

THE GRIT TO NOT QUIT - AN EXAMINATION OF THE RELATIONSHIP BETWEEN
GRIT AND TEACHER RETENTION

by

Alexia Whittle Bultman

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

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ABSTRACT

The purpose of this quantitative study was to determine the level of grit that best predict years in teaching. The study sought to answer the research question, How accurately can years of teaching experience be predicted from the linear combination of grit score (meaning the consistency of interest and perseverance of effort), age, gender, level of education, grade level taught, and subjects taught? Teachers ($N = 468$) of preschool-12th grade in a large suburban Atlanta school district responded to survey questions from the Grit-S Scale questionnaire along with demographic questions. Multiple linear regression was conducted to analyze the data. The model was found to be statistically significant. The model's effect size was large ($R^2 = .54$), indicating that approximately 54% of the variance of criterion variable can be explained by the linear combination of predictor variables. The null hypothesis was rejected, and it was concluded that there was a statistically significant predictive relationship between the years of teaching experience and the linear combination of grit, age, gender, level of education, grade level taught, and subjects taught. Further analysis of the coefficients revealed that age, grit, and education were statistically significant in predicting teaching experience. Future research is needed to consider how the concept of grit manifests in different populations, how grit is tested and measured using different instrumentations, and to determine the extent to which grit predicts retention.

Keywords: teacher retention, teacher attrition, persistence, grit

Dedication

This paper is dedicated to those who chose to circle around me, both personally and professionally. The Good Lord knows it has not always been easy. To Jonathan, thank you for sticking by my side and always supporting me. You never once made me feel badly for being driven and strong-willed. To my children, Berkley and Major, you are my greatest accomplishment, and watching you grow into the people God designed has brought me so much joy. To my parents, Mike and Vickie, I would be nothing without your love, support, and wisdom. To my friends and colleagues, Proverbs 27:9 reads: “A sweet friend refreshes the soul.” Your love, encouragement, and unending (and often inappropriate) humor continually refreshes me. For me, it has not all been about the students. My colleagues became my friends, and you have helped cultivate in me a perseverance of effort and consistency of interest in education. It is and will always be an honor to work beside you in the trenches. To all my former students, I was so blessed by you and in so many ways.

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CHAPTER ONE: INTRODUCTION

Overview

The purpose of this quantitative, correlational study was to determine the level of grit and combination of demographic factors which influence teacher retention in a suburban Atlanta school district. In Chapter One, the researcher provides a background on the following topics: teaching experience, attracting new teachers to the field, and grit. Included in the background is an overview of the theoretical framework for this study. In the problem statement, the researcher examines the scope of recent literature on this topic. The purpose of this study is followed by the significance of the current study. Finally, the research question is introduced, and definitions pertinent to this study are provided.

Background

When seasoned teachers leave the profession, they leave with years of experience, wisdom, content knowledge, and effective pedagogical practice (Carver-Thomas & Darling-Hammond, 2017; Sutcher et al., 2016). Various studies have shown that extensive teaching experience has a positive impact on student learning and achievement (Fischer et al., 2018; Ladd & Sorensen, 2016) and that with greater teaching experience comes greater teaching skill (Kini & Podolsky, 2016). Simply recruiting and hiring new teachers to replace these openings, however, will not fill this gap if low retention rates remains the same. Amidst the departure of new and experienced teachers, teacher education researchers are attempting to determine ways to recruit highly qualified individuals who will stay in the profession.

Attracting Teachers to the Field

The often unobservable and unquantifiable results of teachers' work make it extremely challenging to attract and retain new teachers to the field (García & Weiss, 2019). The career

development of preservice and beginning teachers has been broadly explored over the last several decades (Brookhart & Freeman, 1992; Ewing & Smith, 2003; Malderez et al., 2007; Mori, 1965; Richardson & Watt, 2005; Rinke, 2008; Wang, 2004; Watt & Richardson, 2007, 2008; Zhang & Zeller, 2016). The literature on preservice teachers, their motivation to enter teaching, and their potential persistence in the field is extensive, most of which has been driven by the desire and need to increase teacher retention (Guarino et al., 2006; Heinz, 2015). The positive correlation was found when there was teacher education program persistence which was then extrapolated to classroom persistence. It has been found that strong teacher education programs, mentorship in the first years of teaching, and administrative support lead to greater retention rates (Guarino et al., 2006; Podolsky et al., 2016; Vagi et al., 2019). Other limiting factors must exist as teacher retention issues continue to plague schools around the world (Organization for Economic Co-Operation and Development, 2009; Sutchter et al., 2016).

While the topic of keeping teachers in the classroom has been widely discussed, little consideration has been given to the type of teacher most likely to stay in the classroom. Chiong et al. (2017) suggested that examining the motivations of individuals who choose to enter teaching may lead to more effective recruitment and retention efforts. Attracting individuals with the “right motives” may lead to the recruitment of teachers more committed to the profession (Sinclair et al., 2006). Richardson and Watt (2010) also proposed that the most persistent teachers may be those with specific motivational profiles. Similarly, Robertson-Kraft and Duckworth (2014) maintained that certain identifiable teacher traits or characteristics could possibly be linked to persistence. Potentially, the teachers who stay in the profession share common characteristics.

Grit

The demands of teaching are considerable and constantly shifting based on political and societal controls. Most teachers enter the profession based on a set of personal beliefs, which are often intrinsic, altruistic, or extrinsic in nature. The beliefs and motivations of why one entered education are often challenged once in the classroom, as evidenced by high levels of annual attrition (Dassa & Derose, 2017; Sutchter et al., 2016). The beliefs or motivators for choosing teaching as a career, however, may not be enough to build and sustain committed teachers who persevere despite the demands of the profession.

Grit, a noncognitive motivation-based trait, is defined as “the perseverance and passion for long-term goals” (Duckworth et al., 2007). The basis of the theory of grit is that certain individuals have a quality (grit) which enables them to navigate struggles and overcome adversity to achieve long-term goals. Numerous researchers have emphasized the significance of grit within the context of teaching and education (Argon & Kaya, 2018; Duckworth & Quinn, 2009; Fabelico & Afalla, 2020; Robertson-Kraft & Duckworth, 2014; Shechtman et al., 2013; Usher et al., 2019). If grit has the potential to serve as a predictor for success and perseverance in such a diverse context, it is important to explore how grit within teachers impacts retention.

Problem Statement

The problem explored in this study was that teacher retention has been, and continues to be, a serious problem for school systems across the United States. Approximately 44% of all U.S. teachers will leave the profession after only 5 years in the classroom (Ingersoll et al., 2018), which is an increase from the 30% reported by the U.S. Department of Education’s National Commission on Teaching and America’s Future in 2010. According to Carver-Thomas and Darling-Hammond (2017), the turnover rate of teachers in Title I schools and schools serving

large minority populations was 50%–70% higher in comparison to more affluent schools.

Carver-Thomas and Darling-Hammond asserted there were higher shortages in the areas of math, science, special education, English language development, and foreign languages, which are content areas more difficult to fill. Low teacher retention is widespread and not only places a financial burden on school districts to recruit and train new teachers, but also negatively affects student achievement. Researchers have suggested teaching experience has a positive impact on student learning and achievement (Chase, 2000; Huang, 2009; Johnson & Birkeland, 2006; Sutcher et al., 2016). Kini and Podolsky (2016) reviewed 30 research studies over the last 15 years that were used to analyze teaching experience and its effect on student achievement. Their findings affirmed a positive association between teaching experience and student achievement, supporting the idea that public education is dependent on the development and continuation of a highly experienced and qualified teaching force.

Researchers have examined teacher retention. Contextual influences are often highlighted in the teacher retention literature, yet the problem of low teacher retention not only persists, but also continues to worsen (Darling-Hammond et al., 2018). In their work on teacher identity development, Hamman et al. (2010) addressed the belief that for “new teachers who remain in the field, some factor must act to insulate them from the difficulties created by nonsupportive administrators, cultural differences between themselves and their students, and limited resources” (p. 1358). Previous researchers have correlated grit with persistence in higher education (Duckworth et al., 2007; Duckworth & Quinn, 2009), and studies on grit level in teachers is limited in current research (Robertson-Kraft & Duckworth, 2014). Grit may be an insulating factors, which was suggested by Hamman et al. (2010). Results of this study were influenced by grit levels identified by teachers currently in the classroom, and the researcher

provides recommendations for effective recruitment strategies to attract people into the teaching profession who are more likely to be insulated from difficulties and persist. The problem is that the literature has not fully addressed the level of grit and combination of demographic factors influencing teacher retention.

Purpose Statement

The purpose of this quantitative, correlational study was to add to the literature regarding factors that lead to higher teacher retention but have not yet been explored in the literature. Data were collected from a sample of approximately 468 teachers within an Atlanta school district. The researcher determined the level of grit and combination of demographic factors that influence the retention of general and special education teachers in preschool-12th grade teaching in a large suburban Atlanta school district. The predictor variables of this study were grit score, age, gender, level of education, grade level(s) taught, and subject(s) taught (Brace et al., 2009; Duckworth et al., 2007; Duckworth & Quinn, 2009; Robertson-Kraft & Duckworth, 2014). Grit, the perseverance and passion for long-term goals, was measured using the Grit-S Scale (Duckworth & Quinn, 2009). Consistency of interest is described as the tendency to maintain goals and interest over long periods of time, while perseverance of effort refers to an individual's tendency to work hard in the face of setbacks or obstacles (Duckworth et al., 2007; Duckworth & Quinn, 2009). Both consistency of interest and perseverance of effort are subcategories of the Grit-S Scale. Demographic factors, such as age of the participant and level of education, were also assessed (see Appendix A). Participant age was an open-ended entry. Male, female, or prefer not to say were provided as gender options. The highest level of education was itemized as Bachelor's Degree (e.g., BA, BBA, and BS), Master's Degree (e.g., MA, MS, and MEng), Education Specialist Degree (e.g., Ed.S), Professional Degree (e.g., MD, DDS, JD), and

Doctorate (e.g., PhD or EdD). Survey respondents denoted the current grade level(s) taught by selecting choices listed from preschool through 12th grade. Subject(s) taught was grouped by content similarity and defined as the following: Math, English/Literature/Reading, Science/Physics/Biology, History/Social Studies/Economics, Business/Finance/Accounting, Music/Theater/Art, Special Education, and Other. The criterion variable for this study was teacher retention, which is defined as years of classroom experience.

Significance of the Study

The significance of this study was that the researcher better understands the effect of grit on teacher retention. The researcher examined the relationship between grit and years of classroom experience, ranging from 1 to 30 years and up. If teachers with greater classroom experience demonstrate higher levels of grit, a noncognitive motivation-based trait, the researcher can suggest that grit level is predictive of teacher persistence. Through these findings, the researcher may provide valuable information to teacher education programs and higher education institutions and ultimately provide insight on recruitment strategies that will attract individuals with specific motivational profiles or characteristics inclined to persistence, thus potentially increasing teacher retention (Richardson & Watt, 2010; Robertson-Kraft & Duckworth, 2014; Sinclair et al., 2006).

According to Ingersoll et al. (2018), approximately 44% of all U.S. teachers will leave the profession after only 5 years in the classroom. School and district leaders across the country consistently struggle to keep qualified teachers in the profession, as 25%–50% of all new hires are replaced every 5 years, depleting both financial and human capital (Carver-Thomas & Darling-Hammond, 2017; Ingersoll, 2010; Ingersoll & Smith, 2003; NCTAF, 2010; Rinke, 2008). Researchers have demonstrated that teaching experience positively impacts student

learning and achievement (Chase, 2000; Huang, 2009; Johnson & Birkeland, 2006; Kunter et al., 2013). Effective educators know how understanding educational best practices and pedagogy frequently comes from the trial and error of classroom implementation after years of practice (Podolsky et al., 2019). Persistence in the field is critical to fine-tuning educational practices. When educational practices are deficient, student outcomes are negatively affected (Darling-Hammond et al., 2020).

Researchers have suggested different reasons for why teachers choose to leave the profession; however, the motivations for teachers who persist in the profession are unclear. External factors such as nonsupportive administration, student discipline, inadequate planning time, lack of resources, and poor teacher preparation programs are frequently cited in the teacher retention literature as influences leading to higher attrition rates (Geiger & Pivovarova, 2018; Ingersoll & Strong, 2011; Ingersoll, 2012; Ingersoll et al., 2018; Worth & De Lazzari, 2017). Conversely, little is known about the effects of internal factors, personal-level qualities, teacher retention, and attrition. Hamman et al. (2010) theorized that, despite challenges, those who remain in the profession must possess some internal, insulating quality which allows them to persist. Richardson and Watt (2010) suggested that teachers with certain internal motivational profiles were more likely to be retained. Teacher grit was suggested as one of the possible insulating or buffering traits held by persisting teachers who continually overcame the rigors of the profession (Duckworth & Quinn, 2009; Robertson-Kraft & Duckworth, 2014).

Additionally, Duckworth and Quinn (2009) suggested that teacher grit was associated with improved student outcomes, further necessitating examination of the relationship between grit and teacher retention. To support and sustain maximum student growth, teachers must persist in their professional practice. There has been a heavy focus on the use of the Grit Scale for

academic achievement among students, but there is a lack of current literature on teacher outcomes, such as perseverance and retention (Robertson-Kraft & Duckworth, 2014). Teaching is difficult work, and investigating the characteristics and traits of those teachers who persist in the profession despite such highly stressful conditions is critical in addressing the problem of teacher retention. The results of this study may impact district hiring practices by identifying and recruiting applicants who have favorable characteristics for sustainability within the teaching profession. Through the results of this study, the researcher will add to and build on previous studies by investigating the relationships between grit and demographic factors as they relate to teacher retention within a suburban Atlanta school district.

Research Question

In this study, the researcher conducted research on grit and how it correlates with teacher persistence. Due to low teacher retention rates across the country and the high cost associated with teacher turnover, teacher education programs and school districts are searching for ways to recruit not only highly qualified individuals, but those who will stay. Grit is the passion and perseverance for long-term goals (Duckworth et al., 2007; Duckworth & Quinn, 2009). The aim of this study was to examine the relationship between grit and years of classroom experience for those currently persisting in the field.

The research question for this study was based on the measurable grit level established by Duckworth and Quinn's Grit-S Scale (2009):

RQ1: How accurately can years of teaching experience be predicted from the linear combination of grit score (meaning the consistency of interest and perseverance of effort), age, gender, level of education, grade level taught, and subjects taught?

Definitions

1. *Demographic variables* - When attempting to predict human behavior, more than one predictor variable is useful, as human thoughts, emotions, and actions are often influenced by a combination of several factors (Brace et al., 2009). Demographic information can be an important influencing factor in decision making, which is why it was included in this study. The demographic variables considered for this study were the following: age and gender of the teacher, level of education, grade level(s) taught, and subject(s) currently taught.
2. *Grit* - Grit is the consistence of interest and perseverance of effort that one has for achieving long term, meaningful goals. Grit is often referred to as the passion and perseverance for long-term goals (Duckworth et al., 2007; Duckworth & Quinn, 2009).
3. *Teacher attrition* - Teacher attrition is the rate at which teachers leave the profession during a given school year (Dupriez et al., 2016).
4. *Teacher retention* - Teacher retention refers to retaining teachers in the same school each year (Lochmiller et al., 2016).
5. *Teacher turnover* - Teacher turnover is defined as the “change in teachers from one year to the next in a particular school setting” (Sorensen & Ladd, 2018, p. 1).
6. *Years of classroom experience* - Teacher retention was the criterion variable for this study. Teacher retention is based on years of classroom experience, or the number of years the participant has taught up until the time of the study. Teacher retention was measured using introductory questions added to the Grit-S Scale. The introductory questions assess demographic data, such as age, the number of years the participant has taught up until the point of the survey, and grade level taught.

CHAPTER TWO: LITERATURE REVIEW

Overview

An in-depth review of research was conducted to identify studies in which researchers examined teaching as a career, grit, and teacher persistence in the field. To provide context and overview, the researcher discusses the current literature pertaining to the study in this chapter. In the first section, the researcher examines the theories that support the conceptual framework, followed by a presentation of consistent themes, and a synthesis of the existing literature pertaining to and associated with teacher retention. The presentation of existing literature is presented in the following categories: (a) teacher retention and persistence, (b) cost of teacher loss, and (c) teacher grit and student outcomes. Subsections are included within these categories to present literature on more specific topic areas. A gap within the literature is identified following the review of current research, thus providing a focused area of need for this study.

Theoretical Framework

Grit Theory

The theory of grit has recently emerged and gained popularity in both business and educational domains (Duckworth et al., 2007; Jachimowicz et al., 2018; Kannangara et al., 2018). Different versions of the Grit Scale have been used to conceptualize, assess, and measure grit (Cormier et al., 2019; Duckworth et al., 2007; Duckworth & Quinn, 2009). Grit, a noncognitive motivation-based trait, is defined as “the perseverance and passion for long-term goals” (Duckworth, et al., 2007). The basis of the theory of grit is that certain individuals have a quality (grit) which enables them to persevere in achieving a goal, specifically long-term, despite facing adversities or struggles. These individuals are “grittier” than others. Grit, or being rooted in endurance, is perseverance and resilience quantified and is considered as part of a growth

mindset (Duckworth, et al., 2007). While some are born with grit within their natural personality, others can learn grit to stay motivated in the face of adversity (Robertson-Kraft & Duckworth, 2014). The theory of grit does not originate from one specific established theory but was developed from a variety of previous theories that examine how talent and achievement affect one other, as well as personality and achievement (Ravitch & Riggan, 2017).

Within persistence literature, the topic of grit has gained momentum and recognition and has quickly become a pillar within the persistence framework. Grit mimics Edward Webb's "persistence of motives" which was developed in 1915. Webb (1915) outlined the "persistence of motives" as the consistency of action resulting from deliberate volition or will (p. 60). According to Duckworth et al. (2007), grit has been found to predict retention in West Point graduates, GPA amongst Ivy League undergraduates, and final round ranking in the Scripps National Spelling Bee and is viewed as another form of persistence. In other research, the Grit Scale was used by researchers to measure academic achievement examining GPA (Cormier et al., 2019; Duckworth et al., 2007). Although the Grit Scale was used to measure student academic achievement, there is a lack of research on the use of the Grit Scale for teacher outcomes, such as perseverance and retention.

In addition to the consistence of interest and perseverance of effort (Duckworth & Quinn, 2009), Duckworth (2013) explained that the reason individuals with grit often fulfill their goals is due to self-efficacy, valuing the goal, and cost. While measuring these aspects of grit using the Grit Scale, Duckworth et al. (2007) explained that to measure grit, the following criteria must be met: (a) evidence of psychometric soundness, (b) face validity for adolescents and adults pursuing goals in a variety of domains, (c) low likelihood of ceiling effects in high-achieving populations, and (d) a precise fit with the construct of grit.

Although questions have been raised about grit and its relationship to indicators of success (Crede et al., 2016; Jachimowicz, et al., 2018), numerous researchers have emphasized the significance of grit within the context of teaching and education (Argon & Kaya, 2018; Duckworth et al., 2007; Robertson-Kraft & Duckworth, 2014; Shechtman et al., 2013; Sugiyanto et al., 2019). If measuring grit can help predict success and perseverance in such a diverse context, it is important to explore how grit within teachers affects retention. More specifically, grit can help researchers create a framework to explore motivations and persistence within the teaching profession. For this reason, grit has been selected as an appropriate model for this study.

Related Literature

Teacher Retention and Persistence

Policymakers and educators recognized a need to improve teacher retention rates due to low teacher retention and a shortage of teachers throughout the United States (Lochmiller et al., 2016; Zhang & Zeller, 2016). In a study on teacher shortages in the United States, the issue of ongoing teaching position vacancies was presented as a reason for shortages (Aragon, 2016).

Aragon described the following three main points pertaining to teacher shortages:

- Teacher shortages within states are impacted by the education policies of that state.
- Teacher shortages are often restricted to certain subject areas such as math, science, and special education.
- Teacher shortages are often confined to schools with certain characteristics, such as urban, rural, high-poverty, high-minority, and low achieving schools, which have ongoing staffing challenges.

As a means of addressing the issue of teacher shortages, states have used strategies such as alternative certification, financial incentives, induction and mentorship, evaluation and

feedback, and teacher leadership to address the problems of teacher turnover, retention, and staffing. Policymakers and educators have found that lower retention rates were associated with lower academic achievement among students, which led to a need to address teacher retention (Lochmiller et al., 2016; Moore et al., 2018). The ability to support high-quality educators in schools is not due to a shortage of incoming teachers but the retention of teachers (Billingsley & Bettini, 2019; Hanushek, 2007; Ingersoll & Smith, 2003; The National Commission on Teaching and America's Future, 2010). Attrition, or the decision to leave the teaching profession, was described as one of the driving contributors to the shortage of effective teachers both in the United States and globally (Geiger & Pivovarova, 2018).

Researchers have explored how teacher attrition relates to retention. Oke et al. (2016) explored the factors related to teacher attrition and retention in schools. One of the authors' goals was to better understand the factors that influenced teacher attrition and retention in Nigeria. Oke et al. determined that the causes of teacher attrition included inadequate salary, poor working conditions, administrative leadership style, and encouraging teachers to work and remain teaching in rural environments. The authors described both the direct and indirect impact of attrition. The direct impact of attrition was that high turnover represents a degree of organization failure in terms of human relations, which reflects the weaknesses of the organization. The indirect impact of attrition was collateral effects of increased turnover, which often resulted in overall diminished productivity and required remaining staff members to work harder or longer due to others having left the organization.

Regarding the factors that help in teacher retention, Oke et al. (2016) identified and described the remuneration of teachers and leadership styles as relevant to retaining teachers. Based on their review of the literature, Oke et al. explained that management issues must be

addressed for teachers to retain, such as factors that impact teacher education and training. Based on this finding, Oke et al. recommended that educational leaders address staff training, development programs, and curricula enrichment.

Regarding teacher attrition, Gulosino et al. (2016) investigated the influence of balance within a competing values framework and school academic success as associated with teacher retention. Gulosino et al. explained that there have been several studies on the topic of teacher retention and attrition and described how the factors related to teacher attrition and retention that were explored by researchers fall into the category of either organizational/contextual factors or teacher-specific factors. The organizational/contextual factors noted by Gulosino et al. were the following: compensation structure, mentoring programs and internship status, accountability pressures, district hiring practices, the school sector in which the teachers work, and the student population that the teachers serve. Conversely, the teacher-specific factors highlighted by Gulosino et al. were age, teaching experience, certification status, and demographic characteristics such as gender and ethnicity.

The factors described by Gulosino et al. (2016) are relevant to the current study because some of the mentioned teacher-specific factors, such as age, teaching experience, and demographic characteristics, were included as variables. The organizational/contextual factors within the study both at the district and the school level must be considered as potentially specific to the district and potentially different in other districts. The organizational/contextual factors may also be considered to account for variation in the data if it was determined that there was substantial variation in the results obtained within the district in the current study.

Gulosino et al. (2016) used the Teaching, Empowering, Leading and Learning (TELL) questionnaire. The questionnaire was based on eight research-based constructs to help inform

policymakers and practitioners in the following aspects:

- Time: available time to plan, to collaborate, to provide instruction, and to eliminate barriers to maximize instructional time during the school day
- Facilities and Resources: availability of instructional technology, office, communication, and school resources to teachers
- Community Support and Involvement: community and parent/guardian communication and influence in the school
- Managing Student Conduct: policies and practices to address student conduct issues and ensure a safe school environment
- Teacher Leadership: teacher involvement in decisions that impact the classroom and school practices
- School Leadership: the ability of school leadership to create trusting, supportive environments, and address teacher concerns
- Professional Development: availability and quality of learning opportunities for educators to enhance their teaching
- Instructional Practices and Support: data and support available to teachers to improve instruction and student learning. (Gulosino et al., 2016; New Teacher Center, 2013)

Teacher retention refers to retaining teachers in the same school each year (Lochmiller et al., 2016). Reduced rates of teacher retention are often due to high mobility and/or high attrition (Lochmiller et al., 2016). Mobility, as related to teacher retention, is when teachers relocate to different schools (Lochmiller et al., 2016). Attrition refers to teachers leaving the public school system (Lochmiller et al., 2016). Issues of mobility and attrition, including reasons and motivations for leaving the school or public school system, are important considerations as they

pertain to teacher retention (Lochmiller et al., 2016).

School districts across the country face hardship, not only because of financial constraints due to economic variability and testing mandates put forth to ensure and inspect high-quality education, but poor teacher retention as well. Regardless of teaching subject or concentration (AAEE, 2009), every 5 years, between 25%–50% of all new hires are replaced in school districts nationwide (Carver-Thomas & Darling-Hammond, 2017; Ingersoll, 2010; Ingersoll & Smith, 2003; NCTAF, 2010; Rinke, 2008), placing a further burden on school district leaders and teachers. In addition, teaching is rated as one of the most stressful professions (Kyriacou, 2000; Newberry & Allsop, 2017; Skaalvik & Skaalvik, 2015). Lambert et al. (2006) characterized teaching as historically being an “emotionally taxing and potentially frustrating” profession. There is a teacher exodus, and the rate at which it happens is alarming (Hanushek, 2007; Ingersoll & Smith, 2003; Sutchter et al., 2016). Forty-four percent of all teachers will leave the profession within the first 5 years of teaching due to stress, lack of mentorship, and a combination of other factors (Dassa & Derose, 2017; Ingersoll et al., 2018). Districts in need of teachers should focus on how they can train and retain the teachers they have already recruited, not just how to recruit and hire new ones. Retaining qualified teachers has been a concern for both educational and political leaders for over 3 decades now, continuing the need for extensive research into the problem (Ingersoll et al., 2018). Specifically, researchers have suggested that although the issue of teacher retention is important as it pertains to the challenge of teacher turnover and maintaining effective teachers, the scope of the teacher retention challenge remains poorly defined (Papay Bacher-Hicks et al., 2017).

Recognizing the importance of identifying factors related to teacher turnover, Moore et al. (2018) utilized a nonexperimental, retrospective research design to investigate the factors

empirically tied to teacher retention. The study was conducted in 11 major urban districts within the 1,200 independent school districts in Texas. The researchers explained that the 11 districts explored in the study were selected because they employed approximately 61,500 teachers and included approximately 1,400 schools (16% of Texas schools). The data collected and analyzed were from the 2014-2015 Texas Academic Performance Report, which was used to identify specific factors that were significantly associated with teacher retention in the 11 urban Texas districts. Through a regression model analysis of the data, the researchers identified four significant factors related to the retention of urban teachers in Texas. The four factors were district special education participation percentage, district teacher tenure average, new teachers, and the percentage of students identified as at-risk. Based on these findings, Moore et al. concluded that there was a need to find new ways to develop, equip, and retain urban teachers in Texas. They also recommended that additional research be conducted to understand the relevance and effect of the factors identified in the study and whether these factors could be generalized to other urban districts to better understand and support urban teacher retention.

Factors Affecting Retention

The first phase in becoming a teacher is often the initial motivation(s) to teach, followed by entry and successful completion of a teacher education program. Many teacher education graduates never enter a classroom (Kyriacou & Kunc, 2007), while many of those who do teach will leave before their 6th year (Hanushek, 2007; Ingersoll et al., 2018; Ingersoll & Smith, 2003). Thus, factors affecting the retention of preservice and beginning teachers have been examined extensively (Brookhart & Freeman, 1992; Ewing & Smith, 2003; Geiger & Pivovarova, 2018; Ingersoll & Strong, 2011; Malderez et al., 2007; Mori, 1965; Richardson & Watt, 2005; Rinke, 2008; Robertson-Kraft & Duckworth, 2014; Wang, 2004; Watt & Richardson, 2007, 2008).

Although there is not one single thread explaining why teachers do not persist in the profession, factors such as age, experience, new teacher supports, and administrative leadership style have been examined in relation to how they relate to retention (Ingersoll & Strong, 2011; Ingersoll et al., 2018; Worth & De Lazzari, 2017). Other researchers have explained that, on a global level, other factors related to teachers' decision to leave the profession include low salaries, poor quality of teacher preparation programs, overwhelming workload, and poor working conditions (Geiger & Pivovarova, 2018). In the subsections below, literature on different factors related to teacher retention are further described.

Age, Race, and Gender

While age and experience play an important role in professional persistence, research that connects factors such as race, ethnicity, and gender to retention has continued to increase over the last 2 decades. Younger and older teachers, in comparison to their middle-aged counterparts, are more likely to leave the profession, as well as those with less experience (Carver-Thomas & Darling-Hammond, 2017). While there has been over a 7% increase in the number of nonwhite teachers over the last 30 years (Ingersoll et al., 2017), the nation's teacher workforce continues to be predominantly White and female and has changed little over the last 30 years (Ingersoll et al., 2018; NCTAF, 2010). Furthermore, nonwhite teachers leave the profession at higher rates than White teachers, negating more recent efforts to recruit and retain racially diverse teachers.

Entry Route

Podolsky et al. (2016) found that beginning teachers "who had received comprehensive preparation were two-and-a-half times less likely to leave teaching after 1 year in the profession than teachers with little or no pedagogical training or practice teaching" (p. 19). While most who enter the teaching profession do so through traditional routes, alternative entry methods have

become more prevalent. These alternative routes do not always provide the most persistent teachers (Zhang & Zeller, 2016). Those who have been prepared to teach through alternative certification programs are 25% more likely to leave teaching than those who entered traditional certification programs (Carver-Thomas & Darling-Hammond, 2017). Boyd et al. (2006) also found that those who enter teaching through early-entry routes, such as Teach for America, are more likely to leave the classroom than those from traditional, 4-year programs, suggesting lengthier and more robust preparation leads to increased persistence.

Consistent with Boyd et al. (2006) and Carver-Thomas and Darling-Hammond (2017), Zhang and Zeller (2016) also investigated the relationship between teacher preparation and retention as a factor related to teacher attrition and teacher shortages in the United States. Zhang and Zeller noted that exploring the topic of teacher preparation as it relates to teacher retention was important due to a need for research to inform policy decisions, which was important for those policy decisions centered on the factors that most impact teachers' decisions to remain in or leave the teaching profession. Zhang and Zeller also highlighted that, particularly since the mid-1980s, the number of alternative teacher certification programs has increased to address the problem of teacher shortages throughout the United States. In their study, Zhang and Zeller explored the long-term retention effects of alternative teacher preparation programs and traditional teacher preparation programs to determine whether a difference existed between teacher preparation and teacher retention between the two preparation programs. In describing the types of teacher preparation programs, the researchers presented the following three routes as the most common way individuals enter a teaching career:

- Completion of a regular, accredited, baccalaureate-level college or university-based teacher education program.

- Completion of a lateral entry alternative licensure program which allows qualified individuals to obtain a teaching position and begin teaching immediately. The individual would earn a license as they teach and must complete specific courses towards their licensure within a specified time. Individuals considered for lateral entry are those who have a bachelor's degree from an accredited college or university.
- Completion of a special alternative licensed program which has been designed to help individuals with noneducation majors transition into a teaching career.

In analyzing the different types of teacher preparation programs, Zhang and Zeller (2016) noted that understanding teacher preparation in addition to the level of education received by the teacher is crucial because a teacher's level of preparation influences their satisfaction in teaching, which ultimately affects their decision to remain or leave the profession. In their qualitative study, Zhang and Zeller identified and interviewed 60 participants in North Carolina. Of the 60 study participants, 22 were regularly prepared teachers, 20 were lateral entry teachers, and 18 were teachers who were prepared through the NC Teach program. To measure teacher retention, in addition to the initial interviews with the 60 participants, Zhang and Zeller conducted three follow-ups with the participants to determine whether they were still teaching.

In addition to the factors of teacher preparation and retention, Zhang and Zeller (2016) measured nine variables, which they analyzed qualitatively and quantitatively to determine their association with teacher retention. The nine variables measured by Zhang and Zeller (2016) were age, career plans that were expressed during the first year of teaching, having children, ethnicity, gender, school level taught (i.e., elementary, middle school, high school), marital status, parents' occupation, and type of preparation. The researchers used NVivo 7 for the qualitative analysis in the study to generate matrices for each of the target variables. The transcript data from the

participant interviews were analyzed by identifying patterns in responses and characteristics as related to the retention status of the respondents (Zhang & Zeller, 2016). The results of the study showed that none of the background variables (i.e., age, having children, ethnicity, gender, school level taught, marital status, or parents' occupation) had an impact on teacher retention. Among those who left the teaching profession, more were prepared by lateral entry than by the other two teacher preparation routes (Zhang & Zeller, 2016).

Zhang and Zeller (2016) also determined that participants who entered the profession through lateral entry expressed being less prepared to teach in the way they were expected to teach. Lateral entry teachers also expressed that teaching was unlike what they expected, and they experienced greater challenges overall. Based on these findings, the researchers concluded that although short-term retention rates of teachers prepared in alternative routes may be comparable to those prepared in traditional routes, long-term retention is worse for teachers prepared in alternative routes than those compared in traditional routes. Zhang and Zeller explained that additional studies were needed to understand how different types of schools and school environments may be related to the retention of lateral entry teachers. They also explained that many lateral entry teachers were more likely to work in disadvantaged schools and that, for this reason, preparation type may be only partially responsible for higher attrition among lateral entry teachers.

Another factor related to retention noted by Zhang and Zeller (2016) was the individual differences between teachers who have experience and have been trained through traditional preparation versus lateral entry students who have no experiential basis. Each of these potential factors described by Zhang and Zeller related to teacher retention, in addition to teacher

preparation type, was considered in the current study as potential factors impacting teacher retention and/or persistence as measured by grit.

Compensation and Salary

Another factor related to issues of teacher retention is low salary, particularly in comparison to fields with the same educational requirements (Podolsky et al., 2016). There was a lack of consensus among researchers regarding the impact of improved compensation and incentive interventions on teacher retention (Colson & Satterfield, 2018). For example, with factors such as compensation and salary, researchers found that there were inconclusive findings between voluntary strategic compensation plan participation rates (Colson & Satterfield, 2018). In other words, when compared to strategic teacher compensation, the traditional salary scale was not found to produce statistically significant differences in the retention of highly effective teachers. In their study conducted in the state of Tennessee, Colson and Satterfield determined that voluntary strategic compensation plans were more favorable to hard-to-staff teachers than non-hard-to-staff teachers, which may have impacted the effectiveness of the strategic compensation plan.

Similar to Colson and Satterfield (2018), Shifrer et al. (2017) investigated the impact of teacher performance pay programs on teacher retention, noting that teachers may not be motivated or incentivized by money. In their study, Shifrer et al. used regression discontinuity techniques and census data of students, teachers, and schools in a large minority-majority school district. The purpose of the study was to determine whether the financial award or monetary incentivization of teachers resulted in improved teacher retention and student achievement (Shifrer et al., 2017). The results of the study displayed that receiving financial award for high performance among teachers was not consistently associated with higher mean student test

scores or teacher likelihood of retention (Shifrer et al., 2017). The researchers therefore concluded that receipt of financial award by teachers was not associated consistently with increased student achievement or teacher attrition.

The findings of Colson and Satterfield (2018) and Shifrer et al. (2017) were inconsistent with the findings of other researchers, such as Mertler (2016), who determined that one of the main reasons for leaving the profession expressed by teachers was related to teacher salary. Similarly, Yeboah and Adom (2016) determined that retention factors and teacher motivation to stay were associated with the provision and administration of financial bonuses and motivational allowances, thereby demonstrating that compensation and financial considerations have been found to be associated with teacher retention in some contexts. Based on the differences in findings by researchers regarding teacher financial rewards and compensation to improve teacher retention, additional research is needed to better understand the impact of salary and compensation on teacher retention.

Other Factors

Further factors that significantly affected teacher retention were addressed within the retention literature. School features such as administrative backing and support (Chiong et al., 2017; Gonzalez et al., 2008; Waddell, 2010), challenging working conditions (Geiger & Pivovarova, 2018), and new teacher mentorship or induction programs (Skaalvik & Skaalvik, 2015) were consistently addressed as factors affecting retention. According to Podolsky et al. (2016), novice teachers who did not receive mentoring or other induction supports left the profession at more than two times the rate of those who do receive such supports. Accountability pressures (Gu & Day, 2013) and workload (Carver-Thomas & Darling-Hammond, 2017; Perryman & Calvert, 2020) were also noted as influences on teacher retention. Researchers have

also identified factors that were not significantly related to teacher retention, such as principal self-efficacy (Dahlkamp et al., 2017). The literature that pertained to other factors associated with teacher retention is presented in this section.

In terms of the impacts of working conditions on teacher retention, Geiger and Pivovarova (2018) conducted a study in the Arizona public school system over a period of 3 years to understand the relationship between teacher attrition patterns, perceived working conditions, and the characteristic of the schools where researched teachers were employed. As was conducted in the current study, data were collected from teacher participants. The researchers used both qualitative and quantitative methods by using quantitative data from Arizona public schools' teacher retention data and collecting qualitative data from teachers through a working conditions survey. They then compared the teacher attrition rates in schools with different student demographic compositions to determine whether differences in working conditions existed as perceived by teachers in those schools.

Geiger and Pivovarova (2018) found that teachers who rated their working conditions as more satisfactory had lower teacher attrition rates. Moreover, the teachers who rated their working conditions as more satisfactory and schools with lower attrition rates were also schools with higher rates of low-income and/or minority students (Geiger & Pivovarova, 2018). Based on these findings, the researchers concluded that working condition was a mediating factor in the relationship between school demographics and teacher attrition.

In a study in which researchers also considered issues of demographics, Papay et al. (2017) investigated the issue of teacher retention across school districts in the public school system. The data used in the study were collected from 16 urban public school districts in seven states to analyze whether differences existed in teacher retention rates. Based on the analysis of

the 16 urban school districts, Papay et al. determined that substantial cross-district variation existed in teacher retention rates. Despite this substantial cross-district retention variation, Papay et al. noted that “observable characteristics such as student demographics, unemployment rates, salaries, and so on” (p. 442) did not easily explain the retention differences found across the districts within the stud, but suggested district policies and practices could serve as compounding factors.

The cross-district variation described by Papay et al. (2017) has been noted by other researchers. In a study on teacher retention, mobility, and attrition, Meyer et al. (2019) investigated retention and factors related to teacher retention in Colorado, Missouri, Nebraska, and South Dakota during the 2015-2016 and 2016-2017 school years. In terms of the factors related to retention, Meyer et al. noted that retention could be measured in terms of stayers, movers, and leavers, defined as the following: stayers were teachers who remained in the same teaching position in the same school; movers were teachers who transferred to a teaching position in a different school or district; and leavers were teachers who took a nonteaching position or left their state public school system.

Based on these definitions, Meyer et al. (2019), similarly to Papay et al. (2017), determined that proportions of stayers, movers, and leavers differed substantially across districts within states, confirming that cross-district variation exists. As mentioned previously, the potential for cross-district differences was important in relation to the current study because variation in the results between districts may limit the generalizability of the results collected from the district in the current study. In addition to the variation between districts, Meyer et al. also noted that the proportion of movers was lower than the proportion of leavers, and the combined proportion of movers and leavers varied across districts.

Meyer et al. (2019) explained that the implications of these findings were that national statistics for rural schools were similar to those for all schools. Meyer et al. also highlighted that the variation across districts may suggest that state education agencies and policymakers should continue to monitor teacher retention, mobility, and attrition at the state and local levels. Moreover, Meyer et al. explained that the monitoring of teacher retention, mobility, and attrition is important to providing effective support for teachers who transition to teach in a different district.

Papay et al. (2017) highlighted that, based on evidence from existing literature on teacher retention, factors such as experience and estimated effectiveness may explain some of the cross-district variations in the data. In addition, Papay et al. explained other potential factors, such as the impact that temporary leaves of absences as well as cross-district, within-state movement had on estimated retention rates. From the exploration of these factors, Papay et al. concluded that accounting for cross-district movement did not make a substantial difference in the data. Accounting for temporary leaves was important, as temporary leaves tended to exacerbate cross-district differences in retention rates (Papay et al., 2017). This study was important to consider in the context of the current study because the researchers demonstrated that the measurement of teacher retention, particularly across districts, had implications for variation in teacher retention rates. Understanding these potential differences was important for the current study as it was conducted in only one school district. Therefore, differences in the definition of teacher retention between districts, among other factors, may have implications for generalizing the results of the current study to other school districts.

Recognizing the importance of factors on teacher retention, Skaalvik and Skaalvik (2016) investigated teacher stress and teacher self-efficacy as predictors of engagement, emotional

exhaustion, and motivation to leave the teaching profession. Skaalvik and Skaalvik explained that the purpose of their study was to investigate how seven potentially stressful variables in the school context, referred to as potential stressors, could predict senior high school teachers' experiences of teacher self-efficacy, emotional stress, emotional exhaustion, engagement in teaching, and motivation to leave the teaching profession. In the study, these factors were defined as follows:

- Teacher self-efficacy is the belief about what a person can do and how well they can do it. Specifically, teacher self-efficacy refers to the teacher's judgment of their own ability to bring about desired outcomes in student engagement and learning. Mastery experiences, which comes from previous involvement, is the most influential source of teacher self-efficacy.
- Emotional exhaustion, which is a dimension of burnout, is characterized by low energy and chronic fatigue.
- Work engagement as a positive, fulfilling state of mind as related to work. Work engagement is characterized by vigor (energy), dedication, and absorption. Teacher engagement has been found to be positively associated with teacher self-efficacy and negatively associated with emotional exhaustion. Moreover, work engagement has been associated with positive outcomes, including increased rates of teacher retention.
- Motivation to leave the teaching profession as related to teacher attrition. Researchers have found that teachers who leave the profession are likely to have weaker self-efficacy. The teacher's intention or motivation to leave the profession has also been found to be predicted by job dissatisfaction and stressful working conditions.

Due to the relationships between factors, the definitions provided above were used in Skaalvik and Skaalvik's (2016) study to understand the relationships between senior high school teachers' perception of potential stressors in school and their teaching efficacy, in addition to their experiences of emotional stress, exhaustion, engagement, and motivation to leave the teaching profession. The researchers noted that although other researchers have explored the topic of stressors and teacher intention to leave the profession, many researchers have only studied a few stressors, which limited the understanding of the relative impact of different stressors and their potential associations.

As has been noted by other researchers, Skaalvik and Skaalvik (2016) highlighted the global problem of a shortage of qualified teachers. They explained that the shortage of qualified teachers was due to the issue of teacher attrition, which refers to a teacher's decision to leave their teaching job, in many cases for nonretirement reasons. Teacher stress was also noted as a key factor related to attrition, as many teachers left the profession due to stressful working conditions, such as large class size, lack of administrative supports, student discipline, time pressure, and workload. Moreover, Skaalvik and Skaalvik explained that there were potential negative consequences associated with teacher stress for both the teachers and the quality of education. The specific consequences noted by Skaalvik and Skaalvik as associated with pressures related to teaching were reduced teacher self-efficacy, lower job satisfaction, lower levels of teacher commitment, higher levels of burnout, and increased teacher attrition.

The participants in Skaalvik and Skaalvik's (2016) study included 523 Norwegian teachers in a senior high school. The results of the study were that four of the seven potential stressors were significantly— but differently— related to the variables of self-efficacy and emotional stress, and indirectly associated with emotional exhaustion, engagement, and

motivation to leave the profession. Based on these findings, Skaalvik and Skaalvik concluded that different potential stressors predicted emotional exhaustion, engagement, and motivation through different psychological processes. Using Structural Equation Modeling (SEM) for the analysis of the data, Skaalvik and Skaalvik identified two main routes or paths associated with teachers' motivation to leave the profession. The two main routes identified were the following: (a) from time pressure via emotional stress and exhaustion to teacher motivation to quit; and (b) from lack of supervisory support and trust, low student motivation, and value conflicts via lower self-efficacy and lower engagement to teacher motivation to quit.

The research completed by Skaalvik and Skaalvik (2016) is relevant to the current study because the researchers demonstrated the importance of understanding the various factors related to retention, including the potential for mediating effects in teacher motivation or intention to quit the teaching profession. In the current study, the researcher built on the work of previous researchers, such as Skaalvik and Skaalvik, to not only understand which factors relate to teacher retention and persistence, but to understand the potential role of teacher grit as related to teacher retention. Teacher grit is important as it relates to the topic of teacher persistence and the decision to continue in the profession as a teacher-level factor. The researcher contributed to the existing literature by examining teacher grit as a largely unexplored and potentially impactful factor related to teacher retention. Skaalvik and Skaalvik's research pertains to the current study because they demonstrated the usefulness of SEM analysis to identify pathways between factors related to teacher motivation or intention to leave the profession. In this section, the researcher described the various factors explored in relation to teacher retention. The following section describes the cost of teacher loss, including the expense to the education system and the impact of teacher loss on student academic outcomes.

Costs of Teacher Loss

The true value of a teacher can never be quantified. With any organization, both human and financial capital is required; regardless of the difficulty in quantifying it, human and financial capital possess value and involve costs. High teacher turnover forces the examination of both forms of capital resources and the associated replacement costs (Sorensen & Ladd, 2018). Moreover, teacher turnover results in instability, added costs, and negatively impacts the quality of teaching, particularly in schools that are in most need of stability (Zhang & Zeller, 2016).

Financial

Financially, school districts around the country spend \$7 billion dollars annually in recruiting, employing, and preparing new teachers (NCTAF, 2010). In terms of teacher retention, Zhang and Zeller (2016) estimated that school systems in the United States spent approximately \$4.9 billion dollars specific to teacher turnover in 2005. While turnover rates vary per school, the estimated cost of teacher turnover for urban districts, which typically have higher turnover rates, is \$20,000 per new hire (Carver-Thomas & Darling-Hammond, 2017). The high costs associated with teacher turnover are due to issues of teacher attrition, and low retention may mean that school systems, particularly those in need, have less money for capital upgrades, technology in the classroom, textbooks, and improving teaching quality. Schools are drained of funding trying to find, hire, and prepare new teachers, which could be better spent on improving student achievement.

Teacher Quality and Experience

There is a direct relationship between experience and quality. When choosing a service or product, most choose experience over basic knowledge. Teaching experience has a positive impact on teacher effectiveness, for both new and experienced teachers, translating into higher

levels of student learning and achievement (Chase, 2000; Hanushek et al., 2016; Huang, 2009; Kini & Podolsky, 2016; Ladd & Sorensen, 2016; Papay & Kraft, 2016). Any effective and experienced teacher knows the best preparation for any new teacher is classroom experience. Content can be studied and learned, but experience brings a deeper understanding and extensive application of that content knowledge. Research has shown that with greater experience comes greater teaching skills (Clotfelter et al., 2006, 2007; Podolsky et al., 2019; Rice, 2003), and pedagogical and intellectual capital is lost when these teachers leave the classroom.

The loss of teacher quality and effectiveness due to deficiency in experience places a burden on school districts and their organizational capacity. This variability within the organization can lead to larger proportions of classrooms staffed by novice teachers, reducing student achievement (Ronfeldt et al., 2013). Not every teacher in the classroom is highly qualified; however, even if a small portion of those who are highly qualified stay, students will demonstrate higher academic success (NCTAF, 2010).

Teacher Motivation

Teacher motivation affects teachers in both selecting teaching as a career choice as well as in their decision to remain in the teaching profession. Teacher motivation has also been explored by researchers due to the potential impacts of teacher motivation on student outcomes, such as student motivation (Kalyar et al., 2018). In the subsection below, the literature pertaining to motivation and teaching as a career choice is described.

Motivation and Teaching as a Career Choice

Motivation to teach is multidimensional and differs for everyone. Researchers who have examined the relationship between motivations to enter the teaching profession and persistence have extensive work regarding preservice teachers (Guarino et al., 2006; Robertson-Kraft &

Duckworth, 2014). The available literature is limited to teacher education program retention rather than long-term classroom retention (Morris & Imms, 2018). Carson and Chase (2009) conducted a study on the motivations of physical education teachers, which is consistently cited for current teachers, but provides no direct data relating to retention. Little attention has been given to the relationship between motivations for choosing teaching as a career and measured teaching persistence (Han & Yin, 2016).

Several commonly expressed motives of preservice teachers for choosing teaching are identified in the literature, many of which are material in nature, such as love of the subject, social status, and job security (Bastick, 2000; Richardson & Watt, 2005; Rinke, 2008). Huberman et al. (1993) categorized motives into two groups: professional and material. Watt and Richardson (2007, 2008) argued that motivation was multidimensional and grouped motives into four higher-order categories: personal utility value, social utility value, task demand, and task return. While the categorization of such motives differed among researchers, the most common categories of motivation are extrinsic, intrinsic, and altruistic motives (Bastick, 2000; Brookhart & Freeman, 1992; Richardson & Watt, 2005; Sinclair, 2008).

Sinclair et al. (2006) suggested that teachers with specific motivations, or the “right” motives, for entering the teaching profession may be more inclined to persist and remain committed. Individuals leaving teacher preparation programs and the classroom may have motivations inadequate “to sustain their involvement in teacher education or practice” (Sinclair et al., 2006, p.1134). Therefore, attracting and hiring individuals with the “right” motives may potentially impact persistence and longevity in the profession. Richardson and Watt (2010) also suggested that the most persistent teachers may be those with specific motivational profiles. Similarly, Robertson-Kraft and Duckworth (2014) suggested that certain identifiable teacher

traits or characteristics can possibly be linked to persistence. Potentially, teachers who stay in the profession share common characteristics. Researchers have suggested there is a need to explore the link between motivations and retention in the field (Bruinsma & Jansen, 2010; Eren & Tezel, 2010; Robertson-Kraft & Duckworth, 2014; Rots, et al., 2010; Watt & Richardson, 2008). Research that has included a focus on the link between teacher motivation and retention is described in the subsection below.

Teacher Motivation and Retention

Researchers who have explored the topic of teacher motivation have found that several factors both on the individual and organizational level are related to teacher motivation and, in some cases, their decision to remain in the profession (Bruinsma & Jansen, 2010; Daniels, 2016; Eren & Tezel, 2010; Gulosino et al., 2016; Robertson-Kraft & Duckworth, 2014; Rots, et al., 2010; Watt & Richardson, 2008). Of the available literature, one recent study pertaining to the link between motivations and retention was conducted by Mertler (2016). Mertler aimed to understand the status of teacher motivation, job satisfaction, and retention among K-12 public and charter school teachers in Arizona.

To understand the topic of teacher motivation, job satisfaction, and retention, Mertler (2016) asked teachers to respond to a web-based survey that included questions about overall job satisfaction, motivational levels of several school and non-school-based factors, and performance incentives. Teachers were also asked about their perceptions of teacher retention and whether they had ever seriously considered leaving the profession (Mertler, 2016). Among the questions pertaining to teacher retention, teachers were asked about the reasons and conditions that would cause them to decide to leave the profession, as well as the factors that would encourage them to stay in the profession. The questions pertaining to teacher motivation, job satisfaction, and

retention were developed based on the Teacher Motivation, Job Satisfaction, and Retention Survey, which is a forced-choice instrument that has 59 content-based, forced-choice items, three open-ended items, and 10 demographic items.

Mertler (2016) surveyed 9,053 teachers who responded to the administered web-based survey. The data collected were analyzed using the Statistical Package for the Social Sciences (SPSS) software. Of the 9,053 usable survey responses, there was a job dissatisfaction rate of 26% (Mertler, 2016). Mertler also noted that there were several significant differences in terms of job satisfaction among demographic groups. Specifically, Mertler found the variables that were statistically significant in relation to job satisfaction were gender, ethnicity, highest level of education, age, years of teaching experience, school type, and school setting. In terms of the job factors that were identified as somewhat motivating or highly motivating for teachers, the highest-rated job factors included “sense of achievement,” “an interpersonal relationship with students,” “recognition,” and “interpersonal relationships with colleagues” (Mertler, 2016, p. 43). Regarding teacher retention, the top reason for leaving the teaching profession was “see a more competitive salary,” (Mertler, 2016, p. 41) which was identified by 70.9% of teachers in the study.

The identification of a more competitive salary as a reason to leave the teaching profession reflected the potential issue of teacher compensation, which other researchers have described as a factor related to teacher retention (Mertler, 2016). Regarding the reasons that would entice a teacher to stay in the teaching profession, three of the highest-ranking factors were pay increase, more time to plan or prepare, and smaller classes (Mertler, 2016). The issue of pay and salary, therefore, was again an issue identified as a factor related to teacher retention in the Mertler study. Based on these findings, Mertler concluded that the teacher dissatisfaction

rates in the study were similar to those in other states and in previous studies. Mertler also recommended that teacher salaries in the state of Arizona be increased as a means of positively impacting the level of job satisfaction. Specifically, Mertler explained that a salary increase would not only be additional income for teachers but would also be a form of showing teachers recognition, valuation, and confirmation for their work.

Research completed by Mertler (2016) is relevant to the current study because the topic and methodology were similar to those of the current research. In terms of methodology, Mertler successfully administered web-based surveys to teachers to explore the topic of teacher motivation, job satisfaction, and perceptions of retention from the teacher perspective. The use of web-based surveys by Mertler (2016) is highlighted in this review of the literature because, in the current study, web-based surveys were administered to teachers to explore the issue of teacher retention, persistence, and grit.

In a study similar to Mertler (2016), Perryman and Calvert (2020) investigated the factors related to motivation to teach and reasons for leaving the teaching profession in the United Kingdom. Perryman and Calvert noted that in the United Kingdom and worldwide, a substantial number of qualified teachers leave the profession within the first 5 years. To investigate this issue, the researchers collected survey data from teacher education graduates of UCL Institute of Education (IOE) in London over a period of 5 years. The purpose of collecting the data was to explore what initially motivated the respondents to teach as well as the reason they have left or may consider leaving the teacher workforce in the future (Perryman & Calvert, 2020). From the analysis of the data collected, Perryman and Calvert found that despite expressing that they were aware of the challenges of the workload associated with teaching, the most common reason for having left the teacher workforce, or intention to leave the teacher workforce in the future, was

due to workload. Perryman and Calvert noted that based on these findings, the reality of teaching is often worse than expected, and the nature of the workload, rather than the quantity of the workload, is a critical factor pertaining to teacher retention. Therefore, workload and ability to cope with the workload is an important consideration in terms of teacher retention and was a factor that the researcher considered in the current study.

Noting the gap in research pertaining to the long-term retention of teachers, Morris and Imms (2018) explained that although researchers have explored the early-career retention of teachers, there has been a lack of research on long-term intervention strategies that could help to retain teachers in the workforce. In their research, Morris and Imms described a 7 year longitudinal project that involved over 170 secondary teachers. The purpose of the project was to help teachers remain positively active in the workforce as a means of addressing the issue of teacher retention. Based on this project, Morris and Imms expressed a need to develop a tool to measure and evaluate teacher retention projects. The TAP tool gathered data from the participants' discipline practice, duties outside of normal teaching and school duties, participants' teaching career, and perceptions of their quality as a teacher and an individual outside of teaching (Morris & Imms, 2018).

Although Morris and Imms (2018) noted the importance of exploring long-term intervention strategies for teacher retention, the purpose of their work was to validate the TAP tool as a means of retaining teachers, rather than identify factors related to teacher retention. Their work, however, is described in the presentation of relevant literature due to their recognition of the lack of data on teacher retention and need for additional studies to evaluate factors related to teacher retention.

Teacher Motivation and Student Outcomes

As mentioned in the section overview, the impacts of teacher motivation on student outcomes has been explored by researchers. In this subsection, research that has explored teacher motivation and student outcomes is described, prior to transitioning into a section pertaining to teacher grit and student outcomes. Understanding the relationship between teacher motivation, teacher grit, and student outcomes is important to establish the potential impact of teacher motivation on student outcomes due to its impact on both teacher grit and factors related to student outcomes. In the current study, understanding the impact of teacher grit on student outcomes, as well as the factors related to teacher grit, is important in terms of both teacher persistence and retention as a factor related to student outcomes. Recognizing that teacher grit may be both directly and indirectly related to teacher motivation as well as student outcomes, the complex relationships between these factors as described in the available literature must be understood.

Kalyar et al. (2018) conducted a quantitative study utilizing multilevel analysis of data collected from 434 students from public sector elementary schools in the Punjab province of Pakistan. In the multilevel analysis, the 434 students were nested within teachers to test the hypothesized relationship between teacher motivation and student motivation. The purpose of the authors' study was to examine the impact of teacher motivation on teaching behavior and on student motivation. Kalyar et al. defined teacher motivation as involving teachers' interests, self-efficacy, and mastery goals orientation. Teacher self-efficacy, based on Bandura's (1977) definition, was defined as a teachers' belief in their own capability to perform a certain task or set of activities. The researchers defined teaching behavior as mastery-oriented and cognitively activating instructional practices. Teacher mastery goals orientation referred to the teachers'

interest in the proficiency of skills to achieve extended expertise for specialized skill development. The definition used by Kalyar et al. for teacher mastery goals orientation was based on self-determination theory. Student motivation was defined as students' interest in the subject matter as well as the students' mastery-goals orientation.

The results of the multilevel analysis conducted by Kalyar et al. (2018) showed that the aspects of teacher motivation measured in the study were antecedents of instructional practices as well as student motivation. In other words, teacher motivation served as a predictor of both the instructional practices and student motivation. In terms of instructional practices, Kalyar et al. determined that only mastery-oriented instructional practices focused on enhancing individual student skill and ability over time had a strong positive link with student motivation. Kalyar et al. explained that the reason for the positive relationship between mastery-oriented instructional practices and student motivation was likely due to the caring attitude towards students' interests and learning within mastery-oriented instructional practices which may lead to increased motivation in students. The authors also identified a direct positive association between teacher motivation and student motivation in which teacher motivation was mediated by mastery-oriented practices.

From the findings obtained and data analysis conducted, Kalyar et al. (2018) concluded that teacher motivation is an important predictor of student motivation. Specifically, the authors highlighted that teachers with high levels of motivation characterized by teacher interest, self-efficacy, and master-goals orientation, were important to fostering student motivation. The researchers recommended that additional studies be conducted to understand other factors potentially related to student motivation, such as socioeconomic status. As the study was conducted in Pakistan, Kalyar et al. recommended that additional studies be conducted within

other contexts to confirm the generalizability of the findings to other geographic and cultural areas. This study is relevant to the current study because the researchers established a positive relationship between teacher motivation and student outcomes, such as student motivation. The relationship between teacher-level factors and student outcomes is important in understanding the implications of the potential impact of teacher retention, motivation, persistence, and grit on student outcomes. In other words, Kalyar et al. established that positive outcomes on the teacher level have the potential to impact students. These findings were consistent with the work of other researchers who have suggested that teacher retention is important for student outcomes, such as academic achievement (Lochmiller et al., 2016; Moore et al., 2018).

In a separate study, Karimi and Ziaabadi (2019) aimed to investigate the relationship between teachers' motivation and factors such as student motivation and affective learning. Specifically, Karimi and Ziaabadi investigated the possible relationship between teachers' metacognitive awareness, teachers' motivation to teach, students' perceptions of teacher credibility, and students' affective learning, and motivation to study. To investigate these potential relationships, Karimi and Ziaabadi administered three questionnaires to students and two questionnaires to teachers. A total of 365 English as Foreign Language (EFL) students and 74 EFL teachers participated in the study. The data collected from the questionnaires administered by Karimi and Ziaabadi were analyzed using SEM to test the significance of the hypothesized relationships between the variables.

Through the SEM analysis of the collected data, Karimi and Ziaabadi (2019) found that there was a positive relationship, described as a positive path, from teacher metacognitive awareness to teacher credibility and teacher motivation (Karimi & Ziaabadi, 2019). Karimi and Ziaabadi also found that there was a positive path from teacher credibility to teacher motivation

and students' affective learning. Further, Karimi and Ziaabadi identified a positive path between teacher motivation and students' affective learning to student motivation. Based on these identified paths, the researchers concluded that teacher motivation may significantly affect students' affective learning. Karimi and Ziaabadi also concluded that teacher credibility promoted student motivation through the mediation of students' affective learning and the indirect intervention of teacher motivation. Moreover, they highlighted that the path between teacher metacognitive awareness and students' affective learning was justified due to the indirect effects of teacher motivation and credibility. Based on these findings and conclusions, Karimi and Ziaabadi discussed the implications for teachers and the education sector, noting the importance of teacher motivation and teacher credibility on the student outcome of affective learning.

Research completed by Karimi and Ziaabadi (2019) was relevant for the current study because, as confirmed in Kalyar et al. (2018), Karimi and Ziaabadi established a positive relationship between teacher motivation and student outcomes. Moreover, by using SEM, Karimi and Ziaabadi described and established the pathways through which teachers may impact student outcomes, such as affective learning. An understanding of the pathways in which teachers impact student outcomes is important in determining the direct and indirect effects of teacher-level variables on student outcomes. In the current study, the results were discussed in consideration of these potential pathways as well as the implications for student outcomes and teacher retention. Although Karimi and Ziaabadi's work was relevant to the current study because they studied the relationships between teacher motivation and student outcomes, it is important to note that Karimi and Ziaabadi did not explore factors such as teacher retention, attrition, or persistence as related to teacher motivation.

Due to the importance of teachers' motivation and the potential relationship with student outcomes, Daniels (2017) investigated the specific impact of curricular factors on middle school teachers' motivation to become and remain effective. Other researchers have explored the impact of curriculum on teacher motive and preservice teachers' career decisions (Zhai, 2019). Specifically, Daniels sought to identify which factors teachers self-identified as both supporting and hindering their professional interest. Purposeful sampling was used to identify teachers for semistructured interviews in Daniels's study. Thirty-two interviews were conducted by Daniels, and 13 were identified as usable for data analysis. Through data analysis, Daniels determined that teacher motivation was influenced by curricular, relational, and logistical factors. Moreover, the curricular factors both encouraged teachers to improve their practice and also led to apathy or disinterest, depending on the curricular element. Daniels concluded that competence, defined as one's ability to effectively teach the required content, was associated with increased professional desire. Daniels suggested that the findings from the study could be used by administrators, professional development providers, and teachers to develop environments and interventions to positively influence teacher motivation.

There is a lack of peer-reviewed literature on the topic of teacher grit, as reflected in this review of the literature. Much of the identified literature from keyword searches surrounding grit included dissertations and, as such, were excluded from this study due to the potential lack of analysis by other authors. The research regarding organizational/contextual factors affecting retention as well as teacher-specific factors such as preparation, motivations, experience, and age is substantial. A summary of the findings presented in this review is presented in the following section.

Summary

Teacher retention is affected by several noted factors, such as age, experience, and preparation. High teacher turnover affects all aspects of the educational context. Due to low teacher retention rates across the country and the high cost associated with teacher turnover, teacher education programs and school districts are searching for ways to recruit not only highly qualified individuals, but increase the likelihood that their hiring selections will have the wherewithal to stick with their chosen profession. While research has extensively documented numerous causal factors leading to low teacher retention, further limiting factors must exist, as teacher retention issues continue to plague schools around the world (Geiger & Pivovarova, 2018).

Limited research on grit and confirmed retention, or measured persistence in the field, has been conducted. Therefore, the aim of this study was to examine the relationship between grit and years of classroom experience for those currently “persisting” in the field. The researcher conducted this study as a necessary addition to the currently available literature on teacher retention. Specifically, the current study built on the work of previous researchers to not only understand which factors relate to teacher retention and persistence but to understand the potential role of teacher grit as related to teacher retention. Teacher grit is important as it relates to the topic of teacher persistence and the decision to continue in the profession as a teacher-level factor. The researcher contributed to the existing literature by examining teacher grit as a largely unexplored and potentially impactful factor related to teacher retention and their ability to “persist” in their profession.

CHAPTER THREE: METHODS

Overview

The purpose of this quantitative, predictive, correlational study was to examine the relationship between grit and years of classroom experience in addition to the predictors of perseverance of effort, consistency of interest, age, gender, level of education, grade level(s) taught, and subject(s) taught. In this chapter, the researcher presents the research question and null hypothesis. The study design, participants, setting, instrumentation, and data analysis are also outlined.

Design

The purpose of this quantitative study was to examine the relationship between grit and years of classroom experience. A correlational research design was used for this study.

Quantitative methodology was determined to be appropriate for the current study as numerical data were used to examine the correlation between variables in this study. There was no attempt to manipulate the variables of this study, but only to describe the relationship and predictive nature of them. According to Fraenkel and Wallen (1991), “If a relation of sufficient magnitude exists between two variables, it becomes possible to predict a score on either variable if a score on the other variable is known” (p. 277). This research design was chosen because it enables the relationship between many variables to be analyzed (Creswell & Creswell, 2018) and provides the degree to which relationships exist between observed variables (Gall et al., 2007).

Furthermore, the correlational research design can assess the relationships between behavior and action, allowing for the predictive nature of current knowledge to future actions and/or events (Trochim et al., 2016). In the current study, the researcher examined the relationship between grit

and years of classroom experience in addition to considering predictor variables within this relationship.

The predictor variables were grit score, age, gender, level of education, grade level(s) taught, and subject(s) taught. Grit, the perseverance and passion for long-term goals, was measured using the Grit-S Scale (Duckworth & Quinn, 2009). Consistency of interest is described as the tendency to maintain goals and interest over long periods of time, while perseverance of effort refers to an individual's tendency to work hard in the face of setbacks or obstacles (Duckworth et al., 2007; Duckworth & Quinn, 2009). Participants listed their current age, and gender options were male, female, or prefer not to say. Level of education was defined as highest confirmed degree. Survey respondents denoted grade level(s) currently taught by selecting one or more choices individually listed preschool through 12th grade. Subject(s) taught were grouped by content similarity and defined as follows: Math, English/Literature/Reading, Science/Physics/Biology, History/Social Studies/Economics, Business/Finance/Accounting, Music/Theater/Art, Special Education, and Other. The criterion variable was years of teaching experience. In the study, the researcher investigated the predictive nature of grit and demographic factors on the number of years a teacher remains in the classroom or teaching experience. If a strong relationship existed between the predictor variables and the criterion variable, it only served as a prediction. Causality cannot be inferred through correlation research design (Tabachnick & Fidell, 2007).

Research Question(s)

The research question for this study was based on the measurable grit level established by Duckworth and Quinn's Grit-S Scale (2009):

RQ1: How accurately can years of teaching experience be predicted from the linear combination of grit score, age, gender, level of education, grade level taught, and subjects taught?

Hypothesis(es)

The following hypothesis was constructed based on the research question of this study:

H₀: There will be no significant predictive relationship between the criterion variable, years of teaching experience, and the linear combination of the predictor variables, grit score, age, gender, level of education, grade level taught, and subjects taught.

Participants and Setting

Population

The participants for this study were drawn from a nonrandom, convenience sample of the target population consisting of general and special education teachers employed in a large public-school district in suburban Atlanta. This school district consists of 66 elementary schools, 25 middle schools, 16 high schools, one alternative high school, one special education center, one adult education center, and one Early Learning Center. Of the 16 traditional high schools within the district, seven are magnet schools for advanced studies. The district employs 7,382 general and special education teachers who support and educate 107,068 students (Georgia Department of Education, 2021).

Only certified general and special education teachers currently teaching in classrooms preschool through 12th grade were asked to participate in the current study. The purpose of this study was to determine if grit level in combination with demographic factors leads to greater teacher retention. Participants were asked to provide demographic information, such as their age, gender, level of education, grade level(s) taught, and subject(s) taught. Researchers have

suggested that teaching experience, which is only gained through retention, positively affects academic achievement in students (Chase, 2000; Kini & Podolsky, 2016; Ladd & Sorensen, 2016). Therefore, only certified general and special education teachers currently teaching in classrooms preschool through 12th grade were asked to participate.

Participants

Classroom teachers currently teaching in one suburban Atlanta public-school district participated in this study. Principals of 28 schools within the district provided approval to conduct research at their school. According to Warner (2013), with an alpha value of .05, and $\beta = .20$, the sample size needed for this study was $N \geq 98$ ($N > 50 + 8k$, where k is the number of predictors). The research question contains six predictors: (a) grit score, (b) age, (c) gender, (d) level of education, (e) grade level(s) taught, and (f) subject taught. Assuming a medium effect-size, an alpha value of .05, the sample size needed for this study was $N \geq 98$. A sample size $N \geq 98$ would increase the probability of rejecting the null hypothesis, demonstrating a potential relationship between variables addressed in each research question. The sample consisted of 468 participants from 10 elementary schools, 13 middle schools, and 5 high schools.

Principals at participating schools invited teacher participation via email with a link to the survey provided by the researcher (see Appendix D). Prior to participation in the study, all teachers were asked to provide consent to participate in the study. Participants were informed that participation in the study was voluntary and that they could choose not to complete the survey at any time for any reason. The study included questions on the survey to address the factors of age, gender, years of experience, level of education, grade levels taught, and subjects taught. The variables “grade levels taught” and “subjects taught” allowed the participant multiple selections; therefore, for further analysis, for the grade levels, the highest grade from the answers

was chosen; the first selection of the subject taught was recorded for further analysis. The variables gender, education, grade level, and subject taught were measured on the categorical scale.

Setting

The school district in this study is one of the largest in the state of Georgia and is a diverse suburban community. Of the 7,382 teachers employed by the district, 66% hold advanced degrees. According to the Georgia Department of Education (2021), state report card data indicated that 49% of students within the district are female and 51% are male with the demographic breakdown of 39.4% White, 30.6% Black/African American, 23.9% Hispanic, 6.0% Asian, 4.4% Multiracial, and 0.2% other. Overall, 40.7% of students qualify for free or reduced lunch, and the district transiency rate is 17.8%. The graduation rate for this district is 89% (Georgia Department of Education, 2021).

Instrumentation

The instrument used in this current study was the Grit-S Scale, which included the overall grit score, and was established based on consistency of interest and perseverance of effort. Participants completed a web-based survey consisting of open-ended and multiple-choice questions from the Grit-S Scale (Duckworth & Quinn, 2009). The instrument was administered via a web-based survey. Questions addressing demographic data, such as age, gender, level of education, grade level(s) taught, subject(s) taught, and years of teaching experience up until the time of study were self-reported by participants. Age and years of classroom teaching were open-ended questions. Gender options included male, female, or prefer not to say. Level of education was defined as highest confirmed degree. Grade level(s) taught were preschool through 12th grade while subject(s) taught were grouped by content similarity and defined as follows: Math,

English/Literature/Reading, Science/Physics/Biology, History/Social Studies/Economics, Business/Finance/Accounting, Music/Theater/Art, Special Education, and Other.

Grit, a noncognitive motivation-based trait, is defined as “the perseverance and passion for long-term goals” (Duckworth et al., 2007). More recently, Duckworth and Gross (2014) defined grit as “the tenacious pursuit of a dominant superordinate goal despite setbacks” (p. 319). The Grit Scale (Grit-O Scale; Duckworth et al., 2007) was developed in response to the notion that, despite facing adversities or experiencing stagnation, some people achieve long-term goals while others, with similar traits and talents, quit. The Grit Scale does not originate from one specific established theory but is a combination of several previous theories examining the effects talent and achievement have on one another, as typically referenced by IQ, personality, and achievement (Ravitch & Riggan, 2017). Since the original development of the scale in 2007, numerous studies have demonstrated the predictive validity of grit on performance and achievement in diverse contexts such as the military, business, and education (Eskreis-Winkler et al., 2014; Robertson-Kraft & Duckworth, 2014; Wolters & Hussain, 2014).

The Grit Scale (Grit-O Scale; Duckworth et al., 2007) is a self-report measure consisting of 12 items that cover two conceptual subdimensions: (a) consistency of interest and (b) perseverance of effort. Each subdimension, or subscale, contains 6 items. Consistency of interest is conceptualized as sustained interest over time, while perseverance of effort is the ability to sustain effort in the face of adversity (Duckworth et al., 2007). The Grit-O Scale asks respondents to rate statements such as “I finish whatever I begin”, “Setbacks don’t discourage me”, and “I often set a goal but later choose to pursue a different one” using a 5-point Likert-type scale that is evaluated from “Very much like me” (5) to “Not like me at all” (1). Cronbach’s alpha measures of internal reliability for the Grit-O Scale is .85 for the total scale, and .84 for the

consistency of interest subscale, and a .78 for the perseverance of effort subscale (Duckworth et al., 2007).

Duckworth and Quinn (2009) presented a short version of the grit scale, the Grit-S Scale, removing two factors from each subscale with the aim of increasing the scale's psychometric properties. The Grit-S Scale contained eight items distributed into the same two subscales as the Grit-O Scale: (a) consistency of interest and (b) perseverance of effort. The Grit-S Scale was used in this study. The structure "consistency of interest" was measured by ratings given to the following four statements: "I often set a goal but later choose to pursue a different one", "I have been obsessed with a certain idea or project for a short time but later lost interest", "I have difficulty maintaining my focus on projects that take more than a few months to complete", and "New ideas and projects sometimes distract me from previous ones." The structure perseverance of effort was measured by ratings given to the following four statements in the Grit-S Scale: "I finish whatever I begin", "Setbacks don't discourage me", "I am diligent", and "I am a hard worker." Participants were asked to respond to each of these statements using a 5-point Likert-type scale that is evaluated from "Very much like me" (5) to "Not like me at all" (1) (see Appendix A). The overall grit score was determined by adding each question's score and dividing by eight, which is the total number of questions within the scale. Respondents were permitted to only select one answer in response to each question. The maximum score on the Grit-S scale is five (extremely gritty), and the lowest score is one (not at all gritty; Duckworth & Quinn, 2009).

Grit is the tendency to sustain interest in and effort toward very long-term goals (Duckworth et al., 2007), and the Grit Scale is a set of measures designed to quantify adults' trait-level perseverance and passion for said long-term goals (Duckworth et al., 2007; Duckworth

& Quinn, 2009). The purpose of this study was to determine the level of grit and combination of demographic factors that influence teacher retention, rendering the use of the Grit-S scale appropriate for this study. Within six separate studies, the reliability and validity of the Grit-S scale were tested using confirmatory factor analysis (Duckworth et al., 2007; Duckworth & Quinn, 2009). Using four original samples used in the development of the original Grit-O scale, the internal consistencies based on Cronbach's Alpha for the Grit-S for the Persistence of Effort Factor were found to be 0.6, 0.65, 0.65, and 0.78, respectively. The Cronbach's Alpha measures for the Consistency of Interest measure based on the four samples were found to be 0.73, 0.74, 0.76, and 0.79, respectively. Using a test-retest analysis within three of the six studies over a 12 month period at $r = 0.08$, $p < 0.001$ predictive validity of the Grit-S scale was confirmed (Duckworth & Quinn, 2009). Duckworth and Quinn also found that Grit-S was a significant predictor controlling for age, which is important to consider in terms of potential confounding factors. While both the Grit-O and Grit-S scales are used to measure grit, more current research is available to support the use of the latter, which was done for the purpose of this study.

In addition to the Grit-S, the researcher included questions on the survey to address the factors of age, gender, years of experience, level of education, grade level(s) taught, and subject(s) taught. Respondents were asked to select from the nominal variable options for gender, highest level of education, grade level(s) taught, subject(s) currently taught. Age and years of experience were self-reported by the participant. The estimated completion time of the survey by participants was 8 minutes. All participant responses were rated by the researcher based on the scale provided in Grit-S scales. The demographic factors of age, gender, years of experience, level of education, grade level(s) taught, and subject(s) taught were analyzed using descriptive statistics as these are nominal variables. Researchers and educators are permitted to

use the Grit-S Scale for noncommercial purposes; however, the scales are copyrighted and cannot be published for wide public distribution (Duckworth, 2020).

Procedures

After research approval was obtained through Liberty University's Institutional Review Board (IRB) and the district under study, research was conducted (see Appendix B and Appendix C). To elicit participant responses, principals within the school district who provided research approval were sent an email requesting they forward the researcher's email containing the survey link to their faculty (see Appendix D). This email described the nature of the study and participant anonymity. Faculty choosing to participate were directed to click a link to complete the informed consent and survey, which included the Grit Scale (Grit-S; Duckworth et al., 2007; Duckworth & Quinn, 2009) and demographic questions designed by the researcher. Prior to completing the survey, participants were asked to complete informed consent included within the survey using Microsoft Forms (see Appendix E). Teachers choosing to participate in the study could complete the anonymous survey at home or at their school location. The anonymity of the web-based survey may have contributed to participants feeling safer and less apprehensive, possibly providing a more honest reporting of their opinions and beliefs. Providing anonymity and allowing participants to complete the survey in the comforts of their own environment or home reduces the potential self-reporting bias (Granello & Wheaton, 2004; Van Selm & Jankowski, 2006). All participants in this survey were 22 years or older. As the data collected in this study were from the completion of a survey, no training of individuals was needed. Rather, participants were provided instructions to complete the online survey.

The survey was housed on Microsoft Forms, an electronic survey system of Microsoft Office 365. Participants were informed that participation in the study was voluntary and they

may choose to leave the study at any time and may choose not to complete any part of the survey for any reason. One follow-up email was sent to principals 1 week following initial contact. The e-mail requested that the principal forward the follow-up reminder to their faculty. The follow-up reminder asked those who had not yet completed the online survey to do so and reminded participants of participation anonymity.

The completed surveys were used for data collection and were stored as electronic data as the surveys were completed electronically. Completed surveys were downloaded as an Excel file directly from Microsoft Forms in preparation for the data cleaning and analysis process. All surveys were collected and reviewed for completion and usability for analysis. Only surveys determined to be complete were used for data analysis. The Excel data downloaded from the completed surveys in Microsoft Forms was imported to SPSS for the data cleaning, preparation, and analysis process, which will be further described. Surveys in which there was a substantial amount of data missing were excluded from the data analysis process. Survey data were reviewed, cleaned, and prepared for data analysis using SPSS software. Incomplete data were excluded in the preparation process in SPSS. As will be described in the section to follow, data analysis included the use of descriptive statistics to confirm normality and establish preliminary assumptions prior to analyzing the correlation of the variables.

At every stage of data collection, all information that could identify the participants was protected. Data were stored securely and only the researcher had access to records. The records of this study were kept private and stored on a password-locked computer. If published in any future reports, no information will be included that will make it possible to identify a subject. Research records will be stored securely in a locked filing cabinet in the researcher's home, and only the researcher will have access to the records. After 3 years, all records containing personal

information will be deleted.

Data Analysis

In this study, the researcher examined the relationship between grit and years of classroom experience, as well as potential influencing demographic factors. Multiple linear regression analysis was used to determine how well several variables predict the outcome of a criterion variable (Tabachnick & Fidell, 2007). Therefore, multiple linear regression analysis was selected as most appropriate to analyze the data collected in this study. To test the hypotheses related to the research question, standard multiple regression analyses were used. Standard multiple regression was deemed the most appropriate because there are no previous or theoretical findings being considered regarding the strength of the predictor variables (Brace et al., 2009). SPSS software was used to complete the multiple regression analyses in the current study.

Visual screening of the data set occurred to check for missing data points and inaccuracies. Prior to conducting the analysis, preliminary assumption testing was conducted. Scatterplots between all pairs of independent variables, the predictor variables, and criterion variable were examined and used to test the assumption of no extreme bivariate outliers. For the assumption of bivariate outliers, the researcher used scatter plots between all pairs of independent variables (x, x) and also the predictor variables (x) and criterion variable (y). In the visual examination of the scatter plot, the researcher examined for extreme bivariate outliers. For the assumption of a multivariate normal distribution, a linear relationship between each pair of variables was investigated. If the variables were not linearly related, the power of the test was reduced. This assumption test was conducted using a scatter plot for each pair of predictor variables (x, x) and between the predictor variables (x) and the criterion variable (y). The researcher used the classic “cigar shape” to determine multivariate normal distribution. For the

assumption of non-multicollinearity, the researcher determined whether there was an absence of multicollinearity among the predictor variables. In this assumption, the researcher determined whether a predictor variable (x) is highly correlated with another predictor variable (x). If the Variance Inflation Factor (VIF) was greater than 10, multicollinearity was established, and the assumption was considered to be violated. Acceptable values for this assumption were between 1 and 5. Because the variables in this study included categorical variables, a Pearson correlation was determined to not be appropriate for measuring the correlation between variables in this study. With an alpha value set at $p < .05$, homoscedasticity was evaluated using a scatterplot to test that the criterion variable exhibits similar amounts of variance across the range of values for the predictor variables (Tabachnick & Fidell, 2007). Finally, linearity was assessed using a scatterplot (Tabachnick & Fidell, 2007).

The required sample size needed for this study, according to Warner (2013), is $N \geq 98 + k$ or $N > 50 + 8k$, where k is the number of predictors. The researcher used the research question to examine the following six predictors: (a) grit score, (b) age, (c) gender, (d) level of education, (e) grade level(s) taught, and (f) subject taught. Assuming a medium effect-size, an alpha value of .05, the sample size needed for this study was $N \geq 98$. A sample size $N \geq 98$ increases the probability of rejecting the null hypothesis, demonstrating a potential relationship between variables addressed in each research question. The suburban Atlanta school district chosen for study employs over 7,500 special and general education teachers. Thus, it was likely that a sufficient sample size would be attained as a sufficient sample size of $N \geq 98$ represents a minimum response rate of approximately 1.31% ($98/7500$) of the total number of special and general education teachers in the suburban Atlanta school district selected for the current study. The sample size used for this study was, therefore, $N \geq 98$ in alignment with adequate sample size

recommended by Warner (2013) as a sufficient sample size to reject or support the null hypothesis. The null hypothesis to be tested using multiple linear regression analysis was rejected at the 95% confidence level.

CHAPTER FOUR

Overview

The purpose of this quantitative, predictive, correlational study was to examine the relationship between grit and years of classroom experience in addition to the predictors of age, gender, level of education, grade levels taught, and subjects taught. In Chapter 4, the data screening procedures are outlined. The reliability analyses address the integrity of the survey. The exploratory data analysis was performed to present the demographic characteristics of the participants. Multiple linear regression analysis was used to determine how well several variables predict the outcome of a criterion variable. The predictor variables were overall grit score, age, gender, level of education, grade levels taught, and subjects taught. Grit, the perseverance and passion for long-term goals, was measured using the Grit-S Scale (Duckworth & Quinn, 2009). The assumptions of the multiple regression were tested.

Research Question

RQ: How accurately can years of teaching experience be predicted from the linear combination of grit score (meaning the consistency of interest and perseverance of effort), age, gender, level of education, grade level taught, and subjects taught?

Null Hypothesis

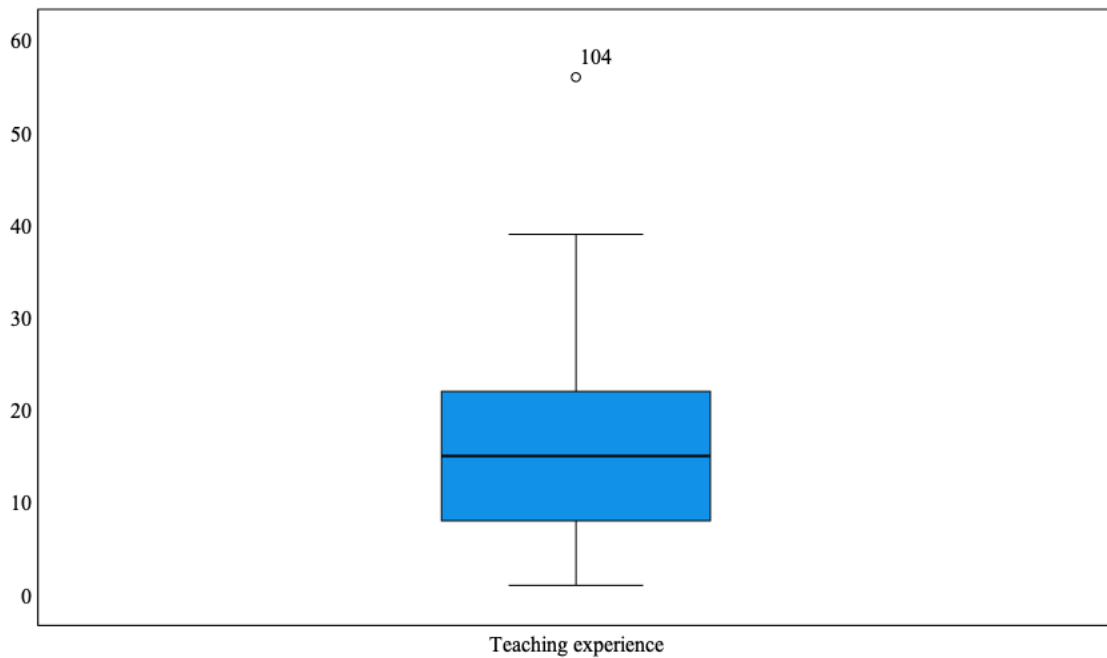
H₀: There will be no significant predictive relationship between the criterion variable, years of teaching experience, and the linear combination of the predictor variables, grit score, age, gender, level of education, grade level taught, and subjects taught.

Data Screening

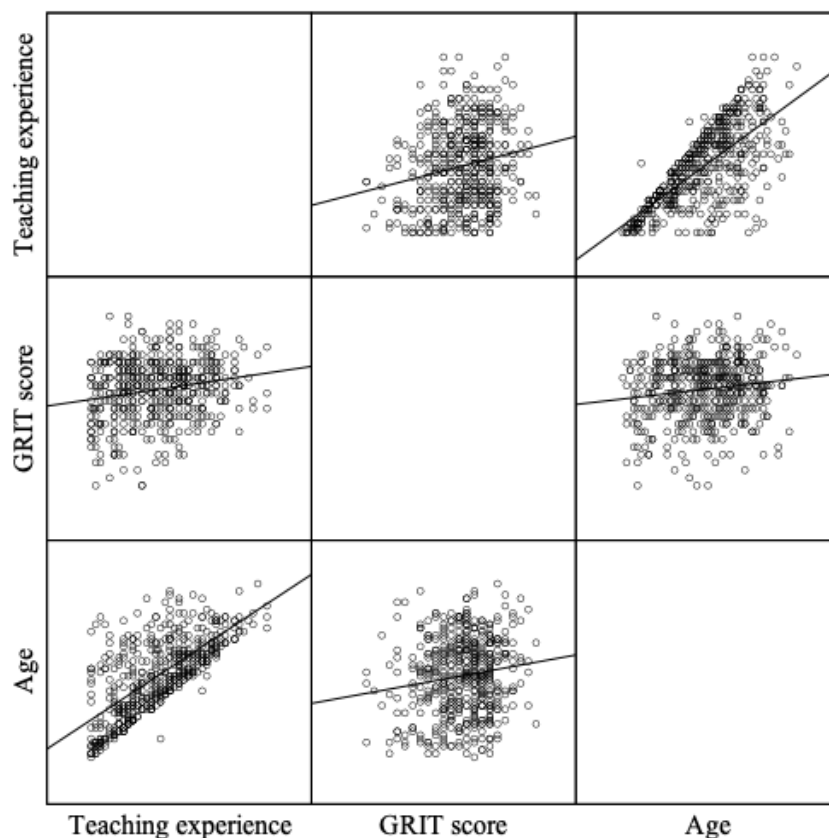
The initial dataset included 518 participants. The data were screened for missing values, incomplete cases, and outliers. As such, 48 participants who were not current classroom teachers were removed from the dataset. Additionally, one participant withdrew from the study, and one participant (ID 104) was identified as an outlier and removed from further analysis (Figure 1). No data errors or inconsistencies were identified.

Figure 1

Boxplot of Teaching Experience



A matrix scatter plot was used to detect bivariate outliers between predictor variables and the criterion variable. No bivariate outliers were identified (Figure 2).

Figure 2*Matrix Scatterplot of the Continuous Variables***Reliability Analysis**

To perform regression analysis, the composite score of the Grit-S Scale was created. Grit, the perseverance and passion for long-term goals, was measured using the Grit-S Scale (Duckworth & Quinn, 2009). Items 2, 4, 7, and 8 were coded from 1 ('Not like me at all') to 5 ('Very much like me'). Items 1, 3, 6, and 6 were reverse-coded. The average value of the items was created as the composite score 'Grit.' The maximum score on this scale was 5 (extremely gritty), and the lowest score on this scale was 1 (not at all gritty). To address the reliability of data, a Cronbach's analysis was conducted on the composite score. The alpha level was .69,

indicating that the subset of variables had an adequate level of reliability and internal consistency in measuring the constructs of the study.

Descriptive Statistics

The final sample included 468 participants. The study included questions on the survey to address the factors of age, gender, years of experience, level of education, grade levels taught, and subjects taught. The variables “grade levels taught” and “subjects taught” allowed the participant multiple selections; therefore, for further analysis, for the grade levels, the highest grade from the answers was chosen, and the first selection of the subject taught was recorded for further analysis. The variables “gender”, “education”, “grade level”, and “subject taught” were measured on the categorical scale. The majority of the participants were females ($n = 365$, 78.0%), held a master’s degree ($n = 210$, 44.9%), and taught up to 9th grade level ($n = 117$, 25.0%; see Table 1). Additionally, for regression analysis, grade levels were aggregated to classes elementary, middle, and high schools (Table 2).

Table 1*Demographic Characteristics of the Participants*

	<i>n</i>	%
Gender		
Female	365	78.0%
Male	102	21.8%
Prefer not to say	1	0.2%
Education		
Master's Degree	210	44.9%
Education Specialist Degree	119	25.4%
Bachelor's Degree	107	22.9%
Doctorate	27	5.8%
Professional Degree	5	1.1%
Subject taught		
Math	156	33.3%
English/Literature/Reading	92	19.7%
Other	60	12.8%
Science/Physics/Biology	55	11.8%
History/Social Studies/Economics	40	8.5%
Special Education	34	7.3%
Music/Theater/Art	25	5.3%
Business/Finance/Accounting	6	1.3%
Highest teaching grade level		
9th grade	117	25.0%
8th grade	99	21.2%
7th grade	46	9.8%
12th grade	42	9.0%
6th grade	39	8.3%
5th grade	30	6.4%
2nd grade	21	4.5%
4th grade	18	3.8%
3rd grade	15	3.2%
1st grade	14	3.0%
Kindergarten or Preschool	11	2.4%
11th grade	11	2.4%
10th grade	5	1.1%

Table 2*Class of Grade Levels*

Grades	Class	<i>n</i>	%
5 - 8	Middle school	214	45.70%
9 - 12	High school	175	37.40%
0 - 4	Elementary school	79	16.90%

The variables age, teaching experience, and grit score were measured on a continuous scale. The participants on average were 44 years old with 15 years of teaching experience. The average grit score was 3.81 out of 5, indicating that the participants generally exhibited consistency of interest and perseverance of effort (Table 3).

Table 3*Descriptive Statistics for the Continuous Variables*

	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>
Age	468	22.00	69.00	44.09	10.36
Teaching experience	468	1.00	39.00	15.45	8.73
GRIT score	468	2.25	5.00	3.81	0.50

Assumption Testing**Assumption of Linearity**

The multiple linear regression requires that the assumption of linearity is met. Due to the presence of categorical variables, the linearity of only continuous variables was examined using a scatter plot (Figure 2). The variables generally displayed a positive correlation with no indication of a curvilinear pattern. Therefore, the assumption of linearity was met.

Assumption of Normal Distribution

The multiple linear regression requires that the assumption of normal distribution is met. The assumption of bivariate normal distribution was examined using a scatter plot. The assumption of bivariate normal distribution was met. Figure 2 provides the matrix scatter plot.

Assumption of Multicollinearity

A Variance Inflation Factor (VIF) test was conducted to ensure the absence of multicollinearity. This test was run because if a predictor variable (x) was highly correlated with another predictor variable (x), they essentially provide the same information about the criterion variable. If the Variance VIF is too high (greater than 10), then multicollinearity is present. Acceptable values are between 1 and 5. The results of the VIF test returned high values for several predictors, indicating a possible violation of this assumption (Table 4). Transformation or centering of the variables did not improve the model.

Table 4*Collinearity Statistics*

Model		Collinearity Statistics	
		Tolerance	VIF
1	Intercept		
	GRIT score	0.929	1.076
	Age	0.933	1.072
	Gender (Male)	0.859	1.164
	Gender (Prefer not to say)	0.973	1.028
	Education (Doctorate)	0.759	1.317
	Education (Specialist Degree)	0.604	1.655
	Education (Master's Degree)	0.589	1.699
	Education (Professional Degree)	0.944	1.059
	Subject (Math)	0.053	18.706
	Subject (English/Literature/Reading)	0.075	13.343
	Subject (Other)	0.102	9.773
	Subject (Science/Physics/Biology)	0.110	9.099
	Subject (History/Social Studies/Economics)	0.137	7.295
	Subject (Special Education)	0.156	6.422
	Subject (Music/Theater/Art)	0.199	5.018
	Grade (Middle school)	0.412	2.429
	Grade (High school)	0.377	2.650

Note. Dependent Variable: Teaching experience

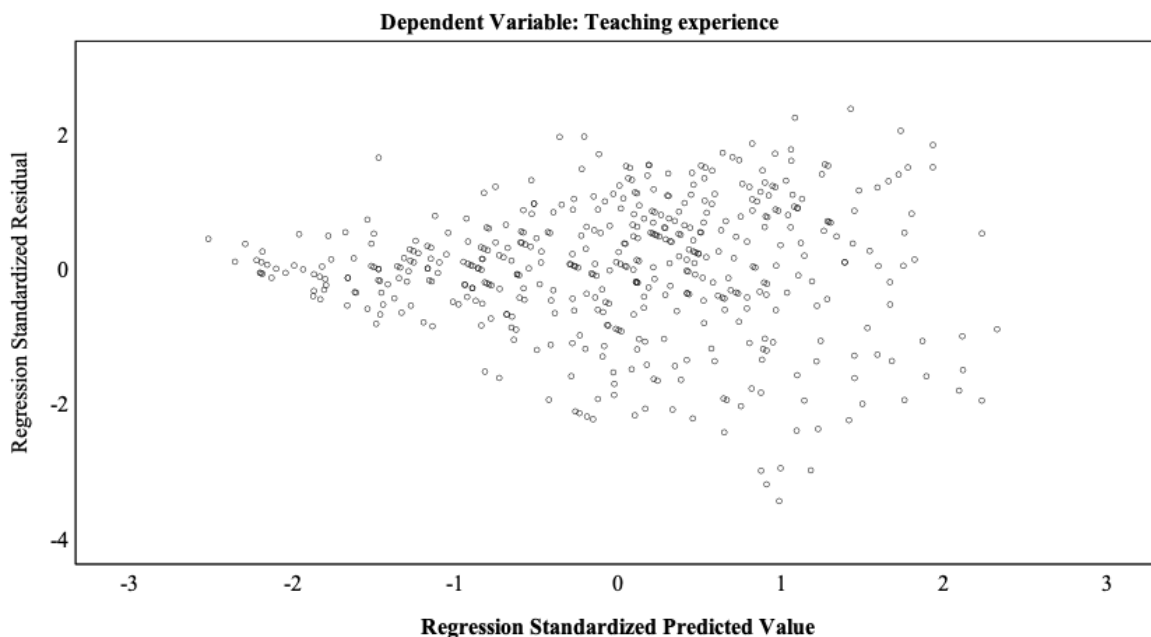
Assumption of Homoscedasticity

The multiple linear regression requires that the assumption of homoscedasticity is met. Homoscedasticity refers to the constant variance of residuals from the regression model. The inspection of the scatterplot of standardized residuals and fitted values revealed a cone-shaped

pattern, indicating possible implications with confidence intervals and significance tests for the regression model (Figure 3). The transformations of the variables did not improve the model.

Figure 3

Scatterplot of Residuals and Predicted Values From the Regression Model



Results

A multiple regression was conducted to examine the relationship between grit and years of classroom experience in addition to the predictors of age, gender, level of education, grade levels taught, and subjects taught. The predictor variables were grit score, age, gender, education, grade level taught, subjects taught. The criterion variable was teaching experience. The regression model was statistically significant, $F(17, 450) = 31.12, p < .001$. The null hypothesis was rejected, and it was concluded that there was a statistically significant predictive relationship between the years of teaching experience and the linear combination of grit, age, gender, level of education, grade level taught, and subjects taught (Table 5).

Table 5*Regression Model Results*

Model		<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>
1	Regression	19245.34	17	1132.08	31.12	<.001
	Residual	16370.43	450	36.38		
	Total	35615.77	467			

a. Dependent Variable: Teaching experience

b. Predictors: (Constant), GRIT score, Age, Gender (Male), Gender (Prefer not to say), Education (Master's Degree), Education (Professional Degree), Education (Doctorate), Education (Education Specialist Degree), Subject (Math), Subject (History/Social Studies/Economics), Subject (Music/Theater/Art), Subject (Special Education), Subject (Science/Physics/Biology), Subject (Other), Subject (English/Literature/Reading), Grade (Middle school), Grade (High school)

The model's effect size was large $R = .74$. Furthermore, $R^2 = .54$, which indicated that approximately 54% of the variance of criterion variable can be explained by the linear combination of predictor variables. The adjusted R^2 coefficient was .52 (Table 6).

Table 6*Model Summary*

Model	R^2	R	<i>Adjusted R²</i>	SEM
1	0.54	0.74	0.52	6.03

a. Dependent Variable: Teaching experience

b. Predictors: (Constant), GRIT score, Age, Gender (Male), Gender (Prefer not to say), Education (Master's Degree), Education (Professional Degree), Education (Doctorate), Education (Education Specialist Degree), Subject (Math), Subject (History/Social Studies/Economics), Subject (Music/Theater/Art), Subject (Special Education), Subject (Science/Physics/Biology), Subject (Other), Subject (English/Literature/Reading), Grade (Middle school), Grade (High school)

Because the researcher rejected the null hypothesis, analysis of the coefficients was required. The predictor variables “grit score” and “age” were measured on a continuous scale; however, the predictor variables gender, level of education, grade level taught, and subjects taught were measured on the categorical scale, therefore requiring recoding with dummy variables. Base categories for this regression model were female for gender; Bachelor’s Degree for education; Business/Finance/Accounting for the subject taught; and Elementary school for grade level taught. Based on the coefficients, it was found that the age of the participant was the best predictor of teaching experience, $\beta = .65, p < .001$. Grit score was also found statistically significant in predicting teaching experience, $\beta = .07, p = .003$. Additionally, a Doctorate Degree ($\beta = .11, p < .001$) and Specialist Degree ($\beta = .22, p < .001$) were found to be statistically significantly higher than bachelor’s degree in predicting teaching experience, holding the other variables constant. It was not enough evidence to conclude that subject taught and grade level taught were statistically significantly associated with teaching experience (Table 7).

Table 7*Regression Model Coefficients*

	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	Sig.
	<i>B</i>	<i>SE</i>	Beta		
Intercept	-17.10	3.54		-4.82	<.01
GRIT score	1.28	0.58	0.07	2.19	.03
Age	0.55	0.03	0.65	19.75	<.01
Gender (Female) base category					
Gender (Male)	-0.15	0.73	-0.01	-0.21	.84
Gender (Prefer not to say)	-5.32	6.12	-0.03	-0.87	.39
Education (Bachelor's Degree) base category					
Education (Doctorate)	4.11	1.37	0.11	3.00	<.01
Education (Specialist Degree)	4.31	0.82	0.22	5.24	<.01
Education (Master's Degree)	1.41	0.73	0.08	1.93	.05
Education (Professional Degree)	1.37	2.79	0.02	0.49	.62
Subject (Business/Finance/Accounting) base category					
Subject (Math)	2.31	2.56	0.12	0.90	.37
Subject (English/Literature/Reading)	2.05	2.56	0.09	0.80	.42
Subject (Other)	3.28	2.61	0.13	1.26	.21
Subject (Science/Physics/Biology)					
Subject (History/Social Studies/Economics)	0.82	2.61	0.03	0.31	.75
Subject (Special Education)	1.01	2.69	0.03	0.38	.71
Subject (Music/Theater/Art)	0.57	2.72	0.02	0.21	.83
Grade (Elementary school) base category					
Grade (Middle school)	3.00	2.78	0.08	1.08	.28
Grade (High school)	-0.61	0.87	-0.03	-0.70	.48
	-0.65	0.94	-0.04	-0.69	.49

a. Dependent Variable: Teaching experience

Summary

The purpose of this quantitative, predictive, correlational study was to examine the relationship between grit and years of classroom experience in addition to the predictors of perseverance of effort, consistency of interest, age, gender, level of education, grade levels taught, and subjects taught. In Chapter 4, the researcher presented the results of the statistical tests. Multiple linear regression analysis was used to determine how well several variables predict the outcome of a criterion variable. It was found that model was statistically significant. The model's effect size was large, $R^2 = .54$, indicating that approximately 54% of the variance of criterion variable can be explained by the linear combination of predictor variables. The null hypothesis was rejected, and it was concluded that there was a statistically significant predictive relationship between the years of teaching experience and the linear combination of grit, age, gender, level of education, grade level taught, and subjects taught.

Further analysis of the coefficients revealed that age, grit, and education were statistically significant in predicting teaching experience. It was found that the age of the participant was the best predictor of teaching experience, $\beta = .65, p < .001$. Grit score was also found statistically significant in predicting teaching experience, $\beta = .07, p = .003$. It was also found that a Doctorate Degree ($\beta = .11, p < .001$) and Specialist Degree ($\beta = .22, p < .001$) were statistically significantly higher than bachelor's degree in predicting teaching experience, holding the other variables constant. There was not enough evidence to conclude that subject taught and grade level taught were statistically significantly associated with teaching experience. The assumptions of the normality and linearity were generally met. The assumptions of homoscedasticity and multicollinearity were violated, indicating that confidence intervals and significance tests for some coefficients may not be accurate. The transformation of the variables did not improve the

model; therefore, the original scale was kept. Chapter 5 includes a discussion of the possible reasons for the outcomes, the shortcomings that the researcher encountered during the investigation, as well as recommendations for future studies on this topic.

CHAPTER FIVE: CONCLUSION

Overview

The problem explored in this study, teacher retention, has been and continues to be a serious problem for school systems across the United States. Approximately 44% of all U.S. teachers will leave the profession after only 5 years in the classroom (Ingersoll et al., 2018), increasing from the 30% reported by the U.S. Department of Education's National Commission on Teaching and America's Future in 2010. According to Carver-Thomas and Darling-Hammond (2017), the turnover rate of teachers in Title I schools and schools serving large minority populations was 50%–70% higher than more affluent schools. Carver-Thomas and Darling-Hammond (2017) asserted there were higher shortages in the areas of math, science, special education, English language development, and foreign languages, which are content areas more difficult to fill.

Low teacher retention is widespread and places a financial burden on school districts to recruit and train new teachers, negatively affecting student achievement. Researchers have suggested that teaching experience positively impacts student learning and achievement (Chase, 2000; Huang, 2009; Johnson & Birkeland, 2006; Sutchter et al., 2016). Kini and Podolsky (2016) reviewed 30 research studies over the last 15 years that were used to analyze teaching experience and its effect on student achievement. Their findings affirmed a positive association between teaching experience and student achievement, supporting the idea that public education is dependent on the development and continuation of a highly experienced and qualified teaching force.

Researchers have examined teacher retention. Contextual influences are often highlighted in the teacher retention literature, yet the problem of low teacher retention persists and continues

to worsen (Darling-Hammond et al., 2018; Nguyen, 2021). In their work on teacher identity development, Hamman et al. (2010) addressed the belief that for "new teachers who remain in the field, some factor must act to insulate them from the difficulties created by nonsupportive administrators, cultural differences between themselves and their students, and limited resources" (p. 1358).

Previous researchers have correlated grit with persistence in higher education (Duckworth et al., 2007; Duckworth & Quinn, 2009); however, studies on grit level in teachers are limited in current research (Robertson-Kraft & Duckworth, 2014). Grit may be an insulating factor, which was suggested by Hamman et al. (2010). The results of this study were influenced by grit levels identified by teachers currently in the classroom, and the researcher provides recommendations for effective recruitment strategies to attract people into the teaching profession who are more likely to be insulated from difficulties and persist. The problem is that the literature has not fully addressed the level of grit and the combination of demographic factors influencing teacher retention.

Therefore, the purpose of this quantitative, correlational study was to add to the literature regarding factors that lead to higher teacher retention which have not yet been explored. Data were collected from a sample of approximately 468 teachers within an Atlanta school district. The researcher determined the level of grit and the combination of demographic factors that influence the retention of general and special education teachers in preschool-12th grade teaching in a large suburban Atlanta school district. The predictor variables of this study were (a) overall grit score, (b) age, (c) gender, (d) level of education, (e) grade level(s) taught, and (f) subject(s) taught (Brace et al., 2009; Duckworth et al., 2007; Duckworth & Quinn, 2009; Robertson-Kraft & Duckworth, 2014). Grit, the perseverance and passion for long-term goals, was measured

using the Grit-S Scale (Duckworth & Quinn, 2009). Consistency of interest and perseverance of effort are subcategories within the scale. Consistency of interest is described as the tendency to maintain goals and interests over long periods, while perseverance of effort refers to an individual's tendency to work hard in the face of setbacks or obstacles (Duckworth et al., 2007; Duckworth & Quinn, 2009).

Demographic factors, such as the age of the participant and level of education, were also assessed. Participant age was an open-ended entry. Male, female, or prefer not to say were provided as gender options. The highest level of education was itemized as Bachelor's Degree (e.g., B.A., BBA, and B.S.), Master's Degree (e.g., M.A., MS, and MEng), Education Specialist Degree (e.g., Ed.S), Professional Degree (e.g., M.D., DDS, J.D.), and Doctorate (e.g., PhD or EdD). Survey respondents denoted the current grade level(s) taught by selecting choices listed from preschool through 12th grade. Subject(s) taught were grouped by content similarity and defined as the following: Math, English/Literature/Reading, Science/Physics/Biology, History/Social Studies/Economics, Business/Finance/Accounting, Music/Theater/Art, Special Education, and Other. The criterion variable for this study was teacher retention, which was defined as years of classroom experience.

In Chapter 4, the researcher outlined the data screening procedures. The reliability analyses addressed the integrity of the survey. The exploratory data analysis was performed to present the demographic characteristics of the participants. Multiple linear regression analysis was used to determine how well several variables predict the outcome of a criterion variable. The predictor variables were overall grit score, age, gender, education level, grade levels, and subjects taught. Grit, the perseverance and passion for long-term goals, was measured using the

Grit-S Scale (Duckworth & Quinn, 2009). The assumptions of the multiple regression were tested.

The researcher sought to answer the following research question: “How accurately can years of teaching experience be predicted from the linear combination of grit score (meaning the consistency of interest and perseverance of effort), age, gender, level of education, grade level taught, and subjects taught?”. It was hypothesized that there would be no predictive relationship between the years of teaching experience and the linear combination of overall grit, age, gender, level of education, grade level taught, and subjects taught. The regression model was statistically significant. Therefore, the null hypothesis was rejected, and it was concluded that there was a statistically significant predictive relationship between the years of teaching experience and the linear combination of grit, age, gender, level of education, grade level taught, and subjects taught.

The remainder of this chapter includes a discussion of the findings. A summary of the main findings is presented in the following section. A discussion of these findings and their extension of the literature presented in Chapter 2 associated with the relationship between teaching experience and each of the other study variables is then provided. Implications of these findings for practice, research, and social change are then discussed. Delimitations and limitations identified in Chapter 1 are then restated, and the extent to which they influenced study outcomes is considered. Based on these limitations and the implications of these findings, recommendations are then offered for future research. The researcher concludes with a summary and outline of key points.

Summary of Findings

This section contains a summary of the main findings. Various statistically significant and insignificant correlations across the demographic variables discussed in Chapter 4 were found, and each of these findings is recapitulated. A discussion of these findings is then offered in the following section.

The initial dataset included 518 participants. The data were screened for missing values, incomplete cases, and outliers. As such, 48 participants who were not current classroom teachers were removed from the dataset. Additionally, one participant withdrew from the study, and one participant (ID 104) was identified as an outlier and removed from further analysis. To perform regression analysis, the composite score of the Grit-S Scale was created. Grit, the perseverance and passion for long-term goals, was measured using the Grit-S Scale (Duckworth & Quinn, 2009). To address data reliability, a Cronbach's analysis was conducted on the composite score. The alpha level was .69, indicating that the subset of variables had an adequate level of reliability and internal consistency in measuring the constructs of the study.

The final sample included 468 participants. The study included questions on the survey to address the factors of age, gender, years of experience, level of education, grade levels taught, and subjects taught. The variables of grade levels taught and subjects taught allowed the participant multiple selections. Therefore, for further analysis, for the grade levels, the highest grade from the answers was chosen, and the first selection of the subject taught was recorded for further analysis. The variables gender, education, grade level, and subject taught were measured on the categorical scale. The majority of the participants were females ($n = 365$, 78.0%), held a master's degree ($n = 210$, 44.9%), and taught up to 9th grade level ($n = 117$, 25.0%). The variables age, teaching experience, and grit score were measured on a continuous scale. The

participants, on average, were 44 years old with 15 years of teaching experience. The average grit score was 3.81 out of 5, indicating that the participants generally exhibited consistency of interest and perseverance of effort.

All assumptions of tests of normality and distributions of the sample were met. Multiple regression was conducted to examine the relationship between grit and years of classroom experience in addition to the predictors of age, gender, level of education, grade levels taught, and subjects taught. The predictor variables were grit score, age, gender, education, grade level, and subjects taught. The criterion variable was teaching experience. The regression model was statistically significant, $F(17, 450) = 31.12, p < .001$. The null hypothesis was rejected, and it was concluded that there was a statistically significant predictive relationship between the years of teaching experience and the linear combination of grit score, age, gender, level of education, grade level taught, and subjects taught. The model's effect size was large (i.e., $R = .74$). Furthermore, $R^2 = .54$ indicates that the linear combination of predictor variables can explain approximately 54% of the variance of the criterion variable. The adjusted R^2 coefficient was .52.

Further analysis of the coefficients revealed that age, grit, and education were statistically significant in predicting teaching experience. It was found that the participant's age was the best predictor of teaching experience, $\beta = .65, p < .001$. Grit score was also found statistically significant in predicting teaching experience, $\beta = .07, p = .003$. Additionally, a Doctorate Degree ($\beta = .11, p < .001$) and Specialist Degree ($\beta = .22, p < .001$) were statistically significantly higher than a bachelor's degree in predicting teaching experience, holding the other variables constant. In the following section, the researcher discusses the extent to which these findings align with and/or extend literature presented in Chapter 2.

Discussion

This section contains a discussion of the extent to which the findings from this study align with and extend the seminal and contemporary evidence presented and critically evaluated in Chapter 2. First, a multiple regression was conducted to examine the relationship between grit and years of classroom experience in addition to the predictors of age, gender, level of education, grade levels taught, and subjects taught. The predictor variables were grit score, age, gender, education, grade level taught, subjects taught. The criterion variable was teaching experience. The regression model was statistically significant. Thus, the null hypothesis was rejected, and it was concluded that there was a statistically significant predictive relationship between the years of teaching experience and the linear combination of overall grit, age, gender, level of education, grade level taught, and subjects taught.

This finding aligns with the literature presented in Chapter 2 associated with the relationship between grit, classroom experience, and each of the other dependent variables listed above. Specifically, the literature presented in Chapter 2 demonstrated that any effective and experienced teacher knows the best preparation for any new teacher is classroom experience. Content can be studied and learned, but experience brings a deeper understanding and extensive application of that content knowledge. This is not to say that every teacher with significant experience is a highly effective teacher; however, research has shown that with greater experience comes greater teaching skills (Clotfelter et al., 2006, 2007; Podolsky et al., 2019; Rice, 2003), and pedagogical and intellectual capital is lost when these teachers leave the classroom.

In the current study, it was determined that classroom experience is critical for establishing grit. Further analysis of the coefficients revealed that age, grit, and education were

statistically significant in predicting teaching experience. It was found that the age of the participant was the best predictor of teaching experience. Grit score was also found statistically significant in predicting teaching experience. Data analysis also revealed that a Doctorate Degree and Specialist Degree were statistically significantly higher than a bachelor's degree in predicting teaching experience, holding the other variables constant. This finding also helps to extend the literature presented in Chapter 2 associated with education level and teaching experience. Specifically, the literature presented in Chapter 2 demonstrated that understanding teacher preparation in addition to the level of education received by the teacher is crucial because a teacher's level of preparation influences their satisfaction in teaching, which ultimately affects their decision to remain or leave the profession (Zhang & Zeller, 2016). Mertler (2016) found the statistically significant variables in relation to job satisfaction were gender, ethnicity, highest level of education, age, years of teaching experience, school type, and school setting. In terms of the job factors that were identified as somewhat motivating or highly motivating for teachers, the highest-rated job factors included "sense of achievement", "an interpersonal relationship with students", "recognition", and "interpersonal relationships with colleagues" (Mertler, 2016, p. 43). As grit is critical for maximizing teacher retention, these findings support the concept of experience and its influence on teacher resilience.

In addition to helping to extend literature and concepts presented in Chapter 2, findings from this study also align with the theoretical framework underpinning this research, which was grit theory. The theory of grit has recently emerged and gained popularity in both business and educational domains (Duckworth et al., 2007; Jachimowicz et al., 2018; Kannangara et al., 2018). Different versions of the Grit Scale were used to conceptualize, assess, and measure grit (Cormier et al., 2019; Duckworth et al., 2007; Duckworth & Quinn, 2009). Grit, a noncognitive

motivation-based trait, is defined as “the perseverance and passion for long-term goals” (Duckworth et al., 2007). The basis of the theory of grit is that certain individuals have a quality (grit) that enables them to persevere in achieving a long-term goal despite facing adversities or struggles. The current study revealed that education level and classroom experience are critical for building grit. It was determined that measuring grit can help predict success and perseverance in such a diverse context, and it is important to explore how grit within teachers affects retention. More specifically, grit can help researchers create a framework to explore motivations and persistence within the teaching profession. For this reason, grit was shown to be an appropriate model for this study.

Implications

Results from this study have significant implications for practice, research, and social change. The significance of this study is that the researcher better understands the effect of grit on teacher retention. The researcher examined the relationship between grit and years of classroom experience, ranging from 1 to 30 years and up. Because teachers with greater classroom experience demonstrate higher levels of grit, a noncognitive motivation-based trait, it can be suggested that grit level is predictive of teacher persistence. Through these findings, the valuable information is evidenced to teacher education programs and higher education institutions, and ultimately provides insight on recruitment strategies that may attract individuals with specific motivational profiles or characteristics inclined to persistence, thus potentially increasing teacher retention (Richardson & Watt, 2010; Robertson-Kraft & Duckworth, 2014; Sinclair et al., 2006).

Additionally, these findings help to address gaps in the literature that have been identified previously. According to Ingersoll et al. (2018), approximately 44% of all U.S. teachers will

leave the profession after only 5 years in the classroom. School and district leaders across the country consistently struggle to keep qualified teachers in the profession, as 25%–50% of all new hires are replaced every 5 years, depleting both financial and human capital (Carver-Thomas & Darling-Hammond, 2017; Ingersoll, 2010; Ingersoll & Smith, 2003; NCTAF, 2010; Rinke, 2008). Researchers have demonstrated that teaching experience positively impacts student learning and achievement (Chase, 2000; Huang, 2009; Johnson & Birkeland, 2006; Kunter et al., 2013). Effective educators know how understanding educational best practices and pedagogy frequently comes from the trial and error of classroom implementation after years of practice (Podolsky et al., 2019). Persistence in the field is critical to fine-tuning educational practices. When educational practices are deficient, student outcomes are negatively affected (Darling-Hammond et al., 2020).

These findings help address previous calls for research. Researchers have suggested different reasons teachers choose to leave the profession; however, the motivations for teachers who persist in the profession are unclear. External factors such as nonsupportive administration, student discipline, inadequate planning time, lack of resources, and poor teacher preparation programs are frequently cited in the teacher retention literature as influences leading to higher attrition rates (Geiger & Pivovarova, 2018; Ingersoll & Strong, 2011; Ingersoll, 2012; Ingersoll et al., 2018; Worth & De Lazzari, 2017). Conversely, little is known about the effects of internal factors, personal-level qualities, teacher retention, and attrition. Hamman et al. (2010) theorized that despite challenges, those who remain in the profession must possess some internal, insulating quality that allows them to persist. Richardson and Watt (2010) suggested that teachers with certain internal motivational profiles were more likely to be retained. Teacher grit was suggested as one of the possible insulating or buffering traits held by persisting teachers who

continually overcame the rigors of the profession (Duckworth & Quinn, 2009; Robertson-Kraft & Duckworth, 2014).

Additionally, these findings help to extend the issue raised by Duckworth and Quinn (2009), as they suggested that teacher grit was associated with improved student outcomes, further necessitating research to examine the relationship between grit and teacher retention. To support and sustain maximum student growth, teachers must persist in their professional practice. There was a heavy focus on the use of the Grit Scale for academic achievement among students, but there is a lack of current literature on teacher outcomes, such as perseverance and retention (Robertson-Kraft & Duckworth, 2014). Teaching is difficult work; thus, investigating the characteristics and traits of those teachers who persisted in the profession despite such highly stressful conditions is critical in addressing the problem of teacher retention. The knowledge gained from this study can potentially impact district hiring practices by identifying and recruiting applicants who have favorable characteristics for sustainability within the teaching profession. Through the results of this study, the researcher can build on previous studies by investigating the relationships between grit and demographic factors and the relationship to teacher retention within a suburban Atlanta school district.

Limitations

Though findings from this study are believed to have several implications for research and practice, various limitations were present that may have influenced study outcomes and must be considered. First, the generalizability of study results is potentially limited due to the convenience sampling procedure used. Participants included 468 self-reported classroom teachers across 28 schools of one suburban Atlanta public school district. The ability to draw inferences to other settings is affected by the threat of generalizability (Gall et al., 2007).

Implications from collected data may not be extrapolated to other school districts or settings. Furthermore, experiences may differ in charter and private school settings and, therefore, inferences made to such settings based on study results should be limited.

There were also potential threats to internal validity. Specifically, there may have been low internal validity based on the correlational design and the inability to manipulate variables to detect changes in orders. Non-experimental research in which there is no manipulation of variables or random assignment reduces internal validity. Additionally, non-experimental studies do not allow the researcher to make a cause-and-effect claim. Correlation is not proof of causation. Due to the possible presence of confounding or extraneous variables, more studies are needed to determine if other variables might be influencing the results.

The Grit-S scale is also a self-report instrument, which can be limited in its reliability. There may have been biases due to lower response rates, a lack of authenticity, or personal biases that do not accurately reflect the phenomenon of interest. When considering the significance of these findings, these limitations and threats to validity and generalizability must be considered. Recommendations for addressing these limitations and adding to the literature associated with teaching experience and the concept of grit are provided in the following sections.

Recommendations for Future Research

Based on the limitations discussed above, several recommendations can be made for future research. Due to threats to generalizability, there is now a need to consider how the concept of grit manifests in different populations and how this concept is tested and measured using different instrumentations. Recommendations for future research should be thought of as ways to further increase knowledge in the field of study. In addition to addressing these research design limitations, there are several steps researchers can take to advance understanding as to the

concept of grit in educators. Researchers have suggested different reasons teachers choose to leave the profession; however, the motivations for teachers who persist in the profession are unclear. External factors such as nonsupportive administration, student discipline, inadequate planning time, lack of resources, and poor teacher preparation programs are frequently cited in the teacher retention literature as influences leading to higher attrition rates (Geiger & Pivovarova, 2018; Ingersoll & Strong, 2011; Ingersoll, 2012; Ingersoll et al., 2018; Worth & De Lazzari, 2017). Future research is needed to determine the extent to which grit predicts retention.

Additionally, there is a lack of current literature on teacher outcomes, such as perseverance and retention, and this gap in the literature still warrants attention (Robertson-Kraft & Duckworth, 2014). Finally, although the Grit Scale was used to measure student academic achievement, there is a lack of research on using the Grit Scale for teacher outcomes, such as perseverance and retention. Addressing this gap is necessary to determine the extent to which grit influences these outcomes in other educational contexts and settings.

Summary

In conclusion, this quantitative, predictive, correlational study aimed to examine the relationship between grit and years of classroom experience and the predictors of age, gender, level of education, and grade levels and subjects taught. The purpose of this chapter was to provide a discussion of the findings. The researcher first presented a summary of the main findings. It was found that model was statistically significant, $F(17, 450) = 31.12, p < .001$. The model's effect size was large, $R^2 = .54$, indicating that the linear combination of predictor variables can explain approximately 54% of the variance of the criterion variable. The null hypothesis was rejected, and it was concluded that there was a statistically significant predictive

relationship between the years of teaching experience and the linear combination of overall grit, age, gender, level of education, grade level taught, and subjects taught.

The researcher discussed these findings and their extension of and alignment with literature presented in Chapter 2 associated with the relationship between teaching experience and the other study variables. Implications of these findings for practice, research, and social change were then discussed. The researcher restated the delimitations and limitations identified in Chapter 1 and considered the extent to which they influenced study outcomes. Based on these limitations and the implications of these findings, recommendations were then offered for future research. Findings help address previous calls for research. Researchers have suggested different reasons why teachers choose to leave the profession; however, the motivations for teachers who persist in the profession are unclear. External factors such as nonsupportive administration, student discipline, inadequate planning time, lack of resources, and poor teacher preparation programs are frequently cited in the teacher retention literature as leading to higher attrition rates.

Additionally, these findings help to extend the issue raised by Duckworth and Quinn (2009), who suggested that teacher grit was associated with improved student outcomes, further necessitating research to examine the relationship between grit and teacher retention. To support and sustain maximum student growth, teachers must persist in their professional practice to develop grit. Schools and school districts are advised to build programs based on grit theory to maximize this outcome.

REFERENCES

- American Association of the Employment in Education (2009). *Executive summary: Educator supply and demand in the United States*.
<http://aaee.org/cwt/external/wcpages/resource/>
- Aragon, S. (2016). Teacher shortages: What we know. Teacher shortage series. *Education Commission of the States*. <https://files.eric.ed.gov/fulltext/ED565893.pdf>
- Argon, T., & Kaya, A. (2018). Examination of grit levels of teachers according to personal variables. *Journal of Education and Training Studies*, 6(3a), 45–53.
<https://www.doi.org/10.11114/jets.v6i3a3157>
- Bandura, A. (1977). *Social learning theory*. Prentice-Hall.
- Bastick, T. (2000). *The measurement of teacher motivation: Cross-cultural and gender comparisons* [Paper presentation]. 29th Annual Meeting of the Society for Cross-Cultural Research, New Orleans, USA. <https://eric.ed.gov/?id=ED451254>
- Billingsley, B., & Bettini, E. (2019). Special education teacher attrition and retention: A review of the literature. *Review of Educational Research*, 89(5), 697–744. <https://doi.org/10.3102/0034654319862495>
- Boyd, D., Lankford, H., Grossman, P., Loeb, S., & Wyckoff, J. (2006). How changes in entry requirements alter the teacher workforce and affect student achievement. *Education Finance and Policy*, 1(2), 176–216.
- Brace, N., Kemp, R., & Snelger, R. (2009). *Spss for psychologists* (4th ed.). Macmillan Publishers.
- Brookhart, S. M., & Freeman, D. J. (1992). Characteristics of entering teacher candidates. *Review of Educational Research*, 62, 37-60.

- Bruinsma, M., & Jansen, E. P. W. A. (2010). Is the motivation to become a teacher related to pre-service teachers' intentions to remain in the profession? *European Journal of Teacher Education*, *33*(2), 185–200.
- Carson, R. L., & Chase, M. A. (2009). An examination of physical education teacher motivation from a self-determination theoretical framework. *Physical Education and Sport Pedagogy*, *14*, 335–353. <https://www.doi.org/10.1080/17408980802301866>
- Carver-Thomas, D., & Darling-Hammond, L. (2017). *Teacher turnover: Why it matters and what we can do about it*. Learning Policy Institute.
- Chase, B. (2000). Show us the money. *NEA Today*, *18*(7), 5.
- Chiong, C., Menzies, L., & Parameshwaran, M. (2017). Why do long-serving teachers stay in the teaching profession? Analysing the motivations of teachers with 10 or more years' experience in England. *British Educational Research Journal*, *43*(6), 1083–1110.
- Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2006). Teacher-student matching and the assessment of teacher effectiveness. *Journal of Human Resources*, *41*(4), 778–820.
- Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). *How and why do teacher credentials matter for student achievement?* (NBER Working Paper No. 12828). Urban Institute, National Center for Analysis of Longitudinal Data in Education Research. http://www.caldercenter.org/PDF/1001058_Teacher_Credentials.pdf
- Colson, T. L., & Satterfield, C. (2018). The effects of strategic compensation on teacher retention. *Power and Education*, *10*(1), 92–104. <https://www.doi.org/10.1177/1757743818758782>

- Cormier, D. L., Dunn, J. G., & Dunn, J. C. (2019). Examining the domain specificity of grit. *Personality and Individual Differences, 139*, 349–354.
<https://www.doi.org/10.1016/j.paid.2018.11.026>
- Crede, M., Tynan, M. C., & Harms, P. D. (2016). Much ado about grit: A meta-analytic synthesis of the grit literature. *Journal of Personality and Social Psychology, 113*, 492–511.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage.
- Dahlkamp, S., Peters, M., & Schumacher, G. (2017). Principal self-efficacy, school climate, and teacher retention: A multi-level analysis. *Alberta Journal of Educational Research, 63*(4), 357–376. <https://journalhosting.ucalgary.ca/index.php/ajer/article/view/56351>
- Daniels, E. (2016). Logistical factors in teachers' motivation. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 89*(2), 61–66.
- Daniels, E. (2017). Curricular factors in middle school teachers' motivation to become and remain effective. *RMLE Online, 40*(5), 1–14.
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Null, 24*(2), 97–140. <https://10.1080/10888691.2018.1537791>
- Darling-Hammond, L., Guha, R., & Hyler, M. (2018). *Teacher shortages in California: Status, sources, and potential solutions*. Learning Policy Institute.
- Dassa, L., & Derose, D. S. (2017). Get in the teacher zone: A perception study of preservice teachers and their teacher identity. *Issues in Teacher Education, 26*(1), 101–113.
<https://files.eric.ed.gov/fulltext/EJ1139340.pdf>

- Duckworth, A. (2020). *Research*. Angela Duckworth. <http://angeladuckworth.com/research/>
- Duckworth, A., & Gross, J. J. (2014). Self-control and grit: Related but separable determinants of success. *Sage Journals*, 23(5), 319–325. <https://doi.org/10.1177/0963721414541462>
- Duckworth, A. L. (2013). True grit. *The Observer*, 26(4), 1–3.
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 92(6), 1087–1101. <http://dx.doi.org.ezproxy.liberty.edu/10.1037/0022-3514.92.6.1087>
- Duckworth, A. L., & Quinn, P. D. (2009). Development and validation of the Short Grit Scale (GRIT–S). *Journal of Personality Assessment*, 91(2), 166–174.
https://www.researchgate.net/profile/Angela_Duckworth2/publication/23996619_Development_and_validation_of_the_Short_Grit_Scale_GRIT-S/links/558fc09908aed6ec4bf53a53.pdf
- Dupriez, V., Delvaux, B., & Lothaire, S. (2016). Teacher shortage and attrition: Why do they leave? *British Educational Research Journal*, 42(1), 21–39.
<https://www.doi.org/10.1002/berj.3193>
- Eren, A., & Tezel, K. V. (2010). Factors influencing teaching choice, professional plans about teaching, and future time perspective: A mediational analysis. *Teaching and Teacher Education*, 26(7), 1416–1428.
- Eskreis-Winkler, L., Shulman, E. P., Beal, S. A., & Duckworth, A. L. (2014). The grit effect: Predicting retention in the military, the workplace, school and marriage. *Frontiers in Psychology*, 3. <https://doi.org/10.3389/fpsyg.2014.00036>
- Ewing, R., & Smith, D. (2003). Retaining quality early career teachers in the profession. *English Teaching Practice and Critique*, 2(1), 15–30.

- Fabelico, F. L., & Afalla, B. T. (2020). Perseverance and passion in the teaching profession: Teachers' grit, self-efficacy, burnout, and performance. *Journal of Critical Reviews*, 7(11), 108–119.
- Fischer, C., Fishman, B., Dede, C., Eisenkraft, A., Frumin, K., Foster, B., Lawrenz, F., Levy, A. J., & McCoy, A. (2018). Investigating relationships between school context, teacher professional development, teaching practices, and student achievement in response to a nationwide science reform. *Teaching and Teacher Education*, 72(1), 107–121.
<https://doi.org/10.1016/j.tate.2018.02.011>
- Fraenkel, J. R., & Wallen, N. E. (1991). Quantitative research in social studies education. *Handbook of research on social studies teaching and learning* (pp. 67–82).
- Gall, M., Gall, J., & Borg, R. (2007). *Educational research: An introduction* (8th ed.). Pearson Education.
- García, E., & Weiss, E. (2019). *The teacher shortage is real, large and growing, and worse than we thought: Report 1 in the “perfect storm in the teacher labor market” series*. Economic Policy Institute.
- Geiger, T., & Pivovarova, M. (2018). The effects of working conditions on teacher retention. *Teachers and Teaching*, 24(6), 604–625.
<https://www.doi.org/10.1080/13540602.2018.1457524>
- Georgia Department of Education. (2021). *Fiscal year 2021-3 data report*.
https://app3.doe.k12.ga.us/ows-bin/owa/fte_pack_ethnicsex.entry_form
- Gonzalez, L., Stallone Brown, M., & Slate, J. R. (2008). Teachers who left the teaching profession: A qualitative understanding. *The Qualitative Report*, 13(1), 1–11.
<https://doi.org/10.46743/2160-3715/2008.1601>

- Granello, D. H., & Wheaton, J. E. (2004). Online data collection: Strategies for research. *Journal of Counseling and Development, 82*(4), 387.
- Gu, Q., & Day, C. (2013). Challenges to teacher resilience: Conditions count. *British Educational Research Journal, 39*, 22–44.
- Guarino, C. M., Santibanez, L., & Daley, G. A. (2006). Teacher recruitment and retention: A review of the recent empirical literature. *Review of Educational Research, 76*(2), 173–208.
- Gulosino, C., Franceschini, L., & Hardman, P. (2016). The influence of balance within the competing values framework and school academic success on teacher retention. *Journal of Organizational and Educational Leadership, 2*(1).
<https://files.eric.ed.gov/fulltext/EJ1131522.pdf>
- Hamman, D. D., Gosselin, K. P., Romano, J., & Bunuan, R. (2010). Using possible-selves theory to understand the identity development of new teachers. *Teaching and Teacher Education, 26*(7). <https://doi.org/10.1016/j.tate.2010.03.005>
- Han, J., & Yin, H. (2016). Teacher motivation: Definition, research development and implications for teachers. *Cogent Education, 3*(1), Article 1217819.
<https://doi.org/10.1080/2331186X.2016.1217819>
- Hanushek, E. A. (2007). The single salary schedule and other issues of teacher pay. *Peabody Journal of Education, 82*(4), 574–586.
- Hanushek, E. A., Rivkin, S. G., & Schiman, J. C. (2016). *Dynamic effects of teacher turnover on the quality of instruction* (NBER Working Paper 22472).
<http://www.nber.org/papers/w22472>

- Heinz, M. (2015). Why choose teaching? An international review of empirical studies exploring student teachers' career motivations and levels of commitment to teaching, *Educational Research and Evaluation: An International Journal on Theory and Practice*, 21(3), 258–297.
- Huang, F. L. (2009). *Is experience the best teacher? A multilevel analysis of teacher qualifications and academic achievement in low performing schools* [Paper presentation]. Annual Meeting of the American Educational Research Association, San Diego, California, USA.
- Huberman, M., Grounauer, M., & Marti, J. (1993). *The lives of teachers*. Teachers College Press.
- Ingersoll, R. (2010). Is the supply of mathematics and science teacher sufficient? *American Education Research Journal*, 47(3), 563–594.
- Ingersoll, R., & Strong, M. (2011). The impact of induction and mentoring for beginning teachers: A critical review of the research. *Review of Educational Research*, 81(2), 201–233.
- Ingersoll, R. M. (2012). Beginning teacher induction: What the data tells us. *Phi Delta Kappan*, 93(8), 47–51.
- Ingersoll, R. M., May, H., & Collins, G. (2017). *Minority teacher recruitment, employment, and retention: 1987 to 2013*. Learning Policy Institute.
https://repository.upenn.edu/gse_pubs/496
- Ingersoll, R. M., Merrill, E., Stuckey, D., & Collins, G. (2018). Seven trends: The transformation of the teaching force – Updated October 2018. *CPRE Research Reports*.
https://repository.upenn.edu/cpre_researchreports/108

- Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational Leadership, 60*, 30–33.
- Jachimowicz, J. M., Wihler, A., Bailey, E. R., & Galinsky, A. D. (2018). Why grit requires perseverance and passion to positively predict performance. *Proceedings of the National Academy of Sciences of the United States of America, 115*(40), 9980–9985.
<https://www.doi.org/10.1073/pnas.1803561115>
- Johnson, S. M., & Birkeland, S. (2006). Fast-track certification: Can we prepare teachers both quickly and well? *Education Week, 25*(23).
- Kalyar, M. N., Ahmad, B., & Kalyar, H. (2018). Does teacher motivation lead to student motivation? *Theoretical and Applied Research*. <https://www.doi.org/10.17323/1814-9545-2018-3-91-119>
- Kannangara, C. S., Allen, R. E., Waugh, G., Nahar, N., Khan, S., Rogerson, S., & Carson, J. (2018). All that glitters is not grit: Three studies of grit in university students. *Frontiers in Psychology, 9*(1539), 1–15. <https://www.doi.org/10.3389/fpsyg.2018.01539>
- Karimi, M. N., & Ziaabadi, F. (2019). Teachers' motivation to teach, teacher credibility, metacognitive awareness, and students' motivation and affective learning: A structural equation modeling analysis. *Teaching English Language, 13*(1), 147–176.
http://www.teljournal.org/article_89275.html
- Kini, T., & Podolsky, A. (2016). *Does teaching experience increase teacher effectiveness? A review of the research*. Learning Policy Institute.
- Kunter, M., Klusmann, U., Baumert, J., Richter, D., Voss, T., & Hachfeld, A. (2013). Professional competence of teachers: Effects on instructional quality and student development. *Journal of Educational Psychology, 105*(3), 805.

- Kyriacou, C. (2000). *Stress busting for teachers*. Stanley Thomas.
- Kyriacou, C., & Kunc, R. (2007). Beginning teachers' expectations of teaching. *Teaching and Teacher Education*, 23(8), 1246–1257. <https://doi.10.1016/j.tate.2006.06.002>
- Ladd, H. F., & Sorensen, L. C. (2016). Returns to teacher experience: Student achievement and motivation in middle school. *Education Finance and Policy*, 12(2), 241–279. https://doi.org/10.1162/EDFP_a_00194
- Lambert, R., O'Donnell, M., Kusherman, J., & McCarthy, C. J. (2006). Teacher stress and classroom structural characteristics in preschool settings. In R. Lambert & C. McCarthy (Eds.), *Understanding teacher stress in an age of accountability* (pp. 105–120). Information Age.
- Lochmiller, C. R., Sugimoto, T. J., & Muller, P. A. (2016). Teacher retention, mobility, and attrition in Kentucky public schools from 2008 to 2012. REL 2016-116. *Regional Educational Laboratory Appalachia*. <https://files.eric.ed.gov/fulltext/ED562734.pdf>
- Malderez, A., Hobson, A. J., Tracey, L., & Kerr, K. (2007). Becoming a student teacher: Core features of the experience. *European Journal of Teacher Education*, 30(3), 225–248.
- Mertler, C. A. (2016). Should I stay or should I go? Understanding teacher motivation, job satisfaction, and perceptions of retention among Arizona teachers. *International Research in Higher Education*, 1(2), 34–45. <https://www.doi.org/10.5430/irhe.v1n2p34>
- Meyer, S. J., Espel, E. V., Weston-Sementelli, J. L., & Serdiouk, M. (2019). Teacher retention, mobility, and attrition in Colorado, Missouri, Nebraska, and South Dakota. REL 2019-001. *Regional Educational Laboratory Central*. <https://files.eric.ed.gov/fulltext/ED593492.pdf>

- Moore, L., Rosenblatt, K., Badgett, K., & Eldridge, J. (2018). Urban Texas teacher retention: Unbelievable empirical factors tied to urban teacher persistence and retention. *Literacy Information and Computer Education Journal*, 9(2). <https://infonomics-society.org/wp-content/uploads/licej/published-papers/volume-9-2018/Urban-Texas-Teacher-Retention.pdf>
- Mori, T. (1965). Structure of motivations for becoming a teacher. *Journal of Educational Psychology*, 56(4), 175–183.
- Morris, J. E., & Imms, W. (2018). Validation of the TAP tool, an instrument measuring the impact of teacher retention intervention strategies. *Education and Society*, 36(2), 15–27.
- National Commission on Teaching and America's Future. (2010). *Who will teach? Experience matters*. National Commission on Teaching and America's Future.
- Newberry, M., & Allsop, Y. (2017). Teacher attrition in the USA: The relational elements in a Utah case study. *Teachers and Teaching*, 23, 863–880.
- New Teacher Center. (2013). *Preliminary findings of the 2013 Teaching, Empowering, Leading and Learning (TELL) Tennessee survey*.
http://telltennessee.org/uploads/File/TN13_brief_prelim.pdf
- Nguyen, T. D. (2021). Linking school organizational characteristics and teacher retention: Evidence from repeated cross-sectional national data. *Teaching and Teacher Education*, 97, 1–14.
- Oke, A. O., Ajagbe, M. A., Ogbari, M. E., & Adeyeye, J. O. (2016). Teacher retention and attrition: A review of the literature. *Mediterranean Journal of Social Sciences*, 7(2S1), 371. <https://www.doi.org/10.5901/mjss.2016.v7n2s1p371>

- Organization for Economic Co-Operation and Development. (2009). *Improving equity in education*. Informal meeting of OECD ministers of education. OECD, Oslo.
- Papay, J. P., Bacher-Hicks, A., Page, L. C., & Marinell, W. H. (2017). The challenge of teacher retention in urban schools: Evidence of variation from a cross-site analysis. *Educational Researcher*, 46(8), 434–448. <https://www.doi.org/10.3102/0013189X17735812>
- Papay, J. P., & Kraft, M. A. (2016). The productivity costs of inefficient hiring practices: Evidence from late teacher hiring. *Journal of Policy Analysis and Management*, 35(4), 791–817.
- Perryman, J., & Calvert, G. (2020). What motivates people to teach, and why do they leave? Accountability, performativity and teacher retention. *British Journal of Educational Studies*, 68(1), 3–23. <https://www.doi.org/10.1080/00071005.2019.1589417>
- Podolsky, A., Kini, T., Bishop, J., & Darling-Hammond, L. (2016). *Solving the teacher shortage: How to attract and retain excellent educators*. Learning Policy Institute.
- Podolsky, A., Kini, T., & Darling-Hammond, L. (2019). Does teaching experience increase teacher effectiveness? A review of US research. *Journal of Professional Capital and Community*, 4(4), 286–308.
- Ravitch, S. M., & Riggan, M. (2017). *Reason & rigor: How conceptual frameworks guide research* (2nd ed.). Sage.
- Rice, J. K. (2003). *Teacher quality: Understanding the effectiveness of teacher attributes*. Economic Policy Institute.
- Richardson, P. W., & Watt, H. M. G. (2005). I've decided to become a teacher: Influences on career change. *Teaching and Teacher Education*, 21(5), 475–489.

- Richardson, P. W., & Watt, H. M. G. (2010). Current and future directions in teacher motivation research. In T. C. Urdan & S. A. Karabenick (Eds.), *The decade ahead: Applications and contexts of motivation and achievement; Advances in motivation and achievement* (pp. 139–173). Emerald.
- Rinke, C. R. (2008). Understanding teachers' careers: Linking professional life to professional path. *Educational Research Review*, 3, 1–13.
- Robertson-Kraft, C., & Duckworth, A. L. (2014). True grit: Trait-level perseverance and passion for long-term goals predicts effectiveness and retention among novice teachers. *Teachers College Record*, 116(3). <http://www.tcrecord.org/Content.asp?ContentId=17352>.
- Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal*, 50(1), 4–36. <https://doi.org/10.3102/0002831212463813>
- Rots, I., Aelterman, A., Devos, G., & Vlerick, P. (2010). Teacher education and the choice to enter the teaching profession: A prospective study, *Teaching and Teacher Education*, 26(8), 1619–1629.
- Shechtman, N., DeBarger, A., Dornsife, C., Rosier, S., & Yarnall, L. (2013). *Promoting grit, tenacity, and perseverance: Critical factors for success in the 21st century*. SRI International.
- Shifrer, D., Turley, R. L., & Heard, H. (2017). Do teacher financial awards improve teacher retention and student achievement in an urban disadvantaged school district? *American Educational Research Journal*, 54(6), 1117–1153. <https://www.doi.org/10.3102/0002831217716540>

- Sinclair, C. (2008). Initial and changing student teacher motivation and commitment to teaching. *Asia-Pacific Journal of Teacher Education*, 36(2), 79–104.
- Sinclair, C., Dowson, M., & McInerney, D. M. (2006). Motivations to teach: Psychometric perspectives across the first semester of teacher education. *Teachers College Record*, 108, 1132–1154.
- Skaalvik, E. M., & Skaalvik, S. (2015). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and Teacher Education*, 27, 1029–1038.
<https://www.doi.org/10.1016/j.tate.2011.04.001>
- Skaalvik, E. M., & Skaalvik, S. (2016). Teacher stress and teacher self-efficacy as predictors of engagement, emotional exhaustion, and motivation to leave the teaching profession. *Creative Education*, 7(13), 1785.
<https://www.doi.org/10.4236/ce.2016.713182>
- Sorensen, L. C., & Ladd, H. (2018). *The hidden costs of teacher turnover* (CALDER Working Paper No. 203-0918-1).
https://caldercenter.org/sites/default/files/CALDER%20WP%20203-0918-1_0.pdf
- Sugiyanto, S., Hardyanto, W., Rusilowati, A., Nugroho, S. E., Supardi, K. I., Wahyuni, S., & Wiyanto, W. (2019). Physics vs mathematics teacher candidates' grit trait level: A case study of Universitas Negeri Semarang undergraduate students. *Journal of Physics: Conference Series*, 1170(1). <https://www.doi.org/10.1088/1742-6596/1170/1/012043>
- Sutcher, L., Darling-Hammond, L., & Carver-Thomas, D. (2016). *A coming crisis in teaching? Teacher supply, demand, and shortages in the U.S.* Learning Policy Institute.

- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Allyn & Bacon/Pearson Education.
- Trochim, W. M., Donnelly, J. P., & Arora, K. (2016). *Research methods: The essential knowledge base*. Cengage Learning.
- Usher, E. L., Li, C. R., Butz, A. R., & Rojas, J. P. (2019). Perseverant grit and self-efficacy: Are both essential for children's academic success? *Journal of Educational Psychology, 111*(5), 877.
- Vagi, R., Pivovarova, M., & Miedel Barnard, W. (2019). Keeping our best? A survival analysis examining a measure of preservice teacher quality and teacher attrition. *Journal of Teacher Education, 70*(2), 115–127. <https://doi.org/10.1177/0022487117725025>
- Van Selm, M., & Jankowski, N. W. (2006). Conducting online surveys. *Quality and Quantity, 40*, 435–456. <https://doi.org/10.1007/s11135-005-8081-8>
- Waddell, J. H. (2010). Fostering relationships to increase teacher retention in urban schools. *Journal of Curriculum and Instruction, 4*(1), 70–85. <http://www.joci.ecu.edu>
- Wang, H. H. (2004). Why teach science? Graduate science students' perceived motivations for choosing teaching as a career in Taiwan. *International Journal of Science Education, 26*(1), 113–128.
- Warner, R. M. (2013). *Applied statistics: From bivariate through multivariate techniques* (2nd ed.). Sage.
- Watt, H. M. G., & Richardson, P. W. (2007). Motivational factors influencing teaching as a career choice: Development and validation of the FIT-choice scale. *Journal of Experimental Education, 76*(3), 167–202.

- Watt, H. M. G., & Richardson, P. W. (2008). Motivations, perceptions, and aspirations concerning teaching as a career for different types of beginning teachers. *Learning and Instruction, 18*(5), 408–428.
- Webb, E. (1915). Character and intelligence. *British Journal of Psychology Monographs, 7*(3), 1–99.
- Wolters, C. A., & Hussain, M. (2014). Investigating grit and its relations with college students' self-regulated learning and academic achievement. *Metacognition Learning, 10*, 293–311. <https://doi.org/10.1007/s11409-014-9128-9>
- Worth, J., & De Lazzari, G. (2017). *Teacher retention and turnover research: Research update 1: Teacher retention by subject*. National Foundation for Educational Research. <https://www.nfer.ac.uk/media/2044/nufs01.pdf>.
- Yeboah, A., & Adom, D. (2016). Rural senior high school teachers' motivation and its effects on their retention. *British Journal of Education, 4*(11), 84–92.
- Zhai, X. (2019). Becoming a teacher in rural areas: How curriculum influences government-contracted pre-service physics teachers' motivation. *International Journal of Educational Research, 94*, 77–89.
- Zhang, G., & Zeller, N. (2016). A longitudinal investigation of the relationship between teacher preparation and teacher retention. *Teacher Education Quarterly, 43*(2), 73. https://link-gale-com.ezproxy.liberty.edu/apps/doc/A454270969/AONE?u=vic_liberty&sid=AONE&xid=cac21ca9

APPENDIX A: Demographic Questions

General Information

Please answer each question as accurately as possible.

2. Are you a CURRENT classroom teacher? *

Yes

No

3. Are you 18 years of age or older? *

Yes

No

4. Age *

Enter your answer

5. Gender *

Male

Female

Prefer not to say

6. Highest level of education *

Bachelor's Degree (for example: BA, BBA, and BS)

Master's Degree (for example: MA, MS, and MEng)

Education Specialist Degree (for example: Ed.S)

Professional Degree (for example: MD, DDS, JD)

Doctorate (for example: PhD or EdD)

7. Grade level(s) currently taught (more than one may be selected) *

- Preschool
- Kindergarten
- 1st grade
- 2nd grade
- 3rd grade
- 4th grade
- 5th grade
- 6th grade
- 7th grade
- 8th grade
- 9th grade
- 10th grade
- 11th grade
- 12th grade

8. Subject(s) taught *

- Math
- English/Literature/Reading
- Science/Physics/Biology
- History/Social Studies/Economics
- Business/Finance/Accounting
- Music/Theater/Art
- Special Education
- Other

9. Number of years as a classroom teacher *

APPENDIX B: IRB Approval

Date: 1-6-2022

IRB #: IRB-FY21-22-443

Title: The grit to not quit - An examination of the relationship between grit and teacher retention

Creation Date: 11-19-2021

End Date:

Status: **Approved**

Principal Investigator: Alexia Bultman

Review Board: Research Ethics Office

Sponsor:

Study History

Submission Type	Initial	Review Type	Exempt	Decision	Exempt
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Key Study Contacts

Member	Angela Smith	Role	Co-Principal Investigator	Contact	██████████
Member	Alexia Bultman	Role	Principal Investigator	Contact	██████████
Member	Alexia Bultman	Role	Primary Contact	Contact	██████████

APPENDIX C: Permission To Survey The District

[Redacted]

[Redacted]

February 7, 2022

Ms. Alexia Bultman

[Redacted]

SENT VIA EMAIL

Dear Ms. Bultman,

Your research project titled, The grit to not quit: An examination of the relationship between grit and teacher retention, has been approved. Listed below is the school where approval to conduct the research is complete. Please work with the school administrator to schedule administration of instruments or conduct interviews.

Schools

- [Redacted] Middle School
- [Redacted] Elementary School
- [Redacted] Elementary School
- [Redacted] Middle School
- [Redacted] Elementary School
- [Redacted] Middle School
- [Redacted] Middle School
- [Redacted] Middle School
- [Redacted] Elementary School
- [Redacted] Middle School
- [Redacted] Elementary School
- [Redacted] High School
- [Redacted] Elementary School
- [Redacted] Elementary School
- [Redacted] High School
- [Redacted] Middle School
- [Redacted] Middle School
- [Redacted] Middle School
- [Redacted] Middle School
- [Redacted] High School
- [Redacted] Elementary School

BOARD OF EDUCATION [Redacted]

SUPERINTENDENT [Redacted]

[REDACTED] Middle School
[REDACTED] Middle School
[REDACTED] Elementary School
[REDACTED] Middle School
[REDACTED] Elementary School
[REDACTED] High School
[REDACTED] High School

Should modifications or changes in research procedures become necessary during the research project, changes must be submitted in writing to the department of Accountability, Research & Grants prior to implementation. At the conclusion of your research project, you are expected to submit a copy of your results to this office. Results cannot reference the [REDACTED] School District or any District schools or departments.

Research files are not considered complete until results are received. If you have any questions regarding the process, contact my office at [REDACTED].

Sincerely,

[REDACTED]

BOARD OF EDUCATION

[REDACTED]

SUPERINTENDENT

[REDACTED]

APPENDIX D: Recruitment Email

Dear Principal,

This email is to ask that you please forward this correspondence to the teachers within your building. This research has been approved by the [REDACTED] School District.

Why do you continue teaching?

Anyone who has ever taught knows it is not for the faint of heart. It takes more than just content knowledge to choose to stay in the classroom year after year.

Grit is the ability to keep working toward a goal, overcome challenges, and stick with something even when it is hard. As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a doctoral degree. The purpose of my research is to determine the relationship between grit and teacher retention, and I am contacting you as an eligible participant, inviting you to join my study. This research has been approved by the [REDACTED] School District.

To participate, please [Click Here](#).

Participants, if willing, will be asked to answer a few demographic questions followed by 8 multiple choice questions. Participation will be completely anonymous, and no personal, identifying information will be collected. The survey should take less than 5 minutes to complete.

A consent document is provided as the first page of the survey. The consent document contains additional information about my research. After you have read the consent form, please click the next button to proceed to the survey. Doing so will indicate that you have read the consent information and would like to take part in the survey.

Alexia Bultman
Liberty University Doctoral Candidate
[REDACTED]

APPENDIX E: Participant Consent

Consent

Title of the Project: The Grit to Not Quit - An Examination of the Relationship between Grit and Teacher Retention

Principal Investigator: Alexia Bultman, Doctoral Candidate, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study examining teacher retention. In order to participate, you must be 18 years of age or older and either a certified general education or special education teacher, in grades preschool-12, currently teaching in the classroom. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research project.

What is the study about and why is it being done?

Teacher retention has been and continues to be a serious problem for school systems across the United States, placing financial burden on districts to recruit and train new teachers as well as having negative effects on student achievement. The purpose of this study is to determine if grit level, which is the perseverance and passion for long-term goals, in combination with demographic factors, leads to greater teacher retention.

What will happen if you take part in this study?

If you agree to be in this study, I would ask you to do the following:

1. Complete an online, anonymous survey. The survey should take no longer than 8 minutes to complete.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include the possible gathering of valuable information that will be provided to local schools, teacher education programs and higher education institutions, as well as insight on recruitment strategies that will attract individuals with specific motivational profiles or characteristics inclined to persistence; thus, potentially increasing teacher retention.

What risks might you experience from being in this study?

The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

Participant responses to the online survey will be anonymous and stored securely in an online database that only the researcher can access. Digital records for this study will be kept private and stored on a password-locked computer. Physical records will be stored securely in a locked filing cabinet in the researcher's home, and only the researcher will have access to the records. After three years, all digital records will be deleted from the computer and physical records will be shredded. The data may be used in future presentations.

Does the researcher have any conflicts of interest?

The researcher serves as an Assistant Principal within the Cobb County School District. To limit potential or perceived conflicts the study will be anonymous, so the researcher will not know who participated. This disclosure is made so that you can decide if this relationship will affect your willingness to participate in this study. No action will be taken against an individual based on his or her decision to participate in this study.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University or the Cobb County School District. If you decide to participate, you are free to not answer any question or withdraw at any time prior to submitting the survey without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please exit the survey and close your internet browser. Your responses will not be recorded or included in the study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Alexia Bultman. You may ask any questions you have now. If you have questions later, you are encouraged to contact her at [REDACTED] or [REDACTED]. Mrs. Bultman's faculty mentor is Dr. Angela Smith. Dr. Smith can be contacted at [REDACTED].

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this 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 email at irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

Before agreeing to be part of the research, please be sure that you understand what the study is about. You can print a copy of the document for your records. If you have any questions about the study later, you can contact the study team using the information provided above.

- I consent to participate in the study.
- I DO NOT consent to participate in the study.