expanded perspective, and *new*. Many times, these experiences were intentional, but sometimes outside their control. They were perceived as both positive and negative in their impact, but all supplied circumstances that stretched the participants personally in some way.

Expectations. Early in the interview portion of the study, I identified *expectations* as an emerging theme. For this study, *expectations* are defined as either explicitly stated or implicitly perceived performance standards that the participants were required to meet, primarily in their

growing up years. At times these standards related to school or athletic performance, but other times they centered on ethical or moral behavior. Mostly, these expectations were from others, while in a few cases they were self-originated. Not included in this section are any of the understood expectations that arise when one is involved in organized activities or athletics, nor did I include any discussion of expectations that all participants have met as adults in their school, job, and family roles. Rather, this section relates those expectations that were communicated, mostly early in life, by those people closest in relationship to the participants. A nuanced angle of this category emerged in which many of the participants experienced expectations in the form of others believing in them, oftentimes more so—or in a different way—than they previously believed in themselves.

Holly G. remembered that education was a priority to her parents while she was growing up. The expectations communicated to her were, “Your job is to go to school and do well in school and make sure that you're setting yourself up for that. As long as you do that, we'll make sure that everything else is fine.” These early expectations on Holly G. seemed to build momentum for her that acted as a catapult forward in life to accomplish other things, especially leadership roles.

Hannah G. recalled a certain level of personal freedom growing up, but also a strong emphasis on academic effort and a duty to serve the community. A close family, she remembered: “I think all of my sisters and I really wanted to live up to my parents' expectations and do what they found to be valuable.” As teenagers, she remembered that the sisters’ parents:

Allowed a lot of autonomy and were supportive in terms of not micromanagers of our lives. . . We were kind of on our own. . . [but at the same time] definitely the value of hard work. . . we wouldn't have had to work to support the family, but my parents made us all

get jobs, and we were never allowed to just be a student. . .either be playing a sport or doing a part-time job or both. . .spending our time in pursuit of these things.

Importantly, for Hannah G., emphasis was on effort and not outcome:

They didn't care that much about the actual accomplishments. . .We never had any pressure to get super good grades, or have achievements, or be the best on the team. It was more like you have to be working to be valuable. . .You need to be contributing to anything you think is important. It doesn't have to be really lucrative. They're happy to help us make ends meet. But it was this idea that you need to be spending your time productively working.

However, academically, she knew that there were expectations for her to pursue higher education after high school, “It was always assumed we're all going to college and maybe graduate school.”

Helen F. has vivid memories of early expectations in two arenas: honesty and service to others, which has come in very handy in the nursing profession. One of the highest standards that her parents required was “truth—honesty—because that's how you build trust.” She shared about a time when she was caught lying to her father, whom she adored:

It wasn't that I used the hairspray. He could have cared less. It was because I lied. And that was never something that was accepted, nor did they ever lie to us. And what he said to me that day, “our relationship as father and daughter is built on a lot of trust you see. I love you. . .but you're reaching an age now where I have to be able to trust you in a different way. If you lie to me, then I don't trust you and you lose that.”

The significance of that moment has remained with her since that day. She said, “That really hit me hard. It broke my heart, not that I got a spanking and that I got in trouble, but that I lost my dad's faith in me.”

Helen F. also recalled the sacrificial lifestyle that her parents lived as she was growing up, and she tries to pass those expectations to her children now:

My parents were very big givers. . .and that's something that we've worked. . .hard to teach our children. . .that you give more than just your tithes. God wants your time. . . your attention, and He wants you to give alms.

Recently she was privileged to witness the investment of these teachings come to fruition when her 18 year old son was approached by a peddler asking for money:

He said, “No, I don't have anything.” And then he said, “Mama, that was a lie. I had a \$20 bill in my wallet.” He said, “So I called the man back and I gave him my \$20.” . . . I was so proud of him for giving and being honest. If you don't want to give, just say, “No.” That's okay. But don't lie and say, “I don't have anything.”

As an adult, Helen F. also considers the power of someone seeing her potential to be a milestone in her professional journey:

She sent me a copy of the letter that she sent to [my current institution] and to the hospital here and it said, “I wouldn't be surprised if she ended up running the whole school one day.” And her absolute faith in me rocked my world. . .because I didn't know that she saw me that way.

She further expressed that the “people who have had faith in me—one—I never want to let them down—but two—it's helped me see myself through a different set of eyes and has built me to be able to encourage myself.” These positive expectations of others served as a catalyst for achievement in her new job. Letting other up-and-coming professionals know how special they are is something that she tries to pass on to the students she impacts. She loves when “there's

that student that you are connected to, you're invested in, man, you can really pour out your heart and let people know how wonderful they are.”

Harrison G. recalled very little expectations from his family in terms of his ethical behavior, indicating that he “could stay out all night, could party all night.” At the same time, in all other areas “everything in my life was performance driven. . .my performance made [my family] even more prominent in the community.” Harrison G.’s individual worth during those years was tied directly to achievement in sports. His whole community supported his high school and college basketball career unconditionally, and it was their expectations of his success that compelled him to achieve:

It was. . .like, “Hey, you know, all these people are all for me who can be against me?”

So, I had the community as my mentor. . .because of that, I felt like everybody believed in me . . . whatever you want, I could do no wrong.

The unwavering adulation of his hometown community and their faith in him also continued to drive him when his own strength wavered in college at West Point:

I wanted to make my community proud. It goes back to that. I couldn’t imagine. . .

flunking out or getting thrown out and having to go back and be like, “I didn't make it.”

That wasn't happening. I could not imagine the feeling. I would have to let all those people down.

According to Harrison G., the defining expectation from his early years—hard work—emanated from both his family and his faith community in the Catholic Church. He recalled, “When I went to my dad's office, I remember he would be hard at work.” The ideas of both physical effort toward life’s pursuits, as well as good works to earn favor with God and man were reinforced daily:

The Catholic Church did teach me the values of work ethic. . .and I saw my family work hard. . .I saw my great-grandfather. . .who started the business and I saw my grandfather. . .continue the business and I saw my dad work. They were hard workers.

These early expectations ingrained from an early age have continued to influence him throughout his adult life. He currently works tirelessly to ensure that the K-12 Christian school that he supervises reflects excellence in each of its facets, and attributes his work ethic to his upbringing:

[I was raised with] the value of Church—of going to church—and the value of working hard, which I'm so grateful for today cause I'm a very, I am a hard worker. And those values were instilled at a young age. . .you gotta dig your heels in and work.

For Harry, the expectations he experienced growing up were less about his performance, and more about engagement and academic effort:

Our parents' expectations on us was. . .that we just did stuff. . .There was never any outcome driven expectations. . .we were rewarded, and we were encouraged to do well academically in school and get A's and things like that. . .[but] it wasn't about getting A's, it was about sitting down and studying and working.

Harry was raised to spend his time wisely and encouraged to participate in a variety of experiences, with the underlying message that he will get a return in life based on his own personal investment:

The expectations were that we. . .have to do something. . .we didn't have to play sports, but if we didn't play sports, then we had to learn an instrument. . .if we didn't learn an instrument, then we had to do art. . .if we didn't do art, then we had to do something else. . .There was the expectation that we were engaged and occupied. . .if you want something from the world, then you should engage. . .that spanned interpersonal relationships. . .

work ethic. . .sports. . .there was a value that the world was a reflection of what you put out.

He also recalled that the value of commitment to family was emphasized throughout his life. This became especially significant during his college years when his family of four lost two of its members, and only he and his father remained: “There is the expectation that family always comes before anything else. . .the expectation that you will always give your family the benefit of the doubt. . .you'd always have them in mind or. . .their interests first.”

Heidi G. remembered that “A's were something that were highly encouraged and were. . . rewarded as well.” At the same time, her parents were also “supportive and encouraging,” and “it was more about the progress part of it I think sometimes than the end goal.” Many of the participants expressed that their early influences (primarily parents) operated in an authoritative style, which is defined as demanding, yet supportive (Duckworth, 2016). Heidi G. remembered the level of support she received from her parents: “My parents were setting high expectations, but if something didn't go the way that we wanted, it wasn't like they would get mad. . .both of my parents helped me with my homework.”

Henry G. described the expectations his family had for him to pursue higher education. Although they were limited in financial means, they sacrificed throughout the years that he grew up in order to save enough money to pay for one year of college:

There was just always kind of an assumption that I was going to go to college. . .that was a priority and they saved, I mean, for years and years and years basically to pay for my first year. . .that was all he [dad] could afford.

Because of his family's dedication to his success in college, Henry G. set self-expectations that he would not let them down:

I wanted that for myself, but I also wanted to honor the work that my parents had put in to make that possible for me. . .growing up in a house without a lot of resources, I mean, you never waste anything. . .failing was just not an option.

Even though his family was not religious, Henry G. was influenced by his grandmother to pursue the Christian faith. After he dedicated his life to God, several men of faith mentored him, guiding him to a path of Christian ministry using the spiritual gifts they saw in him:

With my youth pastor, it was more just that kind of affirmation of calling, you know, there was this strong affirmation that you're called to ministry and that was something they invested in frequently, intensely. . .I felt this strong burden on that. . .I want to be faithful to this calling.

Hayden G. was raised in a missionary family during his early years. During that time the expectation was that “we went to church every time the door was open.” After his parents divorced and his mother remarried, the church attendance expectations decreased somewhat, but he has good memories of family life in his new blended family, recalling:

Behave, do our chores, get along with one another. . .do what Christians do, be Christ-like, obey your parents. . .make decent grades in school and get along with your brothers and sisters. . .the 10 commandments and doing what's expected of us as a Christian.

However, these expectations were enforced in a supportive way: “Our parents told us, do good in school, but they weren't really hard on us. Like other parents I've seen.” He also recalled supportive coaches and co-workers along the way who have pushed him to fulfill the potential they saw in him: “My wrestling coach in high school. . .got me into wrestling, and he's still a part of my life now.” Hayden G. testifies to the power of a strong work ethic to push through

hardships in life. His experiences as an accomplished athlete pushed him to value hard work and expect that of himself:

The biggest thing in wrestling in high school and that was being a state champion and I was able to do that just because of my work ethic. . .I'm a self-motivator. Just push, push through it and. . .keep on going forward and not let anything. . .put me down. . .Things of life are not given to you. That's what I tell athletes. . .You gotta work for it. You gotta earn it, you know? That's how I live my life.

Hazel F. has also upheld high self-expectations academically as long as she can remember. At the end of high school, “when I graduated, I was number seven in the class and I thought, ‘Why am I number seven?’” She realized that the valedictorian had taken an easier path course-wise and determined in her heart that college would be a different story: “I made up my mind, ‘By golly, I could be number one.’ So that's what I did when I went to college. I became the Valedictorian.” She continued this streak of high self-expectations even into graduate school: “I graduated Valedictorian with a dual masters—nutrition and dietetics and vocational home economics. Couldn't resist the home economics. I grew up with food and baking everything, so I couldn't resist.” Her doctoral experience could likely have ended the same as well, except she had one teacher who refused to give any “A's”. She concluded, “I didn't get to graduate summa cum laude or magna cum laude or anything because of that ‘B’.”

Although Heather G. stated that her family “lived a very hippy dippy life” and ran a household in which “I was allowed to do whatever I wanted to do,” she remembered: “My parents were the free-range kind of parent[s]. . .so we had freedom to do what we wanted,” she also indicated that academic expectations were high:

Good grades for sure. It was expected that we got at least a bachelor's degree. . .I was slow in getting my Master's, and that kind of made me lesser in my family because everybody else had gone far beyond that. . .so education was valued above all else.

Unlike most of the other participants, whose families were religious, Heather G. shared that:

My parents. . .were atheists, very determined atheists. . .it was almost like anything *but* religion was okay. . .there was Anti-faith in my home. . .I was raised that only crazy people believe in God. . .the word Jesus Christ is a curse word.

She was expected to fall in line with this worldview, but she turned to the Christian faith of her own accord anyway.

Service. Another emergent theme, *service*, was met by either growing up in a household or currently living in one in which the participants or their family members serve or served in the military, the ministry, public service professions, or some combination of these affiliations. All participants ($n = 12$) met *at least* one of the above criteria, while over half of the participants ($n = 8$) met *more than* one. While the number of qualitative codes falling into this category was significantly less than some of the other themes, it can also be considered a demographic which emerged, yet was not anticipated, therefore not asked in the initial survey. Although 8 of the 12 participants met the criteria by serving in higher education—which may be expected for doctoral completers—only 4 of those 8 had higher education as their only criteria. This means that 67% of the total sample qualified for the service criteria outside of their higher education service, making *service* a notable theme to investigate further, especially given the sample size of the study.

Three of the four participants qualifying for the service theme, purely on the basis of their work in higher education, did report values of service instilled in them from early childhood.

Holly G. recalled being brought up by her family at an early age to esteem others: “My parents had this thing about service to others was better than personal gain.” Likewise, Hannah G.’s family values of moral obligation deeply impacted her:

We were also really raised with a lot of core Jewish values. Not like, “you need to believe these certain things about God,” but more like giving back to the community.

The value of Tzedakah is a really important Jewish value.

Heather G. qualified for the service theme in three areas. She shared, “I got my bachelor's degree in nursing and then went right into the Army,” and she now currently serves in higher education in a nursing preparation program:

I work very hard to give an excellent education to my students even if it means late hours and extra work. . .I also take students to Kenya and Nepal every year to do community nursing and to give back to the global community through health care teaching to both patients and the healthcare providers in those countries.

Both Hazel F. and her husband were teachers for almost 30 years, and her husband and son also served in the military. Devoted to the Christian faith, she shared, “I always try to be involved in local, national, and global activities.” Henry G. pursued ministry in the form of Bible college and church planting as an adult, but really discovered his vocational calling in Christian higher education. He has taken several roles in which he has considered it his duty to establish excellence in practices:

I wanted to be a part of the solution. . .this is the banner that I've been waving myself now for a while. . . his region of the country kind of lives under the shadow of this persistent depression. . .they've been in survival mode for so long. They don't know what it necessarily looks like to thrive. . .I, along with a few other key leaders here, have been

leaning on the system pretty heavily, trying to push us toward a higher level of excellence.

Hayden G. spent his early years in a family dedicated to Christian service: “My parents were missionaries to the Philippines.” Now working at the K-12 level, he also served in two separate branches of the military, even leaving college prematurely to serve a deployment duty after 9/11.

Harrison G. currently serves at the K-12 level, devoting his time to administering a large, Christian school. His time at the West Point military academy was followed by a stint of active duty Army service. He attributes his current commitment to public service to the transformation he experienced while serving in Iraq: “Going to Iraq was a challenge that changed me.” In his present lifestyle, he dedicates himself to bettering his school and his church, as well as passing the baton of the value of service to those around him:

We incorporated a community service requirement here at the Academy that they never had had before so that. . .students understand the value of service. . .we've served [human trafficking non-profit organization] for numerous years from folding t-shirts or writing notes. . .professionally it's my leadership style, servant leadership, listening to others.

Helen F. fulfilled the most categories of the service theme. Her parents demonstrated service to others during their time in ministry:

My father and mother were both Christians engaged in church when I was little, so by the time I was born, they were doing children's church leadership. . .they decided when I was three. . .to go to Bible College and my dad wanted to be a pastor.

Additionally, Helen F.'s family has a long history of personal sacrifice in the form of military service. She fondly remembered the following extended family military connections:

My family traces its [military] service to the Revolutionary War (6th Great-grandfather, I think); Brother in Army (101st Airborne), but was discharged due to an injury; Father in Vietnam (Army- 173rd Airborne); Both of my grandfathers fought in WW2 (Army); Great-grandfather in WW1 (Army); One uncle was Navy, and great-uncles in Navy and Army. LOTS of military service!

Helen F. remembered the occasion when she first realized through the inspiration of a high school teacher that any vocation can serve as a pathway to Christian service:

Wow, I can do this. . . I can be a nurse and share God, I can be a teacher and share the Lord. It just dawned on me that life could be missions and ministry oriented versus just being in a church always.

She has dedicated her adult life to serving in the nursing profession, both as a practitioner and a nursing education program leader, as an extension of personal ministry:

We are all interconnected- Especially in a globally-minded world. We interact and impact those around us. We choose if this impact will be positive or negative. A simple smile to a stranger could be exactly what is needed to uplift. . . When I teach a student nurse, I believe I can impact not just the one in front of me, but rather I am impacting the hundreds or thousands that he or she impacts.

Her guiding philosophy most recently is the power of one person to act as an instrument of change.

Having grown up witnessing his father serve in the Department of Defense, Harry, who also serves in higher education, dedicates much of his personal resources outside of work to helping others through community involvement:

I 100% have the belief that the better other people are doing or that improvement in other people's lives or improvement in society as a whole, directly improves my life. . .whether that's a selfish perspective to do things to benefit society or not, I'm not sure. But if I do things to help other people, there's a direct intrinsic sort of meaning for it to me.

Loss. The theme of *loss* is defined for this study as life experiences which resulted in significant personal loss for the participants, usually in the form of deceased close loved ones ($n = 10$), or divorce ($n = 3$)—which precipitated the loss of the original family unit; other participants experienced some other destabilizing loss that impacted them considerably ($n = 5$). Some of the losses occurred during childhood, while others happened later, even during their doctoral programs. The reported losses, highlighted below, were mentioned in response to the interview questions regarding the participants' notable hardships during childhood or adulthood, indicating the poignant nature of these experiences.

Holly G. noted that the hardest parts of her life have included those situations over which she has had no power:

I would say a lot of the stuff I would characterize as the hard stuff would be things that I have no control over. Things like grief and loss. . .My mom lost three of her sisters and one of her brothers. I lost my grandmother in 2016 on my dad's side.

She recalled the impact during her doctoral program when her mom unexpectedly suffered a major health crisis. A series of events, including that one, resulted in a period of time in which Holly G. felt deeply unsettled:

Literally, there was one year where I found out that my mom had a stroke, my husband had a thing. Within three days, five different things happened. I didn't know if I was

going or if I was coming. My grandmother died, something happened with my husband, my mom had a stroke, and it was just like, “Oh my God, what is happening?”

Holly G. remembered leaning into the support of her doctoral cohort during that challenging phase of her life.

Helen F. has experienced several personal losses as a result of the passing of close family members and believes that learning to deal with loss is an integral part of the human experience:

There was a lot of death in my family as a child. . .my grandmother died when I was six. We were very close to her. . .I lost several of my great aunts and uncles. . .we have a very tight knit family. . .my sister asked my mother one time, “Why do we when we go to daddy’s family, we go to houses and family reunions. And when we go to your family, we get the cemetery?” . . .it was just a lot of death. . .[but I believe] how you learn to deal with death as a child helps you learn to deal with loss as an adult, whether that’s a person loss, a loss of a dream, [or] a loss of a goal.

Her most significant loss was the death of her own dad when she was 32 years old. She still misses him profoundly:

The hardest thing of my entire life was the loss of my father. . .I was very much of a daddy’s girl. . .you can get very depressed and mourn for their loss. . .my family. . .mourned our personal loss, but we celebrated the life of these people. . .One of our faculty members lost her father a couple of years ago. I remember sitting with her and saying, “You know what? Celebrate! Tell me the stories. What were the moments of joy?” I think that that’s when we begin to focus on the joy from the Lord that isn’t impacted by our personal circumstances. . .I had such a blessed father and he was so amazing. Because of that, I can celebrate the 32 years I did have with him.

When Harrison G. was young, one of his anchors was his grandmother on his dad's side, who spent time investing in him and who loved him unconditionally—which helped to stabilize him in a world in which his performance in basketball was the primary source of his value. Her passing left a hole in the family unit that never healed:

The family was very tight until 1989 when my grandmother passed away. . .then the family began to split because she was the champion of the family. . .that was the hardest moment of my upbringing, my Grandma's passing and seeing how that separated the family. . .My grandfather got a girlfriend thereafter, and there was a lot of drama with that. . .that was a challenge. I did struggle with that. I struggled with that mentally.

Harry, who grew up in a family of four, shared that he lost two of his immediate family members as a young adult:

When I was a senior in high school, my mother passed away. . .it was actually on my graduation day from high school. . .four years later, when I was a senior in college, my brother passed away. . .[there was] this four year period where it was just really difficult. . .that made my father and I much closer. . .it wasn't just those two events, it was the lingering effects of those events. . .it's hard to explain, but it was just a difficult experience. . .I honestly have no idea what kind of effect that had on the rest of my life.

Henry G. reported that “at several institutions, when it was time to leave it was marked by disappointment,” and he suffered through two major losses professionally in the form of losing positions that he loved due to unjust circumstances:

I was asked to resign. I was on the cabinet, had made a series of really unfortunate miscalculations, and I had been waving the. . .warning flags for the better part of the semester, begging for some help. . .it ultimately culminated in students protesting against

the administration. . .and they just saddled the blame for it squarely on me and offered me up as a sacrificial lamb.

These losses impacted Henry G. so deeply that when asked how he has overcome them, he confessed, “I don’t know if I have yet.”

For Hayden G., whose early years were characterized by serving with his family on the mission field, major unsettling changes in the form of divorce transpired when he was a teenager: “My parents divorced. That was a big, a big deal growing up. . .I was like 14 or 15, and then my mom remarried a couple of years later, so we were considered the Brady bunch.” However, he grew to love his stepfather, but as an adult lost both his stepfather and his brother:

My stepdad passed away. . .he was a big part of my life when my parents divorced. We met him and he was like my father from that time on. . .that was a big loss. I lost my brother last year and he was only 46, so that was a big loss.

Through it all, Hayden G. relied on God, inner strength, and “self-motivation, just telling myself I could do it” to make it through the hardships he has faced.

For Hazel F., the joy and anchor of her childhood was the family restaurant and the lifestyle it afforded her—daily enjoying the company of the customers and the bustling environment with her extended family. The momentous loss occurred when “the day came when my grandmother and grandfather passed away and we closed the restaurant.” Not only was she impacted deeply by the personal loss, especially of her grandfather, whom she was close to: “When he passed away, that was very tragic for me. Very tragic.” But she also experienced the loss of the central focus of their life—the restaurant: “My dad then got into another line of business. He opened his own business. He became a plumber and had his own plumbing shop.” Later, as an adult, Hazel F. also experienced the loss of two of her own children very early in

their lives: “We lost two children, one at a year and a half and one at three months. I had a set of twins, identical twins, and. . .one twin did not survive. After three months he passed away.”

Heather G. shared the grief that she has experienced from her parents’ divorce from one another, as well as several other divorces and loss of spouses:

It was a really bad divorce. . .my parents have been married three times each. . .but going through divorce, after divorce with each of them. . .my mom actually was only divorced once. . .She was widowed twice, which was a whole nother thing. . .Although I was older when she was widowed.

Growing up in an atheist household and now embracing the Christian faith, Heather G. disclosed the heartache she has endured when several of her loved ones have died in recent years:

My mother's actually passed away now. . .she just died eight years ago. . .[when I was] forty something. . .the worst things have been watching people die out of faith. . .two of my brothers were tragically—one was killed in a drunk driving accident and the other one overdose on drugs. . .I [was] never. . .able to get any of them to turn to the Lord in times of trouble.

Personal and academic relationships. Since this study’s theoretical framework centered on the persistence literature of Tinto (1975, 1998), which esteemed the unique value of both academic and personal relationships, it was not surprising to see the emergence of this theme. The participants in this study not only relied on relationships of all kinds—spouses, family members, mentors, faculty, cohorts—during their doctoral completion, but also to get through the challenges of life in general.

Holly G. counted it as one of her greatest strengths to be able to locate and lean on a support system wherever she goes and attributes her completion to “a strong support system”:

Always being able to find my tribe, that helped me because I was able to find seven other women who were in my program and we call ourselves the Crazy Eights. . . We were able to support each other. . . that's the good thing is just finding my people.

She shared the significance in her life of leaning on relationships for support:

If I'm always there to support other people and they're always there to support me, then the things that happen in life are—joy is double the joy and all the hard stuff, it's like half the hard stuff.

This was especially true during her program when her own life got tough when she got the news about her mom's stroke while in class: "Sometimes it's hard when you're a strong person to let people help you, but it was good for me, because I realized I help all of these people too." It was her doctoral cohort support that she leaned on heavily when her personal support system faltered:

When I got there, I found my crazy eights. There are certain things that go on in a doctoral program that only the other people that are in it with you can understand. . . when it came time to start doing the defenses and the dissertations and the proposal, and the methodology, having someone that was just a little bit ahead of me and then somebody that was a little bit behind me so that the girl that was right in front of me, she was like, "This is what happened in my defense." And then after mine, I was telling the girl right behind me, "This is what happened in mine." It really was a team effort.

For Helen F., the significance of relationships lies in their power to influence. From her early years, she recalled the meaning of her grandfather's faith in her: "In his eyes, I could walk on water, and that was important to me." Even now, her own husband's belief in her influences her to push forward through difficulties:

I can't do any wrong in his eyes. . .He is my encourager, my supporter, the first one to tell me to put it down, you have to take a break, as well as the first one to tell me to pick it up and have fun. . .I remember having a complete meltdown in December one year. . .I had spent so many hours and I was utterly exhausted, and I remember just bawling, and I'm not a big crier. . .So just having someone push a little harder. . .I needed that encouragement at that time, and nine months later, 10 months later, I was done.

Early faculty members in her undergraduate program held sway in the path that she chose professionally: "She instilled in me a love for cardiac. I became a cardiac ICU nurse because of her." As she moved forward into higher education, other mentors stepped up and surprised her with their glowing support in the form of recommendations. Throughout her program and in her current role as the head of a nursing program, she said that relationships make all the difference:

We have some phenomenal faculty who just have become friends. . .[my chair] was giving me such positive reinforcement. . .It really built me and encouraged me. . .it's having the opportunity to be mentored by someone who's your age even or maybe even younger, but who have a wealth of knowledge and are willing to share it.

She is proud to work at an institution that values people and relationship above personal glory or success:

I've worked with other institutions and it was eat or be eaten. . .if you're going to stay on top, you're going to push everybody else down. Whereas I really feel the program I went to here at [institution] in the nursing school is you give the next generation a hand up. You move to where you pull up to the top of that mountain versus standing there with a sword and chopping them down.

Hester G. so appreciates the support she has received that she tries to pass that support on to other women coming along in their program:

A friend posted on social media she was done with trying to finish her doctoral degree. She quit! I told her I needed to see her proposal and we scheduled a time to talk. She was discouraged by the feedback from her committee and cried herself to sleep. But, the next day, she woke up and realized she was too far in to stop! She just felt alone in the process. That happens with online doctoral degree programs. So, she is pushing forward.

Harrison G. described the unusual circumstances of the support and protection of the entire community he received when he was growing up as the town basketball star:

You just didn't mess with [my] family. . .and if I would've been wrong, my family would have defended me even if I was wrong. . .my high school principal. . .who I spoke at his funeral was someone who I knew was a blanket of protection when I screwed up. I remember going to his office and he would just say, "Hey, let's have some coffee" . . . There was just support, which I don't think that's a bad thing. . .very encouraging atmosphere all the way around.

The one constant relationship in his early life that was authentic and not based on his athletic performance, the one with his grandmother, brought him great peace:

[She] loved me for who I was and not what I did. And that was genuine. . .she picked me up in [her car] with the white leather seats and the Kenny Rogers eight track tape. And we would just ride around and have lunch and it was. . .It was just not even a lot of conversation, just playing cards and Kings on the Corner and just spending time—intimate time. . .I would stop by every day after school when I could and just spend time with her.

Harrison G. attributes his doctoral completion solely to the support of his dissertation chair:

“It was all about the chair. . .it was purely her encouragement in my life her constant prodding, her “Get your butt in gear,” it was all of that.”

After spending his early years traveling the world with his dad’s government job, Harry remembered settling near family:

The one constant has always been family. . .my father's side of the family lived in the same town. And so, we had a large extended family that all lived really close, like literally down the street in the same area. . .we always had a fairly close family relationship.

During his time in graduate school, the value of the relationships he formed with his cohort was crucial to his persistence in the program:

The most meaningful thing of my entire graduate school experience was the close relationships that I developed with friends of mine in the cohort that I had. . .they're like best friends, and those relationships were what helped me continue on. . .we pushed each other and we were there for each other.

Then, professionally, opportunities came from networking with people who supported him:

It was absolutely because of other people providing support that have allowed me to do that. . .people were helping me along the way, kind of fostering that and being available and giving those opportunities. . .I know that, that grit is all about internal qualities, but every time I think about this, I think about the opportunities that I have and the qualities of the things that surround me that are external, like interpersonal relationships that I have that helped [me] push through.

Hazel F. relishes her memories of her close-knit family as a child, especially with her grandfather:

I thought the world of my grandfather. . .my grandfather was. . .the love of my life.

Whenever he sat down, I was on his lap, and. . .he'd have a cup of coffee with bread and butter and he'd dip it in the coffee and he and I shared a slice of bread with bread and butter.

Hazel F. credits her professors and her chair with offering her the support she needed to finish her doctoral degree:

All the professors I had were super. . .just absolutely wonderful. I cannot think of a bad professor that I had except the one that wouldn't give A's. . .when we had graduation. . .he was in the back of the room waiting for me, and when he saw me in the room, he came over and gave me a big hug and was so glad to see me. . .[My chair was super supportive], so that's why I credit her. She's my angel.

Sub-Question 2: What values and beliefs influence the development of grit in doctoral completers? The participants shared their values and beliefs, some dating back to childhood, which may explain the development of long-term passion and perseverance. The following sections describe the themes of *passion* and religious *faith*, which were identified as common threads within these beliefs and values. Included in this section are two unexpected themes of personal characteristics, *shame resilience* and *flexibility*, that may also interact with grit to impact doctoral persistence.

Faith. Most of the interviewed participants ($n = 10$) revealed that they either had a long history dating back to childhood in which they practiced a certain religious *faith*, or that, although they did not grow up following any faith, they have now embraced one as adults.

Hester G. subscribes to the beliefs of Jehovah's Witnesses, Hannah G. still follows the Jewish practices of her youth, and the other eight participants subscribe to the Christian faith. Not all participants ($n = 2$) practice religious faith. One participant, Heidi G., was raised in a religious family but does not currently practice, and only one participant, Harry, was neither raised religious, nor does he currently practice a religious faith.

Holly G. was sent to Catholic schools growing up even though her parents did not engage with the faith at the time:

I did go to Catholic schools, but my family. . .didn't do the whole religion thing with me growing up. I recently did that for myself. I grew up. . .with Christian beliefs, but I didn't do all of the going to church every Sunday. That wasn't a part of my childhood. . . [but] now I'm an adult, and I'm seeking that and I enjoy that and I find something in that for me.

She now relies heavily upon her Catholic faith in her approach to life's blessings and challenges:

I've learned that and I guess this one's going to go back to faith. I think I've learned that everything that's happening is okay. And that you're going to have everything that you need to be okay. . .and it keeps me from getting too, like raggedy. . .I can trust that everything is going to be okay. . .because I trust. . .God, or I trust a higher power or the universe or Jesus.

Hannah G. was raised in a dual-faith home—Catholic and Jewish—but more strongly identifies with her Jewish roots as an adult:

We were raised Jewish because my father is Jewish, and my mother's Catholic, so we had a lot of religion in our lives growing up. . .but we were also really raised with a lot of core Jewish values. . .Not like, "you need to believe these certain things about God," but

more like giving back to the community. The value of Tsedakah is a really important Jewish value.

Because of her early influences by the Jewish faith, she has now embraced the foundational principles of its values:

I feel more strongly that my Jewish faith is part of who I am. . .but it's very okay to question, think about your faith, and stay connected to it in whatever way works for you and still identify with it.

Helen F. has been steeped in the Christian faith from birth, as her family served in the ministry while she was growing up. She has continued to hold the faith as central to her own identity as an adult:

From the early life I was raised in the church and raised with faith in God. . .my father only saw the glass as being completely full if there was a drop of water in it. Everything was positive and, and God could take care of it. . .there was never a question of his faith in God.

She recalled a specific moment in high school when her English teacher incorporated Scripture memory into class, and this fascinated Helen F.:

We would read fiction and speak to how that speaks to human life and the way that we deal with things. We read mythology and it speaks to human nature and. . .that has always stuck with me, and this is from a biblical world view perspective, we memorized Luke chapter two in a public school setting and we memorized multiple Psalms and proverbs, and were tested on them. . .I remember at that moment it dawned on me that my biblical worldview. . .would be shown in how I acted and the things that I did. Even if I worked in a secular environment like she did, I was still able to bring forth my value

system in a way that she did, hers was through literature. . .It had been the first time that I connected school with God. . . [I had thought that] if you were in the ministry, you had to be a preacher or a missionary or an evangelist.

Helen F. currently lives out her Christian beliefs by shining the love of God in all of her actions as a leader in Nursing Education, which she believes is her ministry calling.

Hester G. was raised Catholic as a young child until her mother converted to Jehovah's Witness. Since that time, Hester G. has faithfully followed the Jehovah's Witness teachings even until now:

Faith has been important to me now. . .I'm very grounded in my faith, having been brought up as one of Jehovah's Witnesses, that is who I am. Those doctrines are still a part of me. . .I believe in what they taught us and that's what I try to teach my daughter. And I believe that everything happens the way it's supposed to happen.

These beliefs help her cope with difficulties by enabling her to trust in God's plan when she experiences setbacks.

Although Harrison G. was raised in a Catholic family, the beliefs did not take root in his heart until he was activated in the military in Iraq as a young man:

I think that God had his hand upon me all through my life. . .[but I ended up] really dedicating my life to Christ in [19]98 fully. . .[which] was the turning point in my life. . . that rededication came and you know, crazy things happen when you realize that bullets are gonna be flying by your head soon. . .You better get yourself straight. That rededication was a huge change—turning point—in my life to being who I said I am and living a life that would be honoring to Christ.

As he pursued a career in education, he continued to follow what he believes is a call of God on his life to serve the next generation: “Because I was so dedicated to Christ and what Christ was leading me. . . God moved pretty quick in my life once I was completely dedicated to what he, I thought his calling was.” His commitment to that call continues to drive him as he serves as a leader in a large Christian K-12 school.

Raised in a Christian missionary family during his younger years, Hayden G. grew up being involved in many “church outlets. . . youth ministries. . . [and] youth camps.” He said that now, he and his wife practice the Christian faith and live their lives according to biblical values, which he believes brings about God’s favor:

I think we just morally live the way God wants us to live, do the right thing. I think with that, you get blessed. . . I think that a lot of the reasons why I've been able to do things I do, has been just because of the way I live, and God blesses me and my wife and other people I'm around just because of the way we live and how we treat other people.

When asked what most helped him finish the doctoral degree, he attributed his ability to complete to God.

Although firm atheists raised Heather G., she found faith in the Christian religion as a young adult:

I didn't really even understand what Christianity was, honestly until I was about 16 or 17 years old. And even then, it was just what I was sort of trying to figure out on my own, which was—do you ever pick up the Bible and start reading? Genesis is really not a good place to start. And that's what I kept doing. Cause I would get to Leviticus, it'd be like, ah, this is terrible, you know, and put it down for another two years and try again.

Now, she and her husband practice the Christian faith together: “God's always been the center of it. . .we've been very strong believers working in the church.”

Passion. The only other theme emerging in the category of values and beliefs outside of religious faith was a personal *passion* for the participants’ areas of study or learning in general. This passion seemed to act as a guiding force in the participants’ lives toward professional pursuits that bring personal satisfaction and internal rewards.

Hanna G. repeatedly reiterated, “I just really love to learn.” Her passion for learning in general became more focused as she moved into graduate school and reveals her enjoyment of engaging with academic challenges:

I would say I'm a really, really good student and it grows out of a true love of learning. . . I've always really liked school and less about the particular subject that I study, and more about can I overcome this challenge and why is this field considered to be hard and can I do it? Sort of like pushing myself to achieve just to see if I can, but then also I find all the different subjects to be interesting for all different reasons. . .And when I got through college that changed a little bit because you start to specialize a little more and figure out what you really like. . .I discovered my whole life's work. . .I . . .started studying psychology, and it's so engaging and it's so interesting and really I'm starting to discover my passion for education, which I had also never studied.

In her current post-doctoral role, she has experienced various challenges, but also enjoyment in that “the thing that kept propelling me was me really wanting to study this topic. . .It's about finding something that is self-satisfying and not giving up on chances to do that even if it means working hard.”

A sub-theme in this category emerged, love of reading, which was communicated by Helen F., as well as several others: “[My AP English teacher] instilled in me such a love of reading.” She also has passed this passion on to her children:

I think learning is so important. I love the fact that my kids have always seen me as a student. . .life is about learning and you don't stop learning ever. And so, we're always reading new books together and having conversations.

Harry expressed the same sentiment: “I somehow enjoyed reading and studying and being academic,” as well as Heidi G.: “I liked it much more because I could write stories and I could read and explore and do a lot of different things.”

Harry, the only participant with no religious background, articulated the role of passion as a motivating force in his life:

Graduate school was quite difficult and challenging and a lot of work, but at the same time, every day I got to do something that I wanted to do that is totally chosen. . . everything that I want to do, I get to do. I feel really super fortunate. . .You're asking about grit and it's continuing and persevering, but it's easy to have grit when you're doing things that are meaningful and enjoyable and valued that you like to do. It's easy to persist in those types of things, at least for me. . .it is harder to persist and engage in a distressing thing.

Psychological flexibility. An unexpected finding from the data, indicators that doctoral completers exhibit a high level of *psychological flexibility*, evolved both from explicit statements, as well as implicit assumptions made by the interviewed participants. Psychological flexibility, defined as the “ability to respond to environmental demands appropriately, with goal-directed action” (Ciarrochi & Heaven, 2012, p. 1054), includes “awareness of the present

moment (mindfulness), adaptation to situational demands, and the ability to shift perspective, balance competing needs, and change or maintain behavior to pursue valued ends” (p. 1053).

The experiences the participants had with unexpected circumstances and their own ability to shift gears to meet the changing demands, demonstrated the presence of flexibility.

Hester G., when faced with adversity, advises her students “we have to find a way to adjust and make it palatable so that we can move forward in our lives.” Likewise, Henry G. contended, “there's a lot of things that will knock you off your path or doesn't work out the way that you—especially with your research—that you had [hoped]. You just gotta figure out a way to make it happen.” Harry, whose background in psychology was evident, communicated the concept best:

Moving towards things that I care about, but then trying to be content with the way things are—in order to have both of those notions at the same time, I think that that requires a flexibility rather than a rigidity. . .if you're moving towards something, then you're not content with the way things are. And if you're content with the way things are, then you're not moving towards things. If you think of that through a really rigid, rules-based approach, then you can't have both. But there's no reason why you can't, because if you're flexible enough, then you can totally continue to work towards things that you care about and be totally happy about the way things are.

In terms of doctoral programs or other meaningful goals, Harry related flexibility to grit:

I know lots of people who have a lot of grit. These people tend to be those who are most flexible with changing circumstances. These folks certainly have disappointments and setbacks, but rarely seem to be overwhelmed or stalled in moving toward things they value and find meaningful.

Shame resilience. Another personal characteristic uncovered through the data analysis, *shame resilience* (Brown, 2006), manifests as the participants' ability to move through setbacks and personal failures without letting their mistakes cripple their ability to persevere. Brown (2012) defined shame resilience in general in terms of personal connection and vulnerability:

The power that connection holds in our lives was confirmed when the main concern about connection emerged as the fear of disconnection; the fear that something we've done or failed to do, something about who we are or where we come from, has made us unlovable and unworthy of connection. I learned that we resolve this concern by understanding our vulnerabilities and cultivating empathy, courage, and compassion – what I call “shame resilience”. (p. 253)

Doctoral students may experience shame in an academic setting for the very first time because of the vulnerability necessary at this level of scholarship. During the coursework, students must begin to interact with their peers in an advanced academic setting—revealing their abilities or lack of abilities on the course discussion boards or in other group assignment contexts. Once the dissertation phase commences, doctoral candidates must begin to face the very public nature of their finished work. Being evaluated by committee members, dissertation chairs, research specialists, and the wider research community requires a deep vulnerability regarding quality of writing, academic integrity, and the value of the research (and by extension, the researcher) [Memo 11]. The participants in this study demonstrated shame resilience by indicating their ability to move forward through academic and personal failures—separating these shortcomings from their own personal identity.

Holly G. demonstrated a shame resilient mindset through knowing and accepting herself, both the good and the bad—owning mistakes, but not wallowing in them [Memo 12]:

I would say having a strong understanding of who I am. I tell myself and I'll tell [other] people this too. I'll just say, "I have to be myself." I don't know how to be any other way. Having a strong sense of who I am as a person, which includes my shining characteristics, but also my flaws as well. Being able to love myself for all of who I am and accept myself for all of who I am, and to know myself for all of who I am. So that way when I come to a fork in the road, I know which way I need to go. And even if I make a mistake, I know that I made the mistake honestly.

During her doctoral program, shame resilience came into play when certain mistakes were made along the way:

I always attempted to acknowledge my own errors during my doctoral studies. At times I can internally "beat myself up" about making errors. But I always reminded myself that if the process was easy, then everyone would get a doctoral degree. Externally, I would ask questions to clarify why I made the error and work with my instructor or advisor to eliminate the error in the future.

Hannah G.'s shame resilience seems to have evolved over time as she has pursued advanced degrees:

I'm really sensitive to potential slights or criticisms, and I have to really use skills so that I don't let them make me panic essentially. . .I've really come to understand myself, I'm like, these things don't really affect me in a really negative way anymore. . .We grew up in a world where we were told you should always be really successful. But the reality is people who are successful actually are better at overcoming the barriers that they received and because they can think about them more adaptively, they can understand them as just temporary barriers.

Her own studies about self-regulation have reinforced her ability to cope with setbacks and move forward: “Kind of knowing when you need to regulate away from feeling this way. And then also [taking] my own advice—just things get better.” She also tries to pass this mindset on to others who may struggle, and tells them:

When you experience challenges, they aren't always as horrible as you think they're going to be. They get less salient over time, and it's really normal to experience challenges and to be upset by them. . .I know that this is horrible. This feels horrible, and it's okay to be upset, and you should let yourself be upset. It's common. It's normal. Accept it. . .but this doesn't last forever. All you can do is keep going. I swear it's not going to be like this every day, and you just sort of keep going and it's not going to seem this bad even in one day from now.

Helen F. credits her Christian faith and the grace she has received from others for her ability to forgive herself for mistakes and move forward:

Daddy instilled in me a great sense. . .of my own self-worth. . .I'm not afraid to make a mistake as long as I'm willing to learn from it. And there've been times I've done things and looked back and thought, “What was I thinking, why the world would I have done that?” But I look back and say, “It's okay. It was a mistake, but I learned, and so if I learn, then it's not a real bad mistake.” I can always pick back up and keep going.

In fact, this characteristic has become one of the hallmarks of her personality:

[I always say], “Well, brush off the dirt and get on up. Let's go.” And that's kind of how I feel life should be looked at. . .[My daughter] broke her arm and I said, “Well, rub some dirt on it and it'll be fine,” You know? And you just keep going. Yes, it hurts. Yes, it's miserable. Yes, it's not fun, but okay. Did you expect it to be fun? No. Okay. We can

move on then. [My daughter's] always laughing at me [because], "Suck it up, Buttercup," is kind of what I'm saying.

The grace Helen F. received in nursing school from a professor, when she had one bad day of performance due to a broken engagement, has remained a part of her own philosophy of helping others who are struggling:

[My instructor] said, "Life happens, and you can't give up your dreams for one small moment." And she said, "Now, go wash your face and get to work." I always wanted to be like her, I guess in the fact that: one, she was invested in me as a person, not in what I could do for her, not what I could do as a student and not what her goals were for my life . . . [and two, she] had the grace and mercy to realize I was going to be a good nurse. I had a bad day and that you can't make decisions based on something that is abnormal. . . now that I work with students all the time, it's easy for me to say, "it's okay, it's a bad week. Let's just regroup and let's retry this again next week."

As a leader, Helen F. recognizes that she is held to an even higher standard, yet mistakes are inevitable and must be dealt with appropriately:

I feel it is important to acknowledge my actions/words without excuse. Sometimes we act rashly without [thinking] and acknowledging how that rash decision impacted others allows me to take responsibility and correct their perception. Then I am more attentive to ensure it does not happen again to that person or others. . . Usually I just realize that we all make errors and give myself grace. But I also quickly determine how I can correct the error and not make the same mistake a second time. I learn quickly and strive to improve constantly. I do not dwell on mistakes or think mistakes reflect my intent, intelligence, or abilities.

For Harrison G., the adulation he received for his basketball performance growing up, combined with the unconditional love of God he discovered later in life through his Christian faith, developed a desire in him to love others (especially his own daughter) based on their innate worth:

I ask [my daughter] this question every day and the question is, “Do you know why I love you so much?” That's my question. And the answer that she gives is, “Because I'm your daughter.” So, we reinforce. Because I know the damage it can do, I know the damage it did to my life, that my love for you is not conditional. . .there's conditional love and that's how I was raised. . .[We tell our daughter], “we love you because you're our daughter and you can be. . .a drug addict, you can be an alcoholic. You can be a liar and a cheat, and we will not like your actions. And we will talk to you about those actions, but it will not stop us from loving you.”

Harrison G. was the only participant to specifically discuss shame prior to it being identified as a theme. Although educated at West Point Military Academy for his undergraduate degree, regarding not having a doctoral degree, he shared:

I felt shame because I didn't have it. . .So, I got my masters here and they hired me. . .so now I get the job, and I'm around people that have terminal degrees, and I don't have one. So now it goes back to my childhood. . .I'm feeling like I'm less. . .And this is something that it was hard for me. I felt like I was less because when I went to these conventions and I went to all these things while I was representing our school, I didn't have doctor on my name tag, but the people to my left and right did. . .I felt like I was less, I have less credibility. . .This is about credibility in my profession. . .I felt shame, but I also didn't know if I could do it because of the time constraints.

His response to this shame was not to retreat, but to face the shame and pursue the degree.

When he encountered setbacks during the program, he credits the gentle nature of his chair for his resolve to continue:

I would say that any, any setback was a barrier to getting done. And I so badly wanted to be done that I just hoped that there was no nothing to fix. . .there were times where I did not want to go and work on it because there were things to be fixed. I just didn't have the strength that day to go upstairs in that room and work on it. I also think there's a lot to though, the way it's fixed, and my chair was marvelous in how she corrected and got me back on track on things. It was never ever demeaning or shaming. So, I don't really identify with that in some capacity because I was never shamed for something that I didn't understand or some writing that didn't make sense or was off. I was corrected gently, and I'm just telling you, that may have been the reason I got done, cause if I had a male who just was shaming me, I don't know that I would have responded as positively as I did.

Harry has studied shame in his doctoral/counseling program and profession and shared how he has dealt with feelings of shame in the past:

All emotional experiences are valid and have very beneficial action urges associated with them. If I feel anxious, and I avoid, that might be beneficial. And yet all of them can sometimes be problematic too. The unique emotion to humans that's different than all of those is shame. We seem to be the only ones that experience shame. And for that reason, there is almost never, if not truly, never a time when acting on shame is beneficial. . .for that reason, the experience of shame, at least for me, always implies that I need to do the opposite thing that shame pushes me to do. If you were to experience shame as a result

of a mistake. . . shame typically pushes you to shut down, to avoid, to try to manage that in some way that usually is problematic. For me, if I experience those things, like maybe I don't belong, maybe I've done something incorrect, then I actively attempt to do the exact opposite of what that shame is pushing me to do. Maybe I experience an experience of shame or anxiety when presenting, when seeing patients, when talking about myself personally, when I'm doing something that might be somewhat a little bit embarrassing. . . if shame pushes me to not do that or to suppress or to avoid, then my active attempt is to do that thing, whatever it is, the opposite of whatever that's pushing me to do.

When asked if he has experienced shame in his doctoral program related to failure, he responded:

All of the time! Anytime you're talking about specifically presenting original research doing something in front of people who are well established in whatever field it is, there's a feeling that you're inadequate, there's a feeling that you are not up to whatever level is expected. And the emotional urge is to shut down, to avoid, to cower or to back down, to agree with that experience. I think that even if it's terrifying, even if it's full of those sort of additional shame experiences pushing you to do those things, [you should face it], and then of course afterwards, you usually feel much better.

Both Henry G. and Hezekiah G. mentioned the phenomena of “imposter syndrome” in relation to their doctoral studies. Henry G. mused:

Throughout my doctoral program, I felt that feeling of. . . we call it “imposter syndrome,” not knowing if I was gonna be good enough. I knew I would make it through coursework and through comps. But I thought the dissertation would be when I was exposed as

somebody who's not really as smart as they appear. I was anxious the entire time going through my doctoral journey, that that's where I was going to stall out.

He attributed his ability to push past the fear and successfully complete to his faith in God:

“I don't know if the Lord will give me the strength or equip me for it, or how much of this I'm on my own, but I'm going to place my trust in him and. . .keep pushing.”

Sub-Question 3: What is the relationship between grit and growth mindset in students who persist to doctoral completion? Although not correlational research, this study examined the relationship between grit and growth mindset using both quantitative and qualitative methods. The data from the instruments, the interviews, and reflective journals indicates that these two constructs may be closely *intertwining*. Additionally, the qualitative data reveals the participants' explicit beliefs that they are connected, or have a *perceived relationship*, even in the rare cases in which the quantitative data told a different story.

Intertwining constructs. Fifty-one doctoral completers submitted the survey, which contained both the Short Grit Scale (Duckworth & Quinn, 2009) and Dweck's Mindset Instrument (De Castella & Byrne, 2015). None of the survey participants scored below 3 on the “lower grit” end of the 5-point Grit scale. Therefore, no interview participants were given a pseudonym beginning with *L*, and sub-groups could not be compared. Consequently, all 12 interview participants scored as having higher grit, and were given a first name pseudonym beginning with *H*. Only one survey participant scored exactly 3 on the Grit Scale and was not eligible to interview.

On Dweck's Mindset Instrument (De Castella & Byrne, 2015), which consisted of four items pertaining to the participants' implicit theories of intelligence and four items relating to personality, six survey participants out of the 51 (11.8 %) scored as having a more fixed overall

mindset, while only five survey participants (9.8 %) scored as having a more fixed mindset on the personality subset (scoring below 3). Additionally, three survey participants (5.9 %) scored exactly 3 on both the overall and personality subset questions, classifying them as having neither a growth, nor a fixed mindset. Therefore, in keeping with the representation of the larger sample, two participants with a fixed mindset and one participant who scored as neither were selected to interview, along with nine survey participants who subscribe to a growth mindset, for a total of twelve ($n = 12$). Pseudonyms, in the form of last name initials, were assigned based on each individual's overall Mindset score, however the personality subset scores are shared in the tables of averages below, as well as in the detailed individual score report in Appendix M as a point of interest.

Figures 4 and 5 below compare the average Grit scores and Mindset scores of the participants according to overall Mindset score, as well as just the personality subset. Note that the scores converged in the larger sample in both cases, especially in the personality inventory. This data suggests an inherent link between the constructs of grit and growth mindset, which the qualitative data seems to also confirm.



Figure 4. Grit and growth mindset (overall) of participants.

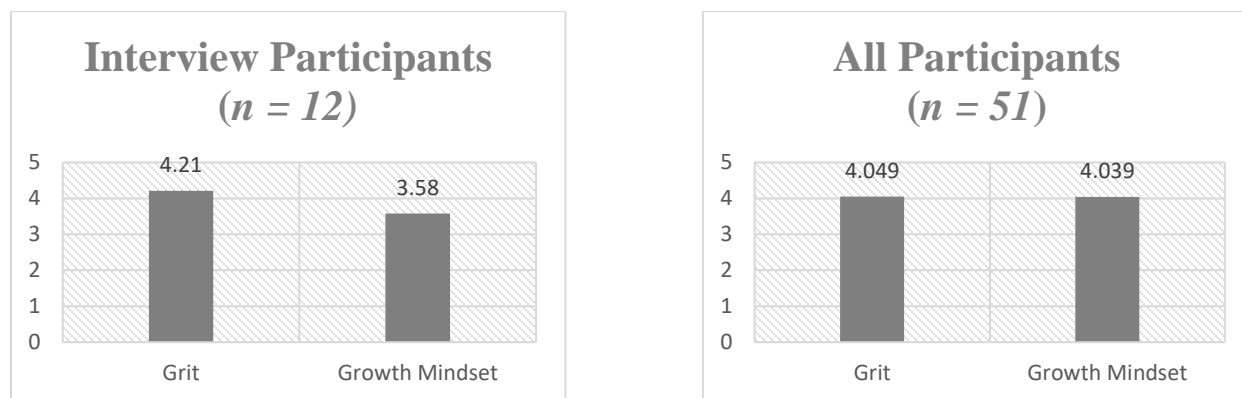


Figure 5. Grit and growth mindset (personality) of participants.

Perceived relationship. The interview participants were asked about their knowledge of grit and growth mindset theories, as well as their perceptions about the potential relationship between the two constructs. The consensus that these two characteristics are interrelated dominated the data. Some participants explicitly stated that they are related, while others simply demonstrated the presence of both qualities.

Holly G., for example, demonstrated her belief in the potential for growing personal qualities by describing the impact her doctoral program had on her:

My doctoral journey was awesome. It transformed me as a person. I am a different person at the end of that process than I was at the beginning. . . I am more clear on who I am and what's important to me. I am more sure of where I want to go and who I want to be. It was awesome. And by awesome, I don't mean easy, but the experience was a great process for me.

She also spoke directly to the mindset of developing grit, theorizing about how to do so:

I do think that grit can be developed. I am sure that there are experiences that can happen in life which would cause some people to develop grit or to increase their levels of grit. I think that it can occur naturally through tough life experiences. But maybe it can also be

developed through coaching—maybe coaching someone through a tough life experience?

I am not sure that one can go through a grit curriculum or class.

Hannah G. also recalled times in her life in which she saw evidence of personal growth:

“Positive shaping experience were things where I challenged myself and succeeded and I'll look back on those times as like you can be proud of that and you can actually shape yourself to do the things that you want.” A specific example from her younger years was when she took AP classes in high school and remembered: “Not being sure if I would be able to [succeed]. I hadn't really been academically challenged at all since I went to that other school in seventh grade. It was interesting to try that and succeed.” She saw her own efforts pay off during this time with sports as well, even though she was not an athletic person:

Making the soccer team was a big accomplishment because I really worked all summer training and training to make the team. I really wasn't sure if I'd be able to. I guess those kinds of things seem somewhat formative, like really challenging myself and then succeeding.

Now after studying many of these constructs through her own research, she concluded:

I do believe that everything can change. . . I used to see things really fixed and those changes coincided with each other. As I started learning more about the work that I do, I started internalizing that idea more with respect to my personal life, which was interesting.

Helen F. has seen changes in her own personality over the years as a leader. Once very task-oriented, she intentionally worked to become more people-centered and is proud of the transformation she has experienced:

I was really young, very talented, driven. . .and it was all about tasks and it was not relational. . .I had always thought I was a people person, but when you looked at what my focus was always on—the tasks of life. . .so, I did a lot of work as a leader. . .and people that work for me now will say, “You are such a relational person, you're so very engaged.” I'm texting one of our faculty—her husband's in the OR this morning, and we've been texting back and forth as we checked in on him. . .and it started when people would walk in my office, I would close my computer down so that I could focus on them and not be listening to the email dinging constantly. . .so I think I've gotten much better. . .the tasks matter, but the people matter more. . .It's got to be about the people who are doing the checklist.

Helen F., although quantitatively classified as having a fixed mindset, seemed to truly believe that growth of personal characteristics is possible:

I have read literature as to how grit or resilience impacts bedside nurses. I believe it is paramount for individuals to build a full set of skills to manage through life stressors. This can come from a variety of learning moments: watching a role-model and how they manage stressors, experience, faith or confidence in oneself, reflecting on situations. All of this to say, yes it can be developed, though I do think that most people have a level to start with. . .I think that we can learn from watching others overcome challenges nearly as much as living through a challenge. Whether it is a doctoral program or a life altering situation, we can overcome by what we have learned as much as how we view things.

Harry, whose instrument scores indicated that he subscribes neither to a growth nor fixed mindset, testified to the change he has made in his own mindset over the years:

At some point there was a shift in. . .my focus away from the outcomes-based achievements to more of a values-based living and doing things that are more meaningful to me. . .I think that maybe earlier on I was more driven by external motivations—that this looks good on a resume’ and I have all these publications. . .and then later on, it kind of changed to more of an intrinsic thing. Like what do I actually care about?

He also shared his perceptions about growing grit, revealing that the quantitative data can leave out the nuances of personal beliefs:

I think there is some level of inherited quality to both grit and growth mindset but I also think it can be developed through learning, practice, and skill development. . .I think these are all very related and intertwined concepts, rather than insular, independent constructs. Without a pursuit of meaning and value (I think that's what is meant by growth mindset) and the persistence of that pursuit (i.e., grit), obtaining a doctorate degree would be very difficult and limited in meaning.

Heather G. stated her belief in growing grit through outside influences as well:

I think it may have to do with upbringing. When you are encouraged to keep doing things even if it promises not to come out the way you want. Being encouraged for sticking things out instead of only for the outcome. . .I think that grit is more something that comes from our earlier development, whereas a growth mindset allows us to understand that we are never done developing and putting those together gives you the determination to complete tasks such as a doctoral degree.

Central research question: Core category—Personal and social responsibility. Very early in the memoing process, I began to recognize a central theme emanating from the data. In the beginning, I termed the theme, *Facing it*. The interview participants seemed to be

characterized by a determination to confront difficulties head on, taking complete responsibility for doing so. I wrote:

FACING IT: Holly G. said that what she passes on to others is, “You’re OK. And you have everything you need to be ok.” I have reflected on this statement frequently throughout the last month. Holly G. believes that there is something internal that people can lay hold of which causes them. . .to persist through hardship. I recently heard the world’s premier clinical psychologist and best-selling author, Dr. Jordan B. Peterson. . . [talk] about how people face life’s challenges and he said, “You have an unavoidable mortal burden to bear in life. There’s no escape from it, except to directly confront it and to take it on voluntarily and what’s so fascinating about that—two things—one is psychotherapists of every stripe understand that this is one of the primary reasons that psychotherapy works. There is no dispute about that among all of the different psychotherapeutic schools—is that the confrontation of existential problems—voluntary confrontation—is curative. . .and the practical aspect of that is quite straightforward. . .it also indicates to you that there is far more to you than you think because it turns out that you have substantial problems—genuine, deep problems of malevolence and suffering, but that if you decide that you will take that on as *your responsibility* [emphasis added], that you *can* put yourself together psychologically. . .then you can actually solve the problems” (http://media2.liberty.edu/mediaplayer/1211/full?_ga=2.224732890.1766969491.1575259432-918372187.1545232684)

As I examined the data and the literature, making constant comparisons between both the explicit and implicit messages of the participants and various self-regulatory concepts already being studied, I discovered a domain of learning which the American Association of Colleges and

Universities (AAC&U) has labeled *Personal and Social Responsibility* (PSR) and identified as an essential learning outcome of a liberal arts education (2010). Since all of the participants expressed through both words and reported actions an overwhelming level of personal responsibility toward self, others, and society in general, this domain of learning became the central category.

Background. The AAC&U began a nationwide initiative in 2005, which identified PSR as the third of four learning domains that are critical for the 21st century college graduate, leading to a comprehensive project, called Core Commitments, aimed at addressing the need for the intentional pursuit of PSR as a viable learning outcome of higher education:

The inclusion of this separate program within AAC&U that presumes to teach PSR is quite a remarkable statement about the critical role higher education plays in teaching students to understand and explore their ethical responsibilities to themselves and others. This was a remarkable call for returning to the root roles of the early American colleges, where character development was considered even more important than the solitary growth of the intellect. (Ardaiolo, Neilson, & Daugherty, 2011, p.1)

The Core Commitments project identifies five dimensions of PSR, which the AAC&U emphasizes in order that:

All students reach for excellence in the use of their talents, take responsibility for the integrity and quality of their work, and engage in meaningful practices that prepare them to fulfill their obligations in an academic community and as responsible global and local citizens. (O'Neill, 2011, p. 1)

Culmination of themes. As the final phase of analysis progressed and selective coding was initiated, it became clear that the common experiences and beliefs of the participants

culminated in the development of *personal and social responsibility*. Even before I examined the five dimensions of PSR, the data supported this assertion.

Hannah G. shared how she addressed personal struggles with anxiety by confronting the issues directly:

I went to talk to a counselor and got strategies for re-attributing—cognitive behavioral therapy type of things. Learning strategies to overcome it is one thing; recognizing that it's a normal thing that a lot of people deal with. It may be representative of the reality of the situation, but it's a common experience that you *can* deal with is another thing. One is actually doing it, and one is recognizing that you can change it.

This message came through in a variety of ways. Hester G. and Henry G. both indicated their own mentality of *pull yourself up by your bootstraps*, while Holly G. reiterated, “I'm going to keep going in the direction that I know I need to be going in.” Helen F. has lived by the philosophy of “getting the job done” since early childhood. Henry G. was also influenced toward this way of thinking from an early age: “If you're not satisfied with your station in life, then do something, nobody else is going to do anything for you.” The participants also exhibited this mindset when they specifically communicated the sense of ownership they experienced in pursuing their doctoral degree, as per Harry:

Who's going to actually complete the writing of it, who's going to work on specific aspects of it? Who's gonna actually get it done? There are certainly times to ask for help, but even that's the ownership, right? Like, so do you ask for help or to request help is still ownership of the task. . . I think that that's not inconsistent with personal responsibility, right? Even to seek help and to seek guidance is still a demonstration of, and a reflection of personal responsibility.

Finally, once this central theme was established, I followed up with the participants to question them directly about evidence of the five dimensions of PSR in their own lives: (a) Striving for excellence, (b) Cultivating personal and academic integrity, (c) Contributing to a larger community, (d) Taking seriously the perspective of others, and (e) Developing competence in ethical and moral reasoning and action (AAC&U, 2010). Corbin and Strauss (2015) revel in the unique nature of grounded theory, in which “concepts are derived from data during analysis,” and these concepts “guide collection of subsequent data” (p. 15).

Concerning excellence, Harrison G. disclosed his efforts to ensure that the K-12 school he administers exceeds expectations:

I strive for excellence. . .in my professional life I would say down to the way things look in this school building that I'm responsible for—the perception it gives off. The attention to detail is a really important aspect of how things are done here. Everyone knows that little things are big things. . .48-hour callback rule, a follow-up on every email. . .to make sure that the customer was pleased with how we handled the situation. We train teachers and staff how to communicate properly.

Regarding cultivating integrity, Henry G. remembered a stressful experience in college that put him on a path committed to academic honor:

I failed one course because of accidental plagiarism. . .very minor grammar issue. I didn't put quotation marks around a direct quote, and she failed me. . .And as ridiculous as I thought that was, I never forgot that lesson. That was the first. . .experience that made me value academic precision.

Contributing to a larger community, discussed heavily earlier within the service theme, is deeply evident in the participants' professions, as well as through their faith-based actions. Hayden G.,

a coach and teacher, noted, “As a teacher, I am contributing to the growth of students not only in education but in helping them grow to become productive citizens.” Hannah G. extolled the virtue of research for the benefit of others:

I think research is useless unless it is done in the service of contributing to solving some type of societal problem or answering a question at the societal level. . .it is essential to me to do research that upholds this value. This can include outreach efforts, meaningful collaborations with educators, etc., but I try to do all of my research with this goal in mind.

Taking seriously the perspective of others is an integral facet of many aspects of Harry’s professional and societal roles as a counselor and volunteer wrestling coach:

In order to practice effective therapy, there has to be an understanding of somebody's perspective, their context, their environment, and how that shapes their behavior. I do that in a teaching environment when I'm considering different teaching practices that would be effective or ineffective based on students' individual experiences in context. I certainly do that as a mentor and an advisor for graduate students and for like research agendas and practice.

Lastly, developing ethical and moral reasoning competence is illustrated in Heather G.’s daily life, as well as several others’, as a result of values instilled by the Christian faith:

I have a personal relationship with Jesus Christ, and as such I live by the ethical and moral values of the Bible. I understand that my whole life is lived with a Biblical world view and use my Christian values to inform all of my actions and decisions.

The religious faith of my participants acts as both a guiding force directing their actions and a lens through which they interpret their life experiences.

Summary

In this chapter, I presented and explained the findings of the study, illustrated by the Grit Growth Model. Next, I answered the central and sub-research questions of the study by developing each component of the model with supporting data collected from the participants. The Grit Growth Model depicts the process of grit and growth mindset development, presenting a credible and applicable theory of this process, which doctoral and other leaders can utilize to practically support persistence, as discussed in Chapter Five.

CHAPTER FIVE: CONCLUSION

Overview

The purpose of this qualitative, grounded theory study was to generate a model illustrating the connection between grit and a growth mindset, and how these two personal characteristics develop and influence doctoral persistence (operationalized as doctoral completion). In this chapter, I summarize the important findings revealed through careful analysis of the data. These findings are then discussed further within the greater context of relevant literature and the conceptual framework of the study, leading to an exploration of the theoretical, empirical, and practical implications of the Grit Growth Model. Delimitations and limitations of the research are evaluated, and the chapter concludes with recommendations for future related research. The fulfillment of the study's purpose, the Grit Growth Model, displays both the common beliefs/values and the life experiences that the 12 participants revealed which developed personal grit and a growth mindset in their own lives.

Summary of Findings

Through purposeful and snowball sampling, I recruited 51 doctoral completers as survey participants. These surveys were conducted through Google Forms and contained demographic questions, as well as the Short Grit Scale instrument (Duckworth & Quinn, 2009) and Dweck's (1999) Mindset Instrument. Survey participants were given the opportunity to volunteer for the qualitative portion of the study by supplying contact information at the end of the survey. There were 12 volunteers purposefully selected as interview participants from this pool. Initial interviews were conducted by phone or in person. Using coding, memoing, and constant comparison methods central to a grounded theory design (Corbin & Strauss, 2015), I identified prominent themes and categories and then collected additional data (reflective journal

assignment and follow-up written/oral interviews) to finalize the core category and resulting theory. The findings of the study, which emerged through triangulation of all data collected (instruments, interviews, journals, follow-up questions) and data analysis methods (coding, researcher memoing, and constant comparison), generated the final product—the Grit Growth Model.

The central research question, examining how grit and a growth mindset develop and influence doctoral persistence, was divided into three sub-questions in order to examine both the external and internal aspects of grit development in the participants' lives, as well as the relationship between the two characteristics. The first sub-question (SQ1) focused on the external factors: *What life experiences influence the development of grit in doctoral completers?* My participants shared common experiences over the course of their lives which included occasions of significant *loss*, either in the form of loved ones passing, divorce in the family, moving, or professionally. These experiences were shared in response to being asked about the hard parts of either their childhood or adulthood, so the impact of these losses was substantial. The result of personal loss in the participants' lives was a strengthened resolve to finish their course and a renewed perspective surrounding the brevity of life. As they experienced deep, personal loss, they also gained tenacity, and even a sense of urgency.

In addition to loss, participants shared about life experiences that involved considerable *engagement* with the wider world beyond everyday living. This engagement included such experiences as travel, relocating, and extracurricular activities and resulted in repeated or long-term personal stretching of the participants beyond their comfort zone. These interactions with the world increased their capacity to exert effort for important goals and galvanized higher levels of tolerance for the unknown. The completers I interviewed also reported that during their

growing up years, as well as during their adult years, they were subjected to high *expectations* of significant others. Usually the expectations centered on academic effort (not achievement), involvement with activities, or a moral code of behavior. Many of the participants reported that the expectations were under supportive circumstances, offering evidence to reinforce Duckworth's (2016) premise that grit grows from the influence of authoritative figures. These expectations naturally instilled a sense of personal responsibility within the participants to take ownership of their own effort and behavior, while also normalizing a system of accountability to others. Finally, common experiences of the participants involved areas of *service*—either military, their chosen professions, or faith-based—present in either their family of origin or their own lives since childhood. These values and experiences surrounding service trained the participants to view the world less egocentrically, developing in them an appreciation for the internal rewards that a life of sacrifice offers.

The participants indicated that they lean heavily on the support of both personal and academic *relationships* to achieve their goals. Most shared that they would not have completed their doctoral degree if it were not for this personal support. This support offered them the encouragement, camaraderie, motivation, and persuasion needed in order to persist in the midst of challenges, as well as celebrate in moments of success or triumph. This relational support was not just unconsciously, or even consciously, received—it was intentionally sought. From these relationships, the participants gleaned internal strength to accomplish personal goals, realizing that leaning on others for support is a vital aspect of their pursuit.

The second sub-question (SQ2) was aimed at identifying the common internal factors driving the development of grit: *What values and beliefs influence the development of grit in doctoral completers?* The interviewed participants shared two common categories of values and

beliefs. First, most of them subscribed to a certain religious *faith*, all of which centered on Judeo-Christian values. Second, the participants were characterized by a *passion* for either their field of study, for their professional focus, or for learning in general. As pictured in the Grit Growth Model, the faith and passion of the doctoral completers drove the growth of personal characteristics directly (the vinedresser shaping the direction of the vines) and were also deeply connected to their life experiences (the vinedresser watering the roots). Religious faith and passion developed grit by providing a sense of personal purpose that bolstered the participants' degree of effort to complete their degree. For example, Helen F. saw her vocational work as a nurse, and nursing educator (experiences—*service*) as an integral part of her ministry calling through her Christian faith (beliefs—*faith*).

The third sub-question (SQ3) dealt with the topic of the relationship between grit and growth mindset: *What is the relationship between grit and growth mindset in students who persist to doctoral completion?* Although not correlational research, the quantitative data of the study suggested a positive relationship between grit and a growth mindset is probable (see Figures 4 and 5 in Chapter Four). However, the quantitative data does not reveal the full picture that the qualitative data in this study paints. Only three of the 12 interviewed participants scored as not having a growth mindset (two scored as fixed, and one scored as neither) on the instrument. However, all three of those participants indicated in the reflective journal assignment, as well as the personal interview, that they *do* believe that the development of grit is possible. In light of the quantitative indicators and the supporting qualitative data, I concluded that grit and growth mindset are closely intertwined, thereby resulting in the vines (characteristics) growing closely together in the model.

Two additional characteristics noted in the doctoral completers' personalities were psychological *flexibility* (Ciarrochi & Heaven, 2012) and *shame resilience* (Brown, 2012). The doctoral completers I interviewed demonstrated flexibility by adjusting to unexpected events within their program—effectively navigating uncharted territory that presented frequent and unanticipated turns. Some students experienced roadblocks during the dissertation phase that caused them to lose traction and set them back significantly in terms of time and progress. Others encountered changing criteria or fluid advisor assignments. Through all of these challenges, the participants were able to push through the turbulence, continuing forward progress despite fishtailing circumstances. Additionally, the participants were able to overcome their own mistakes and even failures along the way, exhibiting shame resilience by persevering even when they experienced such setbacks as failing the comprehensive exam twice or having to completely restart their dissertation. Perhaps the earlier challenges in their lives, such as extra-curricular activities, relocating, and having high expectations imposed from authority figures, enabled the participants to face additional, even greater challenges encountered during their doctoral degree.

After careful analysis of the relationship between all of these findings and making constant comparisons across the gathered data, it was plainly evident that all of these life experiences and core values, shared by the participants, established a foundation of *Personal and Social Responsibility* (PSR) (Ardaiolo, Neilson, & Daugherty, 2011); this fostered the development of grit and a growth mindset in their personality leading to their ability to complete an advanced degree. PSR is embodied by the students who respond resolutely to an innate sense of “ethical responsibilit[y] to themselves and others” (Ardaiolo et al., 2011, p.1). Holly G. demonstrated this quality aptly:

Personal integrity has been a conscious goal of mine for the past three years. As I have transitioned to leadership roles it is very important that I am measuring my actions based on a high bar of moral and ethical integrity. What is the morally, ethically, legally correct thing to do in this situation? I use that as a way of determining my actions and evaluating the actions of others. I think mistakes are okay, and admitting mistakes is really important—but lack of integrity is a character flaw. I have seen this flaw and it is something that I consciously work to avoid. High personal integrity is one of the most important things to me in my life and in my work.

The overwhelming consistency expressed throughout the data revealed the core category of personal and social responsibility; that is, the ownership that the participants embraced to do all that was necessary to complete the degree in an excellent and ethical manner, as well as a sense of societal obligation or others-centered mentality driving their own achievement.

Discussion

The value of a grounded theory study lies in its accomplishment of not only verifying prior research, but also extending previous concepts for a useful and meaningful purpose (Corbin & Strauss, 2015). The model produced by this study contributes to the larger body of knowledge in several key areas: (a) Dweck's (1999) Mindset Theory, (b) the Theory of Grit (Duckworth, 2016), and (c) doctoral persistence literature (Lovitts, 2001; Tinto, 1993). The Grit Growth Model confirms previous theory that correlated grit with achievement of goals (Duckworth, 2016), as well as a growth mindset with scholastic success (Dweck, 2016). Additionally, the Grit Growth Model introduces new concepts surrounding the development of personal grit to accomplish long-term goals. Finally, the Grit Growth Model offers a path for doctoral leaders to

directly impact student persistence in terms of purposeful development of these two characteristics through interventions.

Role of Growth Mindset

A growth, or incremental, mindset stems from a self-theory in which people believe that their basic characteristics are malleable and can be advanced through purposeful effort or external means (Dweck, 1999; 2008). People who subscribe to a growth mindset embrace challenges and failures as opportunities to grow stronger and better (Dweck, 2016). They also fear failure less, and therefore persist even when setbacks occur. The literature suggests that doctoral students who already endorse a growth mindset stand a higher chance of persisting successfully because they will tend to esteem the *process*, since “the growth mindset allows people to value what they’re doing *regardless of the outcome*” (Dweck, 2016, p. 48).

Previous research surrounding a growth mindset established a connection with academic achievement (Mangels et al., 2006; McClendon et al., 2017). The quantitative results of this study indicated that 75% ($n = 9$) of the interview participants and 82% ($n = 42$) of the total survey sample subscribed to a growth mindset. However, the qualitative data suggested an even higher percentage, revealing the capability of the nuance of language and context to communicate a more accurate forecast of implicit theories. Helen F., a prime example, spoke repeatedly about the growth she has seen in others and has experienced herself. She sees herself as a “life-long learner” and affirmed the power of the Christian faith to galvanize people to focus on things “that are ‘true, honest, just, pure, lovely, good report’” (Phil. 4:8) and to begin “to see the world and our situation through His eyes. Then we see our ability to grow.”

Doctoral completers in this study reported a resounding belief in their own human potential to improve and grow, particularly in the personal trait of grit. This confirms prior

research that introduced the concepts of both grit and growth mindset to undergraduate and graduate students, as well as professionals, in which findings indicated that the interventions led individuals to believe that they can “begin to take responsibility for their own personal and professional success and development” (Pueschel & Tucker, 2018, p. 7). Findings not only confirm prior knowledge about the connection between growth mindset and academic success (Dweck et al., 2014; Dweck, 2016), but also extend that association to include doctoral achievement in particular.

Dweck (2016) asserted that a growth mindset might be passed on to others through the correct use of praise and proper response to failure. From the praise of their effort (not a particular outcome), students learn to continue their efforts in the midst of challenges. By seeing failure as a temporary learning opportunity and not a dismal end, students receive the message that obstacles can be overcome and should not be feared. The results of this study also introduce a wide range of other possibilities that may foster a growth mindset. As one example, doctoral completers endured significant loss in their lives. Tedeschi and Calhoun (2008) detailed a phenomenon called *posttraumatic growth*, which may be useful in understanding the mindset of future doctoral students who experience personal loss:

The kinds of growth experiences described by persons who have faced the struggle with bereavement tend to fall into five general categories: the experience of the emergence of new possibilities, changes in relationships with others, an increased sense of personal strength, a greater appreciation for life, and changes in existential and spiritual orientations. (p. 32)

Posttraumatic growth aligns with other lines of research, namely the concept of “steeling effects” (Rutter, 1985), which refers to the strengthening effect of overcoming adversity. Therefore, the

findings from this study corroborate prior research that personal loss acts as a catalyst for personal growth—as well as built-in resistance to future adversity—and may be instrumental in removing implicit barriers to a growth mindset.

Development of Grit

The findings of this study also align with the literature surrounding a positive relationship between grit and academic achievement (Climer, 2017; Duckworth et al., 2011). Of the 51 total survey participants, 98% scored higher than the midpoint, indicating a high level of grit, according to Duckworth's (2016) scoring guide. Since a doctoral degree, the highest level of academic achievement, uniquely satisfies the very definition of grit, established by Duckworth (2016) as the “combination of passion and perseverance” (p. 8) to accomplish long-term goals, this finding was completely expected. However, very little prior research examined grit's connection to doctoral persistence.

Duckworth (2016) posited several possible internal factors that may develop grit. Natural interests and passions were affirmed in my category of *passion*, which was expressed by several participants. Previous research also indicated that an innate sense of a larger purpose or calling enhances a person's degree of effort significantly toward achieving a long-term goal, especially if the goal benefits others (Hill et al., 2014; Von Culin et al., 2014). Duckworth (2016) explained that, “most gritty people see their ultimate aims as deeply connected to the world beyond themselves” (p. 148). My participants were certainly no different. Through the findings of religious and vocational *service*, participants revealed a desire to make a difference for the sake of others. This aligns with Duckworth et al.'s (2014) assertion that motivation to pursue goals increases when the goal is related to others, and that “the desire for meaning and purpose in life seems to contribute to both facets of grit” (p. 311).

Duckworth (2016) also suggested several extrinsic factors that may develop grit. An authoritative style of parenting, characterized by high level of demand in a supportive environment, has been correlated with higher levels of grit in Latino adolescents, resulting in less delinquent behavior (Guerrero et al., 2016). Findings corroborated this link between authoritative figures and grit within the category of *expectations*. Multiple participants testified of the influence of parents, teachers, or other significant people in their backgrounds who required a certain standard of performance, effort, or behavioral output in a supportive environment. Additionally, Harry and others expressed that their parents focused more on effort than achievement, indicating that the authoritative figures also subscribed to a growth mindset, opening yet another avenue of inquiry for future research.

Duckworth's (2016) contention that grit grows from consistent and intentional practice was also supported by findings within the larger theme of *engagement*. Many of the participants engaged in multiple and prolonged extracurricular activities, such as dancing or sports, which demanded such committed practice as Duckworth suggested. However, findings also extended this notion to include a broader range of life experiences—such as changing schools, relocating, and travel—revealing other types of challenging circumstances that can stretch people past the boundaries that are innately comfortable and building internal mechanisms of perseverance.

Although the aforementioned results were somewhat expected, with some extension noted, what was not expected was the central theme of my study—the core category of *Personal and Social Responsibility* as a foundation for the development of grit. However, once I identified the central theme, and revisited the data using constant comparison (Corbin & Strauss, 2015), it was as if I had put on new eyeglasses. I saw it so clearly, boldly even—everywhere in the data. Corbin and Strauss (2015) advise that the core category “appear frequently in the

data. . . within all, or almost all, cases there are indicators that point to that concept” and it “should grow in depth and explanatory power as each of the other categories is related to it through statements or relationships” (p. 189). Participants overwhelmingly both believe in and demonstrate, through actions, excellence and service to others. They act with integrity, fulfilling an internal ethical responsibility to themselves and the wider world. All of the participants’ life experiences and values interface to produce both a sense of ownership of their life’s path and a moral obligation to positively affect humanity through service. When I revisited some of my highlighted statements from the book, *Grit* (Duckworth, 2016), I realized that my central theme was right there all along:

One kind of hope is the expectation that tomorrow will be better than today. It’s the kind of hope that has us yearning for sunnier weather, or a smoother path ahead. It comes without the burden of *responsibility* [emphasis added]. The onus is on the universe to make things better. Grit depends on another kind of hope. It rests on the expectation that our own efforts can improve our future. (p. 169)

This is precisely the story that was told by the doctoral completers of my study.

Supporting Doctoral Persistence

The results of this study confirm previous research revealing the value of both personal and academic relationships to student persistence efforts (Tinto 1975, 1993). This category registered the second highest number of code counts during analysis (Appendix Q), indicating its important rank in participants’ lives. Personal relationships played a critical part in their lives in general, such as for Helen F.: “I just have had people in my life who have always had great faith in me,” while on the academic front, Holly G. spoke about the vital role that her cohort played in her ability to complete: “There are certain things that go on in a doctoral program that only the

other people that are in it with you can understand.” Tinto (1993) theorized that “graduate persistence is also shaped by the personal and intellectual interactions that occur within and between students and faculty and the various communities that make up the academic and social systems of the institution” (p. 231), and findings of this study comprehensively confirm his work. These findings are illustrated on the Grit Growth Model separately from the other findings (as the pillars of the grapevine structure), because they have been well documented in the literature (Golde, 1994; Rockinson-Szapkiw & Spaulding, 2012), and I wanted to focus on developing the other, less established categories.

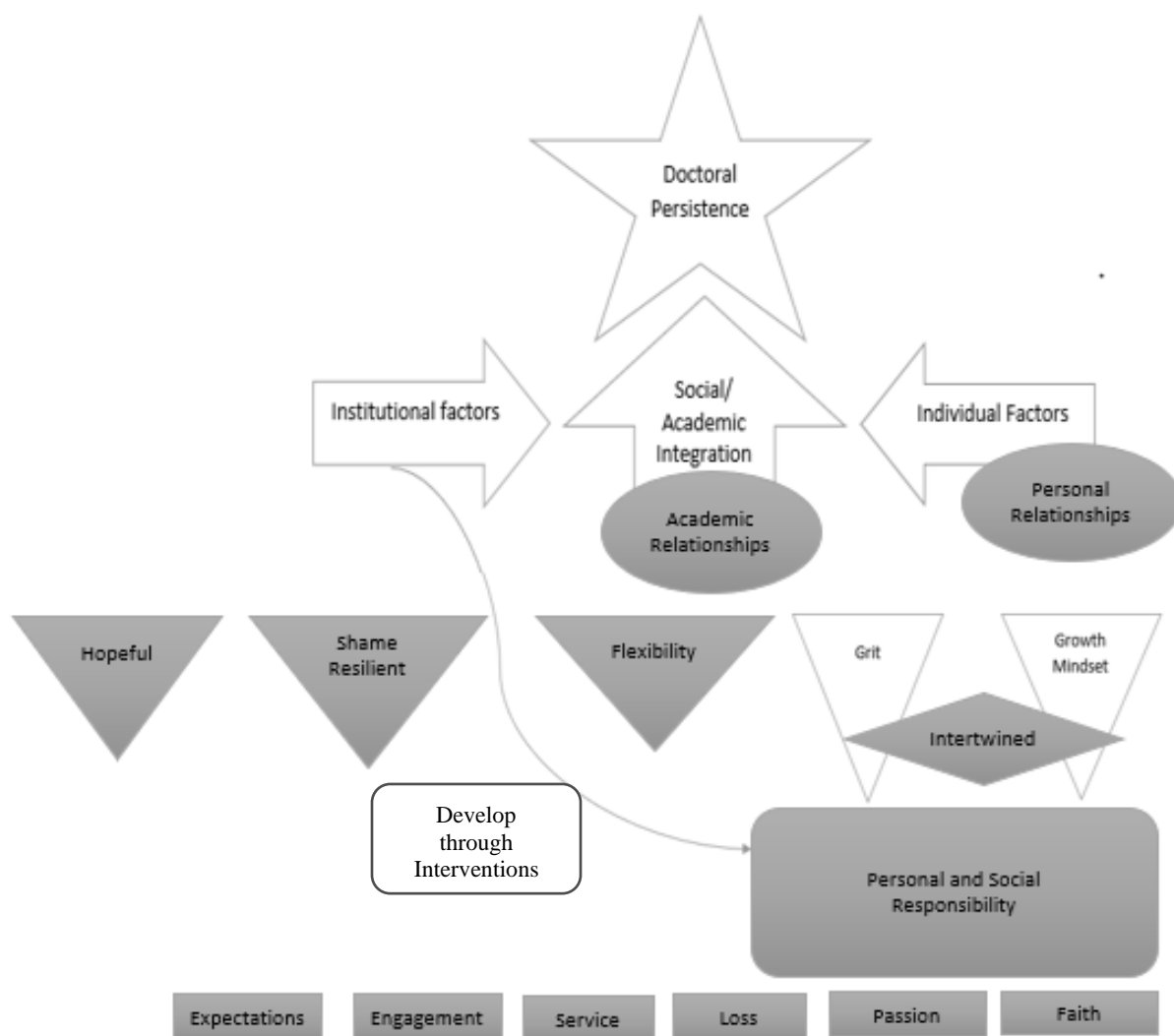


Figure 6. Student Development Model of Doctoral Persistence.

Additionally, this study confirmed the important role of personal characteristics, specifically grit and a growth mindset, in doctoral persistence (Lovitts, 2005; Rockinson-Szapkiw & Spaulding, 2014; Santicola, 2013). The unique contribution of this study is the suggestion of a departure from the typical approach of leaders in post-graduate institutions from a student-integration/engagement approach, to a more direct personal development strategy (see Student Development Model of Doctoral Persistence in Figure 6). Whereas leaders in doctoral programs have typically tried avenues such as cohort connections or writing support strategies to support completion (Brill et al., 2014; Golde, 2005; Santicola, 2013), the Conceptual Framework of this study (see Figure 2) suggests an additional approach. Since all of the participants exhibited high grit and most, if not all, also demonstrated a growth mindset, these findings may reveal particular personal characteristics that doctoral leaders can cultivate directly to address attrition.

Looking at the Student Development Model of Doctoral Persistence, leaders can see that this study does not aim to suggest that other completion support efforts on the institution side, nor those relating to student integration, be abandoned entirely. On the contrary, this study confirmed the value of the role of academic relationships and that those efforts should continue. However, the results of this study indicate that program elements designed to increase student grit and a growth mindset offer an *additional* strategy for leaders to add to their student support arsenal.

Not only do the findings indicate the value of grit and a growth mindset to doctoral persistence, but they also introduce a novel contribution of *how* to cultivate these characteristics through the development of *Personal and Social Responsibility*. This discovery has valuable implications for practice far beyond doctoral study, which will be discussed more in the next

section. It is worth noting that if the results of my study had culminated with the categories of *loss, expectations, engagement, and service*, it would be difficult to guide doctoral leaders at this juncture with explicit, actionable advice. Obviously, leaders would not be able to (or even want to) replicate these types of experiences through their graduate programs. However, the central category of PSR opens up a clear path in the literature—a well-established one—for program leaders to engage with, tailor to, and provide a novel, practical approach to doctoral persistence support for students.

Flexibility

Although Watts (2008) described a “fractured student identity” that occurs when present-day doctoral students have to “make the psychological adjustment of constantly switching from one mindset to another” (p. 369) between their various student, professional, and personal roles, no connection in the literature has previously emerged between doctoral persistence and psychological flexibility. The findings of this study introduce the possibility of a correlation between psychological flexibility and doctoral persistence, as the participants demonstrated an ability to fit their doctoral responsibilities into busy schedules, which included full-time jobs, marriage relationships, parenting duties, and many other extra-curricular activities. This type of fractured identity takes its toll on students as they find themselves having to choose between responsibilities and alternate roles continuously on any given day over an extended period of time; yet the completers in this study pushed through these challenges and succeeded.

Not only must doctoral students exhibit flexibility in order to assimilate their academic requirements into already busy lifestyles, but they must also be prepared to rebound when challenges arise. Just as Leaf’s (2018) research in psychology demonstrated people’s capability to intentionally change thought patterns, neuroscientists also reinforced that “understanding

changes in brain structure as a result of learning and adaptation is pivotal in understanding the characteristic flexibility of our brain to adapt” (Draganski et al., 2006, p. 6317). Likewise, study participants exhibited flexibility through challenging setbacks in their programs, both personal and academic, thereby extending Leaf’s (2018) and Draganski’s (2006) research to apply to doctoral students specifically. Alternatively, departing students may lack the flexibility in thinking to make adjustments to their expectations when setbacks occur—to adjust goals instead of giving up.

Shame Resilience

Due to the scrutiny that occurs at the doctoral level of the academic spectrum, completers must be able to withstand the vulnerability of contributing to the larger research community and demonstrate shame resilience in the face of public evaluation. The completers in this study believed in their own potential no matter the obstacles, that their efforts were enough, and that their own mistakes were not irredeemable—introducing a connection to doctoral persistence not yet established in previous research. The participants in this study demonstrated shame resilience, for which Brown (2012) asserted, “self-compassion is key” (p. 75), and which is necessary to overcome academic paralysis and to release the power of creativity and innovation, a critical facet of doctoral accomplishment.

Implications

The Grit Growth Model offers a rich explanation of the process of grit and growth mindset development in doctoral completers, making it a valuable contribution to the literature surrounding these two constructs, with a variety of theoretical and empirical implications. Additionally, the established connection between these two characteristics and doctoral persistence, especially relating to the core category of personal and social responsibility, is

especially useful for theorists, researchers, and practitioners. These connections are useful for a variety of stakeholders, including institutional leaders, faculty members, and individuals who desire to develop grit and a growth mindset.

Theoretical

Previous doctoral persistence theory concentrated on the role of student integration into the social and academic sectors of the institution (Tinto, 1975, 1993), as well as the responsibility borne by the institution to make “organizational culture and social structure” (Lovitts, 2001, p. 264) changes to encourage completion. The significant theoretical contribution of this study is the suggested shift from emphasis on student integration and institutional adjustment strategies *only* to adding a more targeted focus on direct student development efforts that can be fostered by the institutions, faculty members, and students. In this technological era, institutions must adjust with the times and recognize the evolving needs and limitations of doctoral students. Developing personal characteristics, in already matriculated students, through interventions has not been heavily pursued at the doctoral level and may supply a missing link in previous persistence models (Astin, 1999; Lovitts 2001; Tinto, 1993). Institutional leaders must begin to explore program initiatives that endeavor to address personal characteristic advancement—specifically those characteristics in this study which are tied to completion—grit and a growth mindset.

Empirical

The findings of this study introduce a new application of Brown’s (2006) shame resilience theory in the realm of student persistence—doctoral persistence in particular. Brown (2016) revealed her own growth mindset in valuing process over product:

When a student gets back an exam that he or she failed, it doesn't end there. When grades come back, that's the beginning, even for people who got that perfect "A." What did you learn about yourself in the process of preparing, taking, and receiving this exam? What is the learning here for you? What would you do differently? What would you do the same? What do you know about yourself that you didn't know before you took the exam? These conversations are about not just the product of our learning but the process of our learning. To me, these can be so powerful. It takes time, and it takes someone who believes in the transformative power of the classroom.

However, research is limited on any connection between growth mindset and shame resilience, grit and shame resilience, as well as the role of shame resilience in persistence. These connections and the representation of shame resilience on the Grit Growth Model as a protective factor provide new avenues to guide future research.

Although numerous studies associate growth mindset with grit (Fitzgerald & Laurian-Fitzgerald, 2016; Hochanadel & Finamore, 2015), the findings of the current study strengthen the argument that the two constructs are inherently linked. Delving past the relationship implied by the quantitative results, the words of the participants yield even richer evidence of this connection. In addition, the relationship suggested by the Grit Growth Model between a growth mindset and doctoral persistence adds to the body of literature surrounding Dweck's (2016) implicit theories.

Duckworth (2016) found that grit usually appears in higher rates as people get older, supporting the notion that grit can be internally and externally developed:

Grit grows as we figure out our life philosophy, learn to dust ourselves off after rejection and disappointment, and learn to tell the difference between low-level goals that should be abandoned quickly and higher-level goals that demand more tenacity. (p. 86)

However, Duckworth also pointed out that very little empirical research has formally inquired into the common life experiences or internal forces that forge grit; the Grit Growth Model provides a pioneering venture toward that end. Future researchers in any field can build upon this model by replacing *doctoral persistence* with their own long-term goals or achievements and representing their findings by adjusting the model accordingly. In this way, the significance of the Grit Growth Model lies in its adaptability to future inquiry, providing a meaningful template to illustrate confirmatory or alternative findings.

Practical

The product of this study, the Grit Growth Model, offers significant practical guidance to various stakeholders in doctoral programs, as well as leaders and individuals in any discipline. Not only can the extensive body of literature centered on grit and a growth mindset be consulted for specific guidance, but also the resources created by the researchers themselves. Additionally, significant interventions that teach personal and social responsibility are widely accessible for reference.

Program administrators. The unique implication of this study is the suggested path of using interventions that develop personal and social responsibility (PSR) to grow the characteristics of grit and a growth mindset. Although moral and civic development have recently been identified by the AAC&U (2010) as a critical domain of learning in a liberal arts education, for many years these objectives were not prioritized in higher education. Looking to the past, it is evident that “historically colleges have and can continue to maximize students’

civic engagement and ethical learning when both are envisioned as integrated goals straddling students' academic and nonacademic lives and permeating institutional culture” (Boyd & Brackmann, 2012, p. 39). Do all doctoral students, by nature, already demonstrate PSR upon entry? The attrition rate and literature suggest otherwise (Sverdlik, 2018).

Researchers examining personal and social responsibility literature assert that “a pervasive, intertwined, and intentional approach to encouraging civic engagement with an acknowledged moral dimension enhances the development of personal and social responsibility (PSR) in students” (Boyd & Brackmann, 2012, p. 39). Given the findings of this study, doctoral program leaders should make a concerted effort to add this focus to their portfolio of strategies to support student persistence. Specifically, programmatic elements such as direct provision of grit, growth mindset, and PSR resources through doctoral student communication platforms, could deliver persistence support by means of advancing student metacognition of these principles. Additionally, student modules that introduce and inspire growth in these areas using the quantitative instruments for grit and a growth mindset, followed by reflective journaling, direct instruction videos, and post-tests, are suggested. Administrators are encouraged to explore the previously reported PSR interventions in the literature to find the right fit for their own doctoral programs, as well as to modify those interventions in innovative ways, and cultivate PSR at the post-graduate level with appropriate rigor, yet without overly burdening already overwhelmed doctoral students (AAC&U, 2010).

Faculty initiatives. For faculty members who wish to focus on growing grit or a growth mindset through interventions that have already been established surrounding the work of Duckworth (2016) and Dweck (2016), effective methods are widely discussed in the literature (Bashant, 2014; Bassett et al., 2013; Dweck et al., 2014; Olson, 2017; Pierrakos, 2017). Not

only can a variety and substantial number of interventions be explored based on prior research, but also Duckworth has specifically established an organization, Character Lab (<https://characterlab.org/>), which offers insight and research-based resources to any practitioners seeking to encourage grit growth and serves as a hub for general character development. Dweck has also pioneered a platform for offering mindset development resources, Mindset Works (<https://www.mindsetworks.com/default>), supplying a number of programs that have established success.

For those faculty members who wish to implement their own strategies to develop PSR, regardless of the institutional focus, resources are abundantly available as well. The material published by the AAC&U (2010), which “aims to reclaim and revitalize the academy’s role in fostering students’ development of personal and social responsibility” (p. 1), provides a wealth of information to inform faculty members of the important work being done to address teaching for PSR. One of their major projects, a “Leadership Consortium”, has comprehensively worked to “expand, deepen, and assess education for personal and social responsibility” at the higher education level. Faculty members would be wise to study the work that has been done already by the AAC&U (2010) and the Leadership Consortium and adjust these works to fit their needs.

Individuals. Finally, for individuals who wish to develop grit and a growth mindset within themselves or others, by studying the array of categories of experiences and beliefs on the Grit Growth Model, can see multiple paths to follow on this quest. On the vine dresser, the categories of religious *faith* and *passion* point the way for individuals to pursue development of personal meaning. My participants found a sense of purpose and moral obligation to society from their faith that acted as a guiding force in their lives toward acts of service dedicated to the betterment of society. Additionally, they discovered true passion in learning, reading, and

studying disciplines of interest, resulting in a desire to know more and advance academically, but also to use their knowledge and skills for a greater good. I recommend that individuals consider pursuing religious faith and areas of passion to increase their own sense of personal purpose and life mission.

The life experiences of my participants also shed light on multiple avenues individuals can follow to purposefully develop grit and a growth mindset. From the categories of *personal* and *academic relationships*, as well as *expectations*, individuals can learn to surround themselves with people who believe in them, who will push them in times of weakness, who will support them in times of failure, and who will not let them quit a worthy pursuit. Based on these findings, individuals should choose wisely the people they invite into their circle of influence, taking care to create an atmosphere of supportive and demanding relationships throughout their lives.

From the category of *service*, I advise individuals to follow the lead of my participants by giving themselves to whatever worthy cause draws them. Military service, public health or education professions, faith-based service, and pro bono opportunities are just a few of the ways the doctoral completers in this study gave sacrificially of their time and resources. Additionally, through the category of *loss*, my participants revealed their renewed commitment to achieve their goals even when faced with heartache, such as the passing of loved ones, divorce, or professional loss. Likewise, individuals who face significant personal loss should intentionally seek out the comfort and healing that they need, while also doubling down their efforts to continue fully living, making the most of short time.

Finally, through the category of *engagement*, the participants overwhelmingly communicated that they had spent their lives in pursuit, and at the mercy, of stretching

experiences. Through competitive sports, challenging coursework, moving across country, lifestyles of travel, changing schools, music or dance lessons, church involvement, and volunteer work, these individuals have lived their lives right up to the hilt. Even when the stretching experiences were perceived as negative, the effects of the broadening of their horizons and expanding of their perceptions were undeniable. Therefore, I charge other individuals who wish to grow their own capabilities to pursue a worthy goal with passion and persistence, to take part in more than everyday life, take chances when they arise, conquer the fear of the new and different, and move beyond their comfort zone whenever possible. This is where real growth takes place and new strength is wrought.

Delimitations and Limitations

Recognizing delimitations and limitations of the study increases “‘transparency’ in terms of the investigator’s positioning and in the conduct of the research,” and “this step further elaborates the details of the study” (Babchuk, 2019, p. 8). Since it was desirable to know the influence of such characteristics as grit and a growth mindset on doctoral persistence, the participants for this study were required to have completed a doctoral degree. By studying completers, I was able to investigate the shared experiences and values of those who are able to finish their degree. I specifically examined more recent completers who had graduated within the last five years, since it was desirable to know the experiences they encountered in their degree programs to identify similarities. I wanted to include participants who could readily remember those experiences. Additionally, since I was examining commonalities in the participants’ general life experiences from childhood through the present day, while also attempting to not overly burden them with a lengthy interview, my questions focused on the highlights of their life experiences—both *good* and *hard*. In subsequent research along these

same lines, it would be preferable to solicit a follow-up interview to dig deeply into more nuanced life experiences that may not emerge in the initial interview.

In terms of limitations, the overall sample was primarily recruited by snowballing through my school and work contacts. Since my school is a faith-based institution, and half of my interview participants volunteered through contacts from school, there is a valid concern that my findings may be less generalizable to the wider population of doctoral completers who do not practice religious faith. It is notable, however, that the other half of the interviewed participants hailed from both my work contacts—a public community college—and through public forums on social media and professional organizations. Nevertheless, future confirmatory research should focus on samples from a wider population who completed at a more diverse group of universities. Additionally, although I believe that my interview sample size of 12 participants produced saturation of themes, a larger sample from a wider variety of disciplines and demographics, including unmarried doctoral completers, may paint a more complete picture of the common experiences and values of completers from a broader range of personal and professional backgrounds.

Recommendations for Future Research

In light of the limitations discussed, as well as the significant findings, the Grit Growth Model and the Student Development Model of Doctoral Persistence offer several avenues to direct future research. Confirmatory lines of inquiry that repeat this study with a larger sample size would serve to strengthen the results, or even adapt them to align with future findings. These replicative studies could also explore greater variation in disciplines and other demographic elements that may have been underrepresented by my research, such as in unmarried and non-religious participants. Quantitative studies that test the Grit Growth Model

could further strengthen the findings of this study, whereas with additionally qualitative inquiry the model also lends itself to easy adaptation as the roots representing life experiences can be adjusted as necessary, as well as the vine dresser representing values and beliefs may be altered in the event that future findings should diverge from the current study. Additionally, future research seeking to test the Grit Growth Theory could explore participants' life experiences and beliefs more in-depth qualitatively to discover finer nuances through longer and more focused interviews. These could be administered using doctoral completers as participants, or even extended to other populations, to find applications of the theory to achievements other than doctoral persistence.

Shame resilience researchers now have a new connection to doctoral persistence to explore as well, and this connection could be further investigated with qualitative study to delve into the finer aspects of this relationship. By studying this population through the lens of shame resilience, future interventions to gird up less resilient students may be designed.

Most importantly, researchers in all three of this study's topic areas—grit, growth mindset, and doctoral persistence—now have valuable information to guide future research. The introduction of the connection between these three constructs and *Personal and Social Responsibility* offers limitless possibilities of prospective inquiry projects. Researchers could conduct quantitative studies to confirm a significant relationship between the constructs of PSR and grit, PSR and growth mindset, and PSR and doctoral completion. More practically, using the wealth of prior PSR literature as a guide, researchers (partnered with practitioners) could execute both pre-test and post-test quantitative and qualitative studies exploring the effects of practical interventions that develop PSR, grit, and growth mindset within doctoral programs, or beyond.

Summary

In sum, the results of this study, which asked how grit and a growth mindset develop and influence doctoral persistence, illuminated a path for various stakeholders to follow on their mission to ignite these personal characteristics within others, as well as themselves. The traits of passion and persistence are noble qualities that fit into a larger landscape of character that guides a person's, or student's, actions. One leader of the past, a doctoral completer, Dr. Martin Luther King, Jr., inspired these qualities to invoke action to address such worthy and long-term societal causes as racial injustice: "We must keep moving. If you can't fly, run; if you can't run, walk; if you can't walk, crawl; but by all means keep moving" (King, 2005, p. 419). He also encouraged educators to influence the whole person through character training:

The function of education is to teach one to think intensively and to think critically.

Intelligence plus character—that is the goal of true education. . .If we are not careful, our colleges will produce a group of close-minded, unscientific, illogical propagandists, consumed with immoral acts. (King, 1992, p. 124)

Character development in higher education has long been an integral facet of its mission:

Liberal education should cultivate the practice of the moral alongside the intellectual virtues. College is about thinking, and the refinement and informing of the intellect is its first purpose. This requires in turn the education of the whole human being. Humans not only think, but they do. Their doing and thinking work together to form their characters. If their characters are not courageous, moderate, and just, then not only will they be craven in action, but their thinking will be impaired. (Arnn, 2019, p. 2)

And so, one sees from my study that this character development need not stop at the undergraduate level, thereby assuming the undergraduate students' arrival at some phantom level

of perfection. This progression of growth continues throughout a lifetime—through both natural circumstances and purposeful action—leading to a society which looks to be excellent, not for selfish gain, but for the true benefit of others and a common purpose, for “an individual has not started living until he can rise above the narrow confines of his individualistic concerns to the broader concerns of all humanity” (King, 2000, p. 250). Like King, the participants of this study demonstrated personal and social responsibility that enabled them to achieve a doctoral degree, opening the door for them to accomplish greatness.

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APPENDICES

APPENDIX A

LIBERTY UNIVERSITY

INSTITUTIONAL REVIEW BOARD

February 11, 2019

Melanie Moran Hudson

IRB Approval 3660.021119: Growing Grit to Produce Doctoral Persistence: A Ground Theory Study

Dear Melanie Moran Hudson,

We are pleased to inform you that your study has been approved by the Liberty University IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Your study falls under the expedited review category (45 CFR 46.110), which is applicable to specific, minimal risk studies and minor changes to approved studies for the following reason(s):

Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,



G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

APPENDIX B

Re: Permission to use diagram in dissertation publication

Angela Duckworth <aduckworth@characterlab.org>

Wed 7/18/2018 12:56 PM

To: Hudson, Melanie <mhudson17@liberty.edu>;

that's fine with me, and good luck!

Angela Duckworth

Founder and CEO, [Character Lab](#)

Christopher H. Browne Distinguished Professor of Psychology, [University of Pennsylvania](#)

Co-Director, [The Behavior Change For Good Initiative](#)

Mailing address: 3401 Market St. Suite 202, Philadelphia, PA 19104

Assistant: Jeremy Steinberg, jsteinberg@characterlab.org

On Tue, Jul 17, 2018 at 11:18 PM, Hudson, Melanie <mhudson17@liberty.edu> wrote:

Dr. Duckworth,

Hello. I am a doctoral student at Liberty University. I am writing to ask permission to include and publish my own rendering of a diagram of your equations depicting that effort counts twice in my study, with citation and credit given to you. I am using the diagram to illustrate the value of effort in achievement. In the study, I will explore the relationship between grit and doctoral persistence, specifically looking to identify common themes in the participants' development of grit, perhaps contributing to the literature concerning what factors cultivate grit. I will also examine the relationship between grit, growth mindset, and doctoral persistence. My study is entitled: "Growing Grit to Produce Doctoral Persistence." I am attaching a representation of the diagram I am proposing to use, as well as the reference below. Thank you so much for your contributions to the field of education.

Sincerely,
Melanie Hudson

Reference:

Duckworth, A. (2016). *Grit: The power of passion and perseverance*. Scribner: New York, New York.

APPENDIX C

February 14, 2019

Dear Doctoral Completer:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Ph.D. in Higher Education Administration. The purpose of my research is to understand the role of grit and a growth mindset in the persistence efforts of doctoral completers, as well as what experiences and beliefs may develop grit and a growth mindset. I am writing to invite you to participate in my study.

If you have completed a doctoral degree within the last 5 years and are willing to participate, you will be asked to:

1) Take a brief survey (It should take approximately 10-15 minutes for you to complete the anonymous survey, and no personal, identifying information will be collected.)
Additionally, you will be asked if you wish to volunteer for a qualitative portion of the study, in which you will be asked to:

- 2) Participate in a personal interview (Audio-recorded, Web-ex or face-to-face) (It should take approximately 45-60 minutes to complete the interview.)
- 3) Review the written transcript of the interview data to check for accuracy (It should take approximately 15 minutes to review.)
- 4) Participate in submitting a brief, follow-up reflective journal (It should take approximately 15-30 minutes to complete the assignment. You will provide your name and contact information if you choose to volunteer for the interview and journal portion of the study, but this identifying information will remain confidential.)
- 5) Participate in a potential, voluntary follow-up interview to clarify or expand upon previous responses (It should take approximately 15-30 minutes to follow up.)

To participate in the survey portion, click on the link to the google doc provided. Submit your answers to the demographic and survey questions. To volunteer for the qualitative portion of the study, type your name and the date on the consent form at the bottom of the survey and enter your email address on the blank provided before submitting. I will be in touch to schedule a convenient time for the interview.

Sincerely,

Melanie Hudson
Doctoral Candidate
Liberty University

To participate, click on the following link:

https://docs.google.com/forms/d/e/1FAIpQLSdA806LbSPm0InlRSvp31R4y8fKifE-ZeUXApQHdpfnF72UuQ/viewform?usp=sf_link

APPENDIX D

The Liberty University Institutional
Review Board has approved
this document for use from
2/11/2019 to 2/10/2020
Protocol # 3660.021119

Consent Form

Growing Grit to Produce Doctoral Persistence: A Ground Theory Study
Melanie Moran Hudson
Liberty University
School of Education

You are invited to participate in a research study which examines the role of grit and a growth mindset in doctoral persistence. You were selected as a possible participant based on your recent (within the last 5 years) completion of a doctoral degree, as well as being 18 years of age or older. Please read the form below and be sure to ask any questions you may have before agreeing to participate in the study.

Melanie Moran Hudson, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background information: The purpose of this study is to answer the central research question: How do grit and a growth mindset develop and influence doctoral persistence? The purpose of this study is also to develop a model depicting how grit and a growth mindset develop and influence doctoral persistence by using doctoral completers' own stories about their beliefs and experiences in life. By looking at participants' own words which describe their beliefs and life experiences, themes may emerge which contribute to the knowledge base of how individual traits of grit and a growth mindset are cultivated. This knowledge could inform doctoral program leaders regarding ways to better design doctoral programs to improve students' chances of completion. By introducing interventions which develop these traits, program administrators could reduce attrition by more directly equipping their students to persist.

Procedures: If you agree to participate in this study, you will be asked to do the following:

Survey Phase

1. Basic demographic information will be collected.
2. Complete the Short Grit Scale instrument. (Time: approximately 5-8 minutes)
3. Complete Dweck's Mindset Instrument. (Time: approximately 5-8 minutes)
4. Toward the end of the survey, you will be asked whether you would like to participate in the interview/journal phase of the study. If you do not wish to volunteer for the second phase of this study, you may end your participation in the study at this point, and no identifiable information will be requested; your participation in this study will remain anonymous.

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Interview/Journal Phase

5. If you decide to volunteer for this phase of the study, you will be asked to provide signed consent by typing your name and date on the bottom of this form. You will then be asked to enter your email address at the bottom of the survey before clicking submit. At this point, your survey responses will no longer be anonymous to the researcher; your participation in all phases of the study (survey, interview, and journal assignment) will remain confidential.
6. Participate in a web conference or face-to-face interview that will be audio-recorded and transcribed, answering questions about your beliefs and life experiences up until now. (Time: 45-60 minutes)
7. Within a week of the interview, fill out a reflective response journal assignment and e-mail it to the researcher. (Time: 15-30 minutes)
8. After your interview is transcribed, you will be given the opportunity to review the transcript and make any corrections or clarifications so that your transcript accurately expresses your intentions. (Time will vary)
9. Because this is a grounded theory study, more data may be desired. You may be contacted again by the researcher to invite you to participate further with additional interview questions. This will be entirely voluntary on your part. (Time: 15-30 minutes)

Risks and Benefits of Participants: The risks involved in this study are minimal, which means that they are equal to the risks you would encounter in everyday life. The only potential risk is a breach in confidentiality if the data is lost or stolen. Your participation will contribute to the field of education and provide insights for leaders in doctoral education programs. However, participants should not expect to receive a direct benefit from taking part in this study. Benefits to society include helping to develop a model of grit and growth mindset development for future use in other disciplines.

Compensation: Participants will not be compensated for participating in this study.

Confidentiality: The records of this study will be kept private. In any report I may publish, I will not include any information that will make it possible to identify an individual subject. Research records will be stored securely, and only the researcher will have access to the records. I may share the data I collect from you for use in future research studies or with other researchers; if I share the data that I collect about you, I will remove any information that could identify you, if applicable, before I share the data.

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Protocol # 3660.021119

- Participants who only participate in the survey portion of the study will remain anonymous.
- Pseudonyms will be used to conceal the identity of interview and journal participants in order to maintain confidentiality.
- In order to protect the privacy of participants during the interview/journal phase of the study, interviews will be conducted and arranged at a time and location of preference for the participant where others will not easily overhear the conversation. If done virtually, I will locate myself in a room with a closed door so that others on my end will not easily overhear the conversation, and I will recommend that the participant do the same. Any contact via e-mail or telephone will be done with the same consideration to minimize the risk of anyone overhearing the conversation. E-mails and e-mail accounts of the researcher are password protected, and contact will be made to the participant via the participant-provided contact information.
- Data files, including interviews, transcriptions, and coding will be stored in the researcher's password-protected computer and not accessible to any other individuals. Back-up files will be stored on a thumb-drive in a lockbox. Upon transcription of the recording into a written file, the participant name will be converted into a pseudonym for the remainder of the study. The researcher will keep a thumb drive with the participant names and pseudonyms, which will remain confidential, accessible only to the researcher. The data will be analyzed using an online analysis software program, which is also password protected. Any data uploaded for analysis will contain pseudonyms. The researcher will maintain the data for three years upon completion of the study per federal regulations. The data will be used to complete the doctoral dissertation requirements and may be used to write future journal articles, blogs, or books; inform the direction or creation of future studies; inform the creation of curriculum or courses; be presented at conferences or speaking engagements; or referenced during professional development or training. However, at all times, participant names will be kept confidential.
- Researcher notes, physical copies of the executed informed consent, and handwritten memos will be kept in a locked file box in the researcher's office, and the researcher only will have the key.
- Interview recordings will be digitally stored as data files for transcription into a written digital file. All digital data files will be maintained with password protection as described above. Any third-party services for transcription will be expected to execute a nondisclosure and confidentiality statement prior to performing services for the researcher and to return all original data files or destroy any copies of same in their possession. Any academic peer review or rater test will use only data that contains pseudonyms. Actual recordings will not be shared or used in subsequent publications or presentations but may be described for the audience without reference to information that may identify the participant. These recordings and digital files will be destroyed and deleted by the researcher after three years.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University. If you

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decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

How to Withdraw from the Study: If you choose to withdraw from the study, please contact the researcher at the e-mail address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you, including audio recordings or written submissions, will be destroyed immediately and will not be included in the study. If you only participate in the survey phase of the study, you will be unable to withdraw your responses once the survey is submitted due to the anonymous nature of the survey. In this case, should you choose to withdraw, please exit the survey and close your internet browser. Your responses will not be recorded or included in the study.

Contacts and Questions: The researcher conducting this study is Melanie Moran Hudson. You may ask any questions you have now. If you have questions later, you are encouraged to contact her at mhudson17@liberty.edu or [REDACTED]. You may also contact the researcher's faculty advisor, Dr. Lucinda Spaulding, at lsspauling@liberty.edu.

If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher, you are encouraged to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or e-mail at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information for your records.

Statement of Consent: I have read and understood the above information. I have asked questions and received answers. I consent to participate in the study.

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

- The researcher has my permission to audio-record me as part of my participation in this study.

***Typing my name shall have the same effect as my original signature if I return this consent to the researcher via e-mail.

Signature of Participant

Date

Signature of Investigator

Date

APPENDIX E

Permission to use and publish the Short Grit Scale

Angela Duckworth <aduckworth@characterlab.org>

Thu 12/20/2018 11:54 AM

To: Hudson, Melanie <mHUDSON17@liberty.edu>;

fine and good luck!

Angela Duckworth

Founder and CEO, [Character Lab](#)

Christopher H. Browne Distinguished Professor of Psychology, [University of Pennsylvania](#)

Co-Director, [The Behavior Change For Good Initiative](#)

Mailing address: 3401 Market St. Suite 202, Philadelphia, PA 19104

On Thu, Dec 20, 2018 at 12:49 PM Hudson, Melanie <mHUDSON17@liberty.edu> wrote:

Hello! In addition to the diagram, may I also please have your permission to use the Short Grit Scale to collect data for my dissertation as described in our previous correspondence?

On Tue, Mar 10, 2020 at 2:58 PM Hudson, Melanie (General Education Admin) <mHUDSON17@liberty.edu> wrote:

Hello again! In addition to the use of the Short Grit Scale (below) and the amended rendering of your diagram depicting that effort counts twice in my study, with citation and credit given to you (also below), may I now have **permission to publish** these 2 items in my dissertation, as well as future article and/or book publications based on my dissertation research? I think you will be quite pleased with my findings which examined the factors which develop grit (internally and externally) in doctoral completers. My work was also accepted to present at the 2020 National Meeting of AERA this April (which will now only be held virtually). I have successfully defended the work and am in the process of submitting for publication to our online library repository, Scholar's Crossing, and ProQuest Dissertations & Theses Global. If you are curious, I would love to send you the link once this process concludes. 😊 The title of my work is "Growing Grit to Produce Doctoral Persistence: A Grounded Theory Study".

Thank you so much!



Angela Duckworth <aduckworth@characterlab.org>

To: ✓ Hudson, Melanie (General Education Admin)

Absolutely! Send me your work when it's ready!

Angela Duckworth

APPENDIX F

Short Grit Scale (Reprinted with permission)

Directions for taking the Grit Scale: Here are a number of statements that may or may not apply to you. For the most accurate score, when responding, think of how you compare to most people - not just the people you know well, but most people in the world. There are no right or wrong answers, so just answer honestly!

1. New ideas and projects sometimes distract me from previous ones.*

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

2. Setbacks don't discourage me. I don't give up easily.

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

3. I have been obsessed with a certain idea or project for a short time but later lost interest.*

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

4. I am a hard worker.

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

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

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

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

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

7. I finish whatever I begin.

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

8. I am diligent.

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

Scoring guide:

Reverse score items: 2, 4, 7, 8

Sub-constructs: Long-term Interest: 1, 3, 5, 6

Perseverance: 2, 4, 7, 8

APPENDIX G

Permission to use Dweck's Mindset Instrument

From: Hudson, Melanie <mhudson17@liberty.edu>
Sent: Thursday, December 27, 2018 2:56 PM
To: dweck@stanford.edu
Subject: permission to use instrument

Hello. I am a doctoral candidate at Liberty University. I am writing to ask permission to use your 16-item mindset instrument in my study (retrieved from <https://mindsetonline.com/testyourmindset/step1.php>). In the study, I will explore the relationship between grit and doctoral persistence, specifically looking to identify common themes in the participants' development of grit, perhaps contributing to the literature concerning what factors cultivate grit. I will also examine the relationship between grit, growth mindset, and doctoral persistence. My study is entitled: "Growing Grit to Produce Doctoral Persistence." I am attaching a representation of the mindset instrument that I am proposing to use, as well as the reference below. Additionally, the data from this study may be used in future studies to conduct statistical analysis of the relationship between grit and a growth mindset. If there is a specific name of the instrument or another citation you would prefer that I use, please advise! Thank you so much for your contributions to the field of education! I have learned so much while studying your book and other publications about mindset.

Sincerely,
 Melanie Hudson
 Doctoral Candidate
 Liberty University

From: Carol Dweck <dweck@stanford.edu>
Sent: Sunday, January 20, 2019 12:39 PM
To: Hudson, Melanie
Subject: Re: permission to use instrument

Hi Melanie,

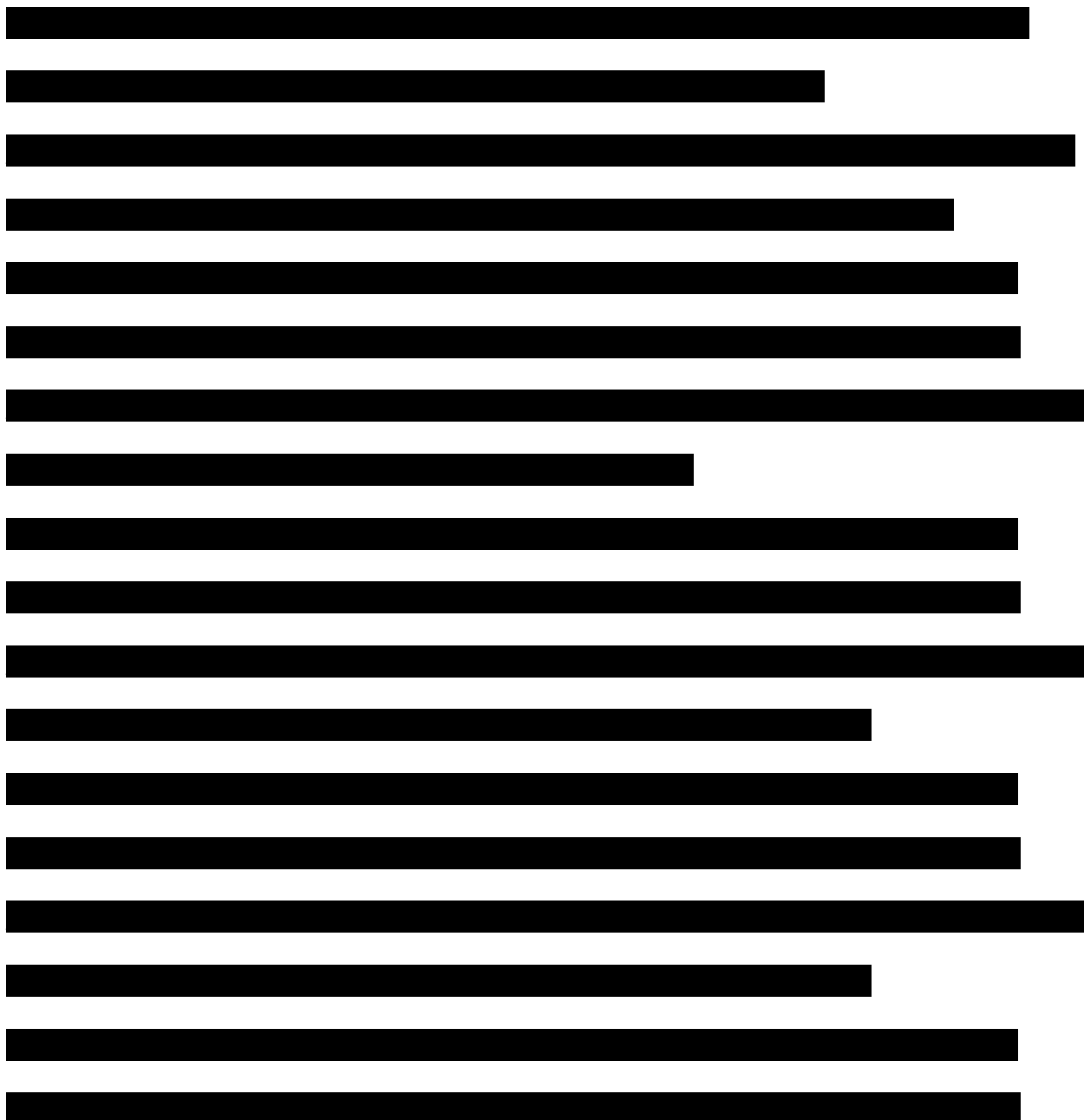
Please use the attached measure. I wish you the best with your research.

Warm regards,
 Carol Dweck

Lewis & Virginia Eaton Professor
 of Psychology
 Department of Psychology
 Stanford University
 Stanford, CA 94035

APPENDIX H
DWECK MINDSET INSTRUMENT

(Removed to comply with copyright)





APPENDIX I

Interview guide:

1. Life experiences (childhood):

- a. Please describe your life experiences as a child up to age 18, focusing on the highlights – what was good about your childhood and what was hard?
- b. Please describe the people who were most influential to you growing up.
- c. How would you characterize yourself as a student in K-12?
- d. How would you describe yourself as a person at age 18?
- e. Please describe any events, circumstances, or other people that you feel molded you significantly during those growing up years.

2. Beliefs (childhood):

- a. What was important in your home as a child?
- b. What character traits were rewarded?
- c. What character traits were discouraged?
- d. What role did faith play in your home growing up?
- e. Are there any other early values or beliefs that shaped the person you became?

3. Life experiences (adult):

- a. Please describe your life experiences as an adult, from 18 up until now, focusing on the highlights – what has been good about your life and what has been hard?
- b. Please describe the people who are most important to you now.
- c. Please describe your undergraduate and work experiences.
- d. How would you characterize yourself as a student in college?

- e. How would you describe yourself as a person now?
- f. What have you learned about life that you try to pass on to others?

4. Beliefs (adult):

- a. What is important in your home?
- b. What character traits are rewarded?
- c. What character traits are discouraged?
- d. What role does faith play in your home now?
- e. What are you most proud of?

5. Doctoral persistence:

- a. Describe your doctoral journey, with focus on the qualities within yourself that supported your own persistence until the end.
- b. Describe specific actions or program features from your institution that pushed you through setbacks.
- c. Tell me about a time when you thought you wouldn't make it. How did you?
- d. In a single word or phrase, what most helped you finish?

APPENDIX J

Reflective Journal Questions:

1. Grit

- a. What do you know about grit? Do you think grit can be developed? If so, how?
- b. Do you know anyone who you think has a lot of grit? How so?
- c. What percentage would you venture that individual grit plays in finishing a doctoral degree?

2. Mindset

- a. What do you know about a growth mindset?
- b. Do you know anyone who has a growth mindset? How so?
- c. Do you think a growth mindset can be developed? If so, how?

3. Final thoughts

- a. Do you have any further thoughts about the potential relationship between grit, a growth mindset, and doctoral persistence?

APPENDIX K

Follow-up Reflective Questions

Hello, and thank you so much for your important contributions to my research!

As I have analyzed the data, a central category has emerged that I think is significant. In looking at the experiences and beliefs/values that you have shared with me, it seems that the connecting point which may lead to the development of Grit centers around the 5 dimensions of what the Association of American Colleges and Universities (AAC&U) has identified as Personal and Social Responsibility (PSR). Since 2005, the AAC&U has sought to address this domain of what it considers an essential learning outcome of a liberal arts education. I honestly had no idea that this even existed before beginning this study! I feel this is an invaluable connection to make with this study. Below are the 5 dimensions associated with PSR (<https://www.aacu.org/node/5127>)

- I. Would you mind taking a few moments to comment on **how each of the following dimensions is evident in *your own* personal and/or professional lives?** Feel free to describe the evidence of these characteristics generally or to give specific examples that come to mind. Please don't be humble or shy! Remember your identity is shielded by a pseudonym in the study.
 1. **Striving for excellence:** developing a strong work ethic and consciously doing one's very best in all aspects of [work/life];
 2. **Cultivating personal and academic integrity:** recognizing and acting on a sense of honor, ranging from honesty in relationships to principled engagement with a formal academic honors code;
 3. **Contributing to a larger community:** recognizing and acting on one's responsibility to the educational community and the wider society, locally, nationally, and globally;
 4. **Taking seriously the perspectives of others:** recognizing and acting on the obligation to inform one's own judgment; engaging diverse and competing perspectives as a resource for learning, citizenship, and work;
 5. **Developing competence in ethical and moral reasoning and action:** developing ethical and moral reasoning in ways that incorporate the other four responsibilities; using such reasoning in learning and in life.

Lastly, an unexpected theme has emerged as a hypothesized protective factor in doctoral persistence. Brene' Brown (2012) has published research about shame and shame resilience, most notably in her book, *Daring Greatly*.

Brown (2006) defines **shame** as “an intensely painful feeling or experience of believing we are flawed and therefore unworthy of acceptance and belonging” (p. 45).

*In an academic setting, shame manifests as an overwhelming sense of not being good enough. (“I am bad/not enough”)

Shame brings with it feeling of being “trapped, powerless, or isolated” (Brown, 2006, p. 45).

Shame resilience is characterized by “empathy, connection, power, and freedom” (Brown, 2006, p. 47).

*In an academic setting, shame resilience gives students to ability to overcome mistakes. (“I am not a failure. This is just a mistake/setback.”)

Further thoughts that make me think of doctoral persistence related to shame resilience:

- “the participants did acknowledge that engaging in *self-empathy* can increase shame resilience”
- “connection was about *mutual support, shared experiences*, and the freedom and *ability to explore and create options*”
- “Power has three properties: *awareness, access to choice*, and the *ability to affect change*” [emphasis added throughout] (p. 47)

II. In light of these ideas, please answer the following, either in general terms or with specific examples:

1. In your personal life, when you make mistakes that hurt others, what actions do you take?
2. When other people in your personal or professional contexts make mistakes that hurt you, what is your thought process and reaction?
3. In an academic setting during your doctoral or previous experiences, when you have made an error or failed, how did you respond internally and externally?

Finally, a resounding message I got from the interviews surrounded the concept of personal responsibility, in the sense that, “Nobody can get this doctoral degree for me but me.” Can you briefly elaborate on this message as it relates to your own experience or mindset?

APPENDIX L

Reflection on the development of the Grit Growth Model

My husband, Tommy, suggested using the grapevine when I asked for his help in coming up with a living plant to represent the findings of my study. As soon as he said it, I knew it was the perfect choice. When I studied the grapevine on the internet briefly and wanted to learn about the roots, this is the first sentence in the first article I found: “Grapevines are **tenacious** plants with wide-spreading root systems and **persistent growth**.”

It seems that there could not be a more fitting model for this study! Furthermore, immediately following reading the article, I visited my friend, whose daughter I was planning to ask to draw the model for me. I brought my rough drawing of the model into the house with me to show her and was about to ask her to draw it. As soon as I walked in the door, before even talking to her about this task, this is what I immediately encountered in the kitchen:



I asked my friend's daughter how often her mother puts grapes out on the kitchen counter. She said, "Very rarely."

APPENDIX M

Survey Instrument Scores

Interview Participant Scores

Participant Number	Participant Pseudonym	Long-term Interest Average	Perseverance	Grit Score	Intelligence	Personality	Mindset Score
1	Holly G.	3.25	4.25	3.75	3.25	4	3.625
2	Hannah G.	4	4.5	4.25	4	3.75	3.875
3	Helen F.	3.75	5	4.375	3	2	2.5
4	Hester G.	3.75	5	4.375	4.5	3.25	3.875
5	Harrison G.	4	5	4.5	3.5	3	3.25
6	Harry	4	4.25	4.125	2	4	3
7	Heidi G.	3.75	4.25	4	4	3.5	3.75
8	Henry G.	4	3.5	3.75	4	4	4
9	Hayden G.	3.75	3.75	3.75	5	5	5
10	Hazel F.	4.5	5	4.75	2.25	3.5	2.875
11	Heather G.	4.25	5	4.625	2.5	5	3.75
12	Hezekiah G.	3.5	5	4.25	5	2	3.5
Average:		3.875	4.54	4.21	3.58	3.58	3.58

Remaining Survey Participant Scores

Participant Number	Long-term Interest Average	Perseverance	Grit Score	Intelligence	Personality	Mindset Score
13	4.5	5	4.75	5	4.25	4.625
14	2.5	3.5	3	4	4	4
15	3.75	4.75	4.25	4	4	4
16	3.75	4.25	4	4.25	3.75	4
17	3.25	4.75	4	5	4	4.5
18	3	4.5	3.75	4	5	4.5
19	3	4	3.5	4.75	4.75	4.75
20	3	3.5	3.25	4.5	4.5	4.5
21	4	4.75	4.375	2.5	2.25	2.375
22	2.5	3.75	3.125	5	5	5
23	3	3.75	3.375	4	4	4
24	4.25	4.25	4.25	2.25	3	2.625
25	4	5	4.5	5	5	5
26	3.75	4.5	4.125	4	5	4.5
27	2.25	4	3.125	3	2	2.5
28	4.75	4	4.375	5	4.75	4.875
29	5	5	5	1.75	2.25	2
30	3.5	4.5	4	3	5	4
31	3.5	4	3.75	2	4	3
32	3.75	4.5	4.125	3.75	3.75	3.75
33	4.25	4.5	4.375	4	4.25	4.125
34	3.5	4	3.75	4.5	4.25	4.375
35	3.75	5	4.375	3.75	4.75	4.25
36	2.75	3.75	3.25	5	5	5
37	4.25	4.75	4.5	5	5	5
38	3.75	4	3.875	4	4	4
39	2.75	4	3.375	4.25	4.5	4.375
40	3.25	4.75	4	1	5	3
41	3.75	4.5	4.125	4	4	4
42	3.75	5	4.375	5	5	5
43	3.5	4.25	3.875	3.5	3.75	3.625
44	3.5	4	3.75	3.75	3	3.375
45	4.25	5	4.625	3.5	5	4.25
46	3.5	4.5	4	4	4.5	4.25
47	3.75	5	4.375	4	4	4
48	3.25	4	3.625	5	3.75	4.375
49	3.5	5	4.25	5	3.5	4.25
50	4.75	4.75	4.75	2.5	4.5	3.5
51	3.75	4.5	4.125	5	5	5

APPENDIX N

Social Media Advertisement

Grit, Growth Mindset, and Doctoral Persistence

- Are you a recent Doctoral completer? (last 5 years)
- Do you want to help doctoral program leaders understand how to help other students complete?

If you answered **yes** to both of these questions, you may be eligible to participate in an educational study.

The purpose of this research is to discover what role personal characteristics such as grit and a growth mindset play in the persistence efforts of doctoral completers. Participants can help by only completing two quantitative instruments (10-15 minutes), or by volunteering for an additional interview portion (45-60 minutes) and brief written journal assignment (15-30 minutes), as well as a potential brief follow-up interview (15-30 minutes).

The study is being conducted online using the following Google form:

https://docs.google.com/forms/d/e/1FAIpQLSdA806LbSPm0InlRSvp31R4y8fKifE-ZeUXApQHdpfnF72UuQ/viewform?usp=sf_link

Melanie Hudson, a doctoral candidate in the School of Education at Liberty University, is conducting this study. Please contact Melanie at mhudson17@liberty.edu for more information.

APPENDIX O

Sample Memos

1) 4/1/19 **FACING IT:** Holly G. said on March 1, that what she passes on to others is, “You’re OK. And **you have everything you need to be ok.**” I have reflected on this statement frequently throughout the last month. Holly believes that there is something internal that people can get a hold of which causes them to be able to persist through hardship. On March 29, the world’s premier clinical psychologist and best-selling author, Dr. Jordan B. Peterson, visited Liberty and spoke at convocation about how people **face life’s challenges** and he said, “You have an unavoidable mortal burden to bear in life. **There’s no escape** from it, except to directly **confront it** and to **take it on voluntarily**. And what’s so fascinating about that – two things – one is psychotherapists of every stripe understand that this is one of the primary reasons that psychotherapy works. There is no dispute about that among all of the different psychotherapeutic schools – is that the confrontation of existential problems – voluntary confrontation – is curative...and the practical aspect of that is quite straightforward...it also indicates to you that **there is far more to you than you think** because it turns out that you have substantial problems – genuine, deep problems of malevolence and suffering, but that if you decide that you will take that on as your responsibility, that **you can put yourself together psychologically.. and you can actually solve the problems.**”

Hannah G.: “so I went to talk to a counselor and got strategies for re-attributing - cognitive behavioral therapy type of things. **Learning strategies** to overcome it is one, recognizing that it's a normal thing that a lot of people deal with. It may be representative of the reality of the situation, but it's a common experience that **you CAN deal with** is another thing. One is actually doing it and one is recognizing that **you can change it.**”

My own thought is, could it be that we are born with a certain innate level of grit, and the circumstances of our lives actually either diminish or enhance that level of grit (discouragement, despair/encouragement, hope) instead of the assumption that grit is always grown from a lower level?

4/13/19 Hannah G. gives similar life advice: “when you experience challenges, they aren't always as horrible as you think they're going to be. They get less salient over time and it's really normal to experience challenges to be upset by them. And those are things that I try to communicate to other people because I think that's what I really struggled with. We grew up in a world where we're told you should always be really successful. But the reality is people who are successful actually are better at overcoming the barriers that they received and because they can think about them more

adaptively, they can understand them as just temporary barriers.”

2) 4/5/19 Some emerging commonalities in **experience** that I have observed after 6 interviews:

Expectations growing up: Several participants at this point have expressed that their parents expected them to **participate** in sports or other activities while growing up. There were not expectations to excel or achieve a certain level of success, but the general expectation to **engage** and be involved in activities, to be productive and not idle. This supports the literature I cited that extracurricular activities are both fun and challenging, unlike school (just challenging) and free time (just fun). Extracurricular activities usually require some form of **intentional stretching** which Duckworth hypothesized develops grit. **Authoritative parenting**

Changing schools: Several participants mentioned **changing schools or moving** in the context of a hardship. However, I can see this experience as producing grit in the form of variety of exposure leading to development of a wider array of interests/passions, **openness to experience** even. Duckworth hypothesized that natural passions could lead to higher level of grit.

Experiencing personal loss: Several participants have mentioned the **personal loss** of close family or friends. While this experience may be considered universal, not particular to doctoral completers, I am interested to note that even a completer whose dissertation I have used as a model for format lost a family member during her dissertation, and last summer while I was in the depths of prospectus, I lost a close friend who was like a brother to me. Could there be something in personal loss which causes us to buckle down and face challenges/take risks/persist when faced with the experiential knowledge of the brevity of life? I know that someone I know, when receiving the news of a loss (a lifelong best friend), had as one of his *first thoughts*, “now is the time to do something in life. You either have to do it now or don’t do it at all.”

APPENDIX P

Audit Trail

- February 11, 2019: IRB approval; edited survey document to include IRB stamp
- February 12: Phone conference with Dr. Spaulding; finalized survey document
- February 12: Joined AERA seven sigs to establish contact:
- February 14: Sent recruitment letters to SIG leaders and committee members; heard back immediately with my first two volunteers
- February 15: Downloaded *Nvivo* from Liberty portal
- February 15 – 28: Sent recruitment letters to personal and professional contacts and posted on LinkedIn; contacted first two interview volunteers and scheduled phone interviews; corresponded with other interview volunteers to schedule, but difficulties finding the right time.
- March 1: Conducted first interview (Holly G.)(phone)
- March 6: Conducted second interview (Hannah G.)(phone)
- March 7: Transcribed first two interviews
- March 21: Conducted third interview (Helen F.)(phone)
- March 25: Conducted fourth interview (Hester G.)(phone)
- March 29: Conducted fifth interview (Harrison G.)(face-to-face)
- April 4: Conducted sixth interview (Harry)(phone)
- April 9: Conducted seventh interview (Heidi G.)(phone)
- April 12: Conducted eighth interview (Henry G.)(phone)
- April 14: Conducted ninth interview (Hayden G.)(phone)
- April 15 – May 5: - Transcribed and checked accuracy with participants; Analysis of interview data; memoing; *NVivo* software open coding
- May 6: Met with Dr. Spaulding for updates
- May 6 – 27: Sidetracked by travelling to house hunt for family move, vacation, daughter's college graduation, and jury duty.

- May 28: Picked up the baton again. Began researching Brene Brown's shame resilience after recent setbacks; Will send follow up questions to interview participants to explore this as a possible category.
- June 1 – 15: Analysis of interview and reflective journal data; moved emerging categories to Word documents; conducted axial coding
- June 10: Conducted tenth interview (Hazel F.)(phone)
- June 11: Conducted eleventh interview (Heather G.)(phone)
- June 11 – 15: Developed Theoretical Model and had artist sketch
- June 6 – 19: Transcribed and checked accuracy with participants
- June 20 – July 22: Moved from Louisiana to Virginia (packing, moving, unpacking)
- July 22 – Sept. 15: Data analysis; continued axial coding and began writing up findings
- Sept. 16 – Oct. 30: Distribute final Follow-up questionnaire; collect results; transcribe two interviews; code and analyze data from returned questionnaires;
- Oct. 31: Conduct interview twelve (Hezekiah G.)(face-to-face)
- Nov. 1 – 5: Transcribe and check accuracy of last interview
- Nov. 15 – 30: Selective coding and continued finalizing Grit Growth Model
- Nov. 1 – Dec. 2: Write up Chapter 4 Findings and submit draft
- Dec. 3 – 12: Rework Ch. 1 – 3 for edits
- Dec. Chapter 4 edits
- Jan. 2020 Write up Ch. 5
- Jan. 28 Submit draft of dissertation
- Feb. 2020 Finalize Grit Growth Model with artist
- Feb. 25, 2020 Final defense
- Feb. 26-28 Edits
- Mar. 1-11 Professional edit

-Mar. 12-17 Final touches

-Mar. 20 Submit to library for acceptance

APPENDIX Q

Code Count Table

Participant Number	Participant Pseudonym	Engagement codes	Expectations	Service	Loss	Personal and Academic Relationships	Faith	Passion	Flexibility	Shame Resilience	Personal and Social Responsibility
1	Holly G.	16	4	2	5	18	9	0	1	6	14
2	Hannah G.	10	11	2	0	15	9	20	4	13	29
3	Helen F.	7	7	12	15	18	12	3	1	14	36
4	Hester G.	2	9	4	4	16	5	3	1	11	14
5	Harrison G.	12	13	6	4	13	5	1	0	10	25
6	Harry	23	11	2	9	8	0	6	4	3	33
7	Heidi G.	13	13	7	3	20	1	5	2	7	19
8	Henry G.	3	7	9	4	8	8	0	2	6	28
9	Hayden G.	8	13	7	5	6	4	1	1	5	24
10	Hazel F.	19	5	5	4	8	1	0	1	6	22
11	Heather G.	5	12	6	11	6	4	2	1	5	23
12	Hezekiah G.	2	2	2	11	7	3	1	3	2	7
TOTAL		122	107	64	75	143	61	42	21	88	274

APPENDIX R

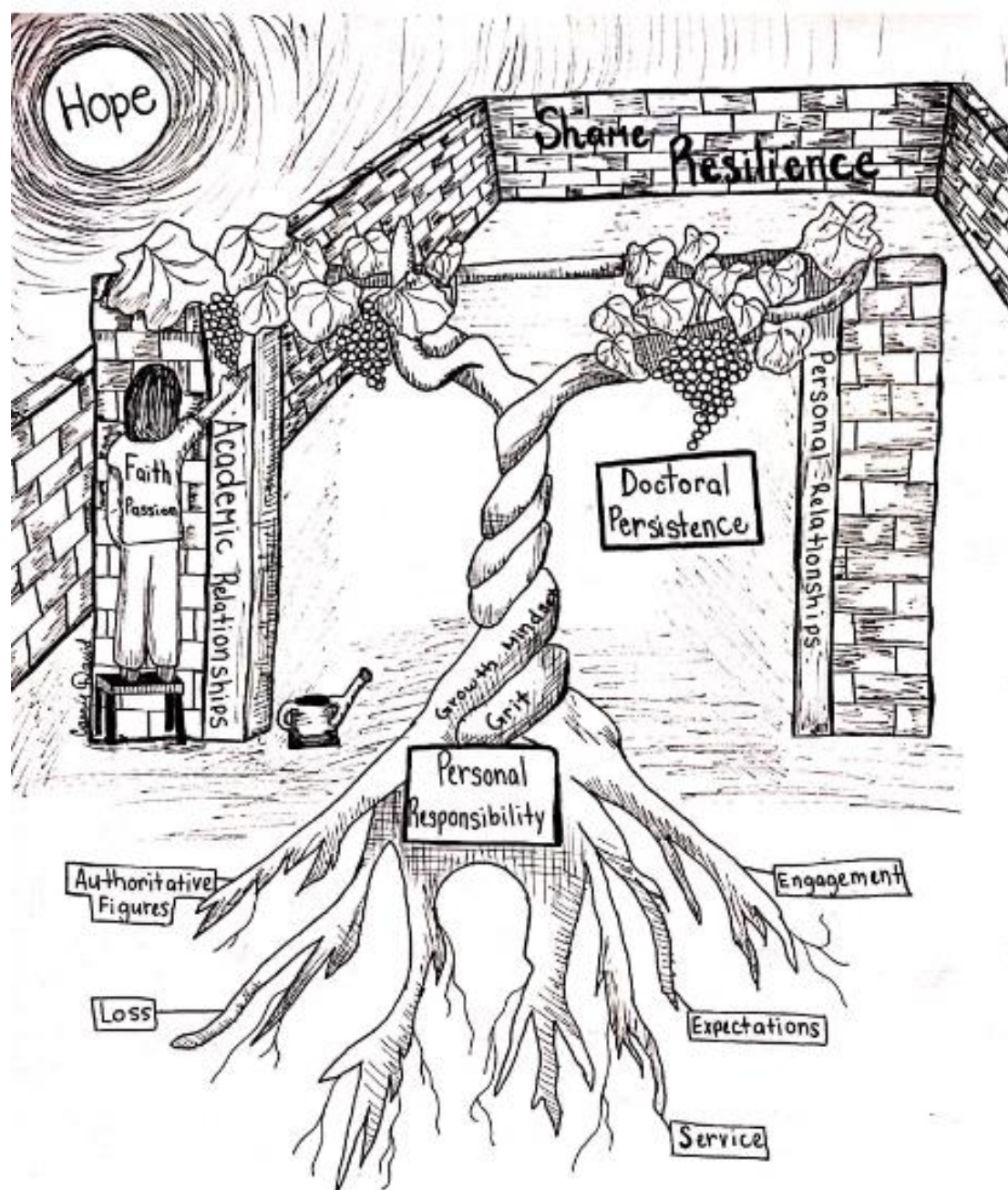
Reflective Journal Excerpt

As I identified the category of religious faith, I had to wonder if this is a result of my sampling method, through snowballing at my own school, a Christian university. However, four out of the six participants who were snowballed from outside my institution were religious, so it seems this theme was not limited to just Liberty University completers or faculty members. I am definitely curious to know if a larger sample were used for a similar study in the future, would the same theme emerge? Still, although my own religious faith is a driving force in my life, I feel I worded the questions on the interview guide objectively, so as not to “lead the witness” per se. I asked about values, beliefs, and character traits, and the theme of religious beliefs emerged organically from this line of questioning. Even though my own worldview causes me to see the world through a certain lens – one that tends toward being others-centered (on my good days) – most of my participants, both religious and non, held the same views in one form or fashion. Looking deeper into the subtle facets of their upbringing and other life experiences would probably shed light on the finer points that resulted in this mindset.

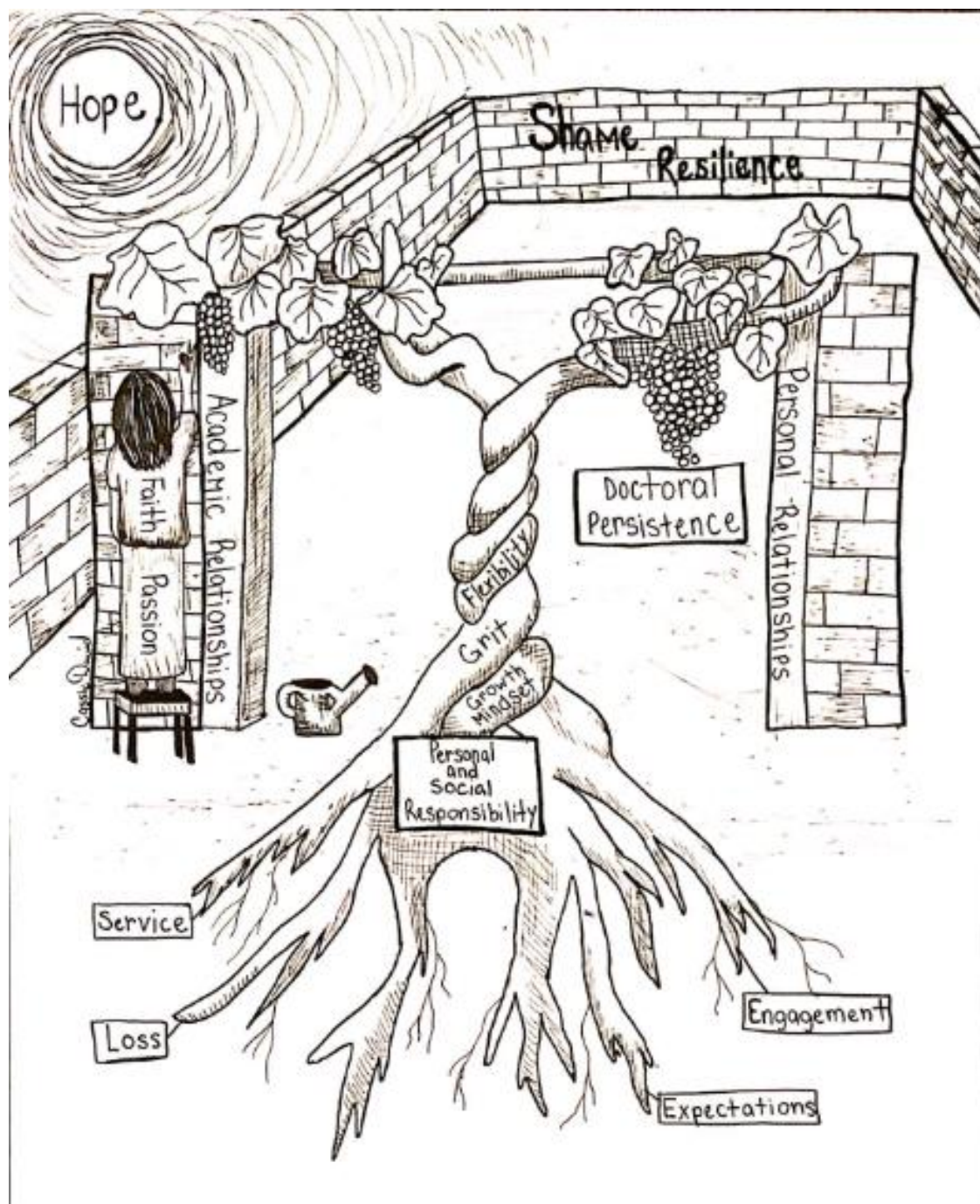
APPENDIX S

Development of the Grit Growth Model

Phase 1 by Cassie David



Phase 2 by Cassie David



Phase 3 by Arnulfo Jacinto



Phase 4 by Arnulfo Jacinto

