

GRIT AND BELONGING IN ONE RURAL HIGH SCHOOL: A SURVEY STUDY

By

Amy M. Hemphill

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Dissertation Committee:
Catherine Gillespie, Ph.D., Chair
Doug Stilwell, Ed.D.
Darcie Vandegrift, Ph.D.

Dean of the School of Education: Janet M. McMahill, Ph.D.

Drake University

Des Moines, Iowa

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ABSTRACT

Despite the growing recognition of the importance of high school students' sense of belonging in school and positive effect grit can have on individuals' successes, research is needed to deeper explore potential relationships between students' senses of belonging and grit, along with a closer look at the varying types of schooling belonging in existence. Correlations indicated moderate relationships between school membership and peer relationships, peer relationships and teacher acceptance, school membership and teacher acceptance, and peer relationships with grit. This study provides information about statistical differences between students with parents of varying educational degrees and sense of belonging, along with relationships among various types of educational belonging.

CHAPTER 1

INTRODUCTION

“It is quite true that man lives by bread alone — when there is no bread. But what happens to man’s desires when there is plenty of bread and when his belly is chronically filled? At once other (and “higher”) needs emerge and these, rather than physiological hungers, dominate the organism. And when these in turn are satisfied, again new (and still “higher”) needs emerge and so on. This is what we mean by saying that the basic human needs are organized into a hierarchy of relative prepotency.”

(Maslow, 1943, p. 375).

The attribute of grit, a character trait that drives individuals to pursue long-term and challenging goals over a period of time (Duckworth, Peterson, Matthews, & Kelly, 2007; Strayhorn, 2013; Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014; Laursen, 2015), has been a preeminent topic in current research. From *O Magazine*, Oprah Winfrey’s monthly publication, to *Ted Talks*, prolific viral videos, Angela Duckworth has propelled the concept of “grit” and its many benefits into mainstream consciousness. Grit has been linked to achievement in various fields (schooling, military, and professional), and researchers have not only identified such positive correlations, but also identified various ways in which grittiness can be fostered (Christensen & Knezek, 2014; Duckworth, 2007; Eskries-Winkler, Shulman, Beal, & Duckworth, 2013; Robertson-Kraft & Duckworth, 2014, Strayhorn; 2013). Research identifies exposure to and explicit practice in goal setting and tracking, problem solving, risk-taking, and collaborative socialization as critical means of fostering grittiness in students (Ayidner & Kalender, 2015; Goodwin & Miller, 2013; Laursen, 2015; Zhang, Parker, Eberhardt, & Passalacqua, 2011); however, little research exists that

attempts to correlate students' psychological needs with grittiness, namely the psychological need of belongingness.

Soutter and Seider (2013), in summation of their personal correspondence with Terrell Strayhorn, researcher who identified a positive correlation between grit and academic success of African American male students at a predominantly white university, state, "Certainly, there is more work to be done in exploring this relationship between belonging and grit" (p. 354). Soutter and Seider (2013), continued, "Strayhorn speculated the relationship may, in fact, be a reciprocal one in which belonging reinforces grit, and vice-versa" (p. 354). Bowman, Hill, Denson, and Bronkema (2015) found, "Grittier students were more satisfied with college, had a greater sense of belonging, engaged in more cocurricular activities, and even reported more interactions with faculty" (p. 644)

Statement of the Problem

Although nationwide graduation rates are on the rise from 79% in 2010 to 82.3% in 2013 (Common Core of Data), and Iowa ranks highest in the country with a percentage rate of 90.5%, a significant discrepancy exists between Hispanic, black, and economically disadvantaged students and white students. The Common Core of Data (CCD) reports the following graduation rates during the 2013-2014 school year: 82% of Hispanics, 79% of blacks, and 84.1% of economically disadvantaged, while 92.2% of white students in Iowa graduated the same year. With the aforementioned correlation between grit and academic achievement, it seems paramount to identify new means of fostering grit in all students, but especially those within the achievement gap, increasing their academic performances and subsequent likelihood of graduation. This study examined the relationship between students' senses of belonging and grittiness in one rural Iowa high school.

Purpose

The purpose of the study was to develop an understanding of the varieties of student belonging predictors that influence high school students' grittiness through a researcher-constructed Student Belonging and Grit Survey. Demographic particulars for all survey participants were examined to gain a more comprehensive understanding of the relationship between belonging and grit. The identification of a correlation between a sense of belonging and grit will not only contribute to the body of research that is needed to shape public policy, but also provides insight into the development of educational programming that could assist students in enhancing their senses of grit. By fostering the development of the character trait of grit, students, administrators, and educational stakeholders can all be positively impacted.

Research Questions

The following research questions were developed to explore how the belonging factors of school membership, peer relationships, and teacher relationships are predictors of students' self-perceptions of grittiness.

1. What are the demographic characteristics of high school students who participated in the survey?
2. Is there a difference among high school students with varying degrees of parent education in their perceptions of the belonging factors of a) school membership, b) teacher acceptance, c) peer relationships?
3. Is there a difference between female high school students and male high school students in their perceptions of the belonging factors of a) school membership, b) teacher acceptance, c) peer relationships?

4. To what extent do the factors of sense of school belonging, peer relationships, and teacher acceptance have a relationship self-reported level of grittiness in high school students (9th-12th grade)?

Significance of the Study

The identification of a correlation between a sense of belonging and grit will not only contribute to the body of research that is needed to shape public policy, but also provides insight into the development of educational programming that will assist students in enhancing their senses of grit. Since the systematic teaching of grit is not easily executed and limited research exists to pinpoint effective ways in which grit can be instructed and practiced, an identified correlation between belonging and grit provides educators another route to foster the trait that is integral in pursuing long term-goals (i.e. graduation). Educators could target the belongingness predictors of grit through creative programming that facilitates experiences in which belongingness can be developed and strengthened in the educational setting. By fostering the development of the character trait of grit, students, administrators, and educational stakeholders will all be positively impacted.

Theoretical Framework

This study utilizes Abraham Maslow's theory of hierarchical needs, specifically the human, psychological need for a sense of belonging, as its theoretical framework. Maslow postulates that certain basic and psychological needs must be met prior to the human experience of self-actualization, or the meeting of one's inner potential. Maslow's hierarchy (1943) consists of the following needs, respectively: physiological needs (oxygen, food, water, shelter, clothing, and sleep), safety and security (health, employment, property, family, and

social stability), love and belonging (friendship, family intimacy, and a sense of connection), self-esteem (confidence, achievement, respect of others, and the need to be a unique individual), and self-actualization (morality, creativity, spontaneity, acceptance, experience purpose, meaning and inner potential). This study solely focuses on the middle component, love and belonging, and how the fulfillment (or lack of fulfillment) of this need (in relationship to peers, teachers, and school membership) correlates with students' grittiness, or perseverance when achievement challenging and long term goal)

Taormin and Gao (2013) defined a need as a "lack of something that is essential to an organism's existence or well-being", and they continue by denoting, "a 'thing' itself, is not a need; instead, the thing when it is lacking, creates the need that is felt by the organism" (p. 156). Taormin and Gao (2013) elaborated, stating that water itself is not a human need; rather it is the lack of water creates the need and drive for humans to seek water. Maslow (1943, p. 370) also addresses this notion,

Man is a perpetually wanting animal. Ordinarily the satisfaction of these wants is not altogether mutually exclusive, but only tends to be. The average member of our society is most often partially satisfied and partially unsatisfied in all of his wants.

The hierarchy principle is usually empirically observed in terms of increasing percentages of non-satisfaction as we go up the hierarchy.

Therefore, it can be inferred that a sense of belonging is not a need; instead, the lack of a sense of belonging creates a need for relationships, connection, and social stability.

Hagerty, Williams, and Hiroaki (2002) delineated belonging from other interpersonal constructs, such as social support and attachment, and they posited that the fulfillment of the sense of belonging need is a "vital component of mental health" (p.794).

Hagerty, Williams, and Hiroaki (2002) elaborated by identifying two characteristics of belonging, “(a) valued involvement or the experience of being valued and needed, and (b) fit, the person’s perception that his or her characteristics articulate with or complement the system or environment” (p. 794).

Summary of Methodology

This project utilizes quantitative research methods, namely the use of a survey through Google Forms, to obtain correlational data from high school students (grades 9-12) at one high school in Smalltown, Iowa. The researcher-made survey, which targets student demographics, senses of belonging, and perceptions of grittiness. The survey was sent to students after parent permission was obtained.

Limitations

Several limitations exist that one should consider when interpreting the findings. Limitations with the sample must be addressed; namely all participants of the study reside in rural Iowa, making generalizations to more heterogeneous samples impossible. Secondly, accurate and honest completion of the survey cannot be guaranteed due to the fact that the students were independently answering the questions, potentially unmotivated to accurately reflect upon the questions, and possibly inclined to see the survey as an unfavorable task, driving them to quick and heedless survey completion. Finally, the results of the data analysis can only indicate correlation between belonging and grittiness, making causal conclusions unable to be drawn. Since love and belonging are the third tier of Maslow’s hierarchy, it is possible that the psychological and safety needs (both of which are foundational to love and belonging) of the surveyed students have not been

met as well. Since these underlying needs were not assessed, it is impossible to rule the lack of such needs as causal factors.

Definition of Terms

The following descriptions provide an accurate description of pervasive ideas and constructs used and/or measured in this study.

Belonging. Personal involvement in a larger system or environment in which the individual feels like a valued and integral member (Hegarty et. al, 2002).

Grit. An individual's passion and tenacity to stay focused on long-term goals in the face of adversity and challenge; grit can also be thought of as stamina and "stick-withitness" (Duckworth, Peterson, Matthews, & Kelly, 2007).

Peer Group Membership. The adolescent feeling of inclusion and involvement within one or more peer groups.

School Membership. A sense of community or connection with the people, culture, and values of an educational system

Teacher Acceptance. The extent to which students feel accepted, supported, and valued by their teachers (Erkman, Caner, Sart, Börkan, & Sahan, 2010).

Summary

The purpose of this study is to provide a deeper understanding of the various subgroups of educational belonging that predict high school students' sense of grit. The presence of a correlation between educational belonging (in the form of school membership, peer group membership, or teacher acceptance) and grit could provide educational systems a better understanding of predictors of dropout and educational disenchantment. By examining these predictors, educational administrators, teachers,

school boards, policy makers, and reform seekers will have access to a more comprehensive understanding of critical variables.

CHAPTER 2

LITERATURE REVIEW

A sense of belonging has widely been recognized as a fundamental human essential in which past and contemporary researchers have credited as critical to survival (Ainsworth, 1989; Axelrod & Hamilton, 1981; Barash, 1977; Baumeister & Leary, 1995; Bowlby, 1969; Buss, 1990; Moreland, 1987). Maslow (1970) identified five different levels of human need through which human motivations move; this hierarchy includes belongingness and love, along with physiological, safety, esteem and self-actualization, as needs, illustrating the importance of human belonging in the quest for self-betterment. According to Maslow's the hierarchy, before esteem and self-actualization can occur, the need of belongingness must first be fulfilled (Aydiner & Kalender, 2015). Therefore, a strong sense of belonging can increase individuals' perceptions of their lives' meaning (Lambert, Stillman, Hicks, Kamble, Baumeister, & Fincham, 2012).

Baumeister and Leary (1995) identified a sense of belonging as a human need, as opposed to a want. Baumeister and Leary (1995) contended that both psychological and physical deficits are more likely to be manifested in people who are devoid of social relationships, stating, "human beings have a pervasive drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships" (p. 497). They elaborate on this contention by identifying two criteria to which the aforementioned interpersonal relationships must adhere: the relationships must be comprised of frequent and pleasant interactions and the relationship must be maintained through mutual concern and care for both members (Baumeister & Leary, 1995). If individuals' needs for belonging

are not met and maintained, serious psychological repercussions, such as sadness, withdrawal, anxiety, and depression, can result (Wilson, 2012).

Maslow and Belonging

As previously detailed, Maslow's "hierarchy of needs" theory identified specific basic and psychological needs that must be fulfilled prior to the attainment of self-actualization, or the achievement of one's full potential. Noltemeyer, Bush, Patton, and Bergen (2012) state that the fulfillment of Maslow's five basic needs (psychological, safety, love/belonging, esteem, and self-actualization respectively) are the key to an enriched human experience. Maslow's hierarchical pyramid of needs consists of two subsets of needs: lower order, or deficiency needs (psychological, safety, and love/belonging) and higher order, or growth needs (esteem and self-actualization). Taormina and Goa (2013) defined Maslow's need of belonging as, "a lack of close, lasting, emotionally pleasant interactions with other people, in groups as well as in intimate dyads, that yield personal relationships characterized by mutual affective concern" (p. 158). Maslow stated (1987) that when physiological and safety/security needs are fulfilled, people develop a need for authentic and affectionate relationships with other.

Belonging and Schooling

Noltemeyer, Bush, Patton, and Bergen (2012) contended that as students enter the educational system, they are more frequently beginning their schooling journey with unmet psychological needs, including a sense of belonging, and they expound by stating, "given the vast number of children experiencing deficiency needs, a better understanding of these relationships can serve as a prerequisite for establishing conditions that maximize learning outcomes" (p. 1862). Additionally, Noltemeyer et al. (2012) categorized school

achievement as a growth need, implying that the fulfillment of the love and belonging need is a prerequisite to such achievement.

Poston (2009, p. 350) addressed the implications of the fulfillment of the belonging need on students:

The level of belonging must be established because of its effect on one's self-esteem.

If the level of belonging in the hierarchy model is low, or an individual is viewed negatively by peers in that group, he or she may develop social anxiety and may withdraw toward a level of people in which he or she fits in socially.

Hegarty, Williams, and Hiroaki (2002) defined belonging as, "the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment" (p. 794); therefore, since adolescents spend the majority of their days in the educational setting, the need for students to deem themselves as "integral part[s] of that system" (p. 794) is paramount.

School Membership

Educational belonging, as opposed to the other areas of belonging correlated to human development, has received significantly less attention (Wilson, 2012). This lack of attention is concerning due to that fact that students' sense of belonging in educational environments is considered to be a vital contributing factor to feelings of school membership. Adelabu (2007) posited, "School membership, defined by feelings of acceptance and belonging within school, motivates students to achieve academically and to actively engage in the academic community" (p. 527), maintaining that students who develop an emotional relationship with their school associate more value with their educational community and their academic achievement. Additionally, students who feel a

connection to their school have been found to experience more enjoyment at school and persevere through obstacles for intrinsic reasons (Gillen-O'Neel & Fuligni, 2012). Aydiner and Kalender (2015) stated, "When adapted to school environment and student psychology, it could be argued that the sense of belonging is a need of students which should be satisfied before they can move on studying and being resilient" (p. 3300).

Aydiner and Kalender (2015) defined a sense of belonging as, "the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment" (p. 3300). Students' sense of belonging and perceptions of the integral nature of their school involvement can be influenced by multiple variables. Tillery, Varjas, Roach, Kuperminc, and Meyers (2013) identified individual characteristics (i.e. gender, ethnicity, and socioeconomic status) in addition to situational variables (i.e. school practices, discipline procedures, peer relationships, and teacher relationships) as such influencing factors. Chhuon and Wallace (2014) upheld the importance of interpersonal situational influences by defining an individual's sense of belonging in an educational environment as, "the extent to which a student feels personally accepted, respected, included, and supported by others" (p.125).

Benner and Graham (2007) discerned a liking for school from a sense of school belonging, stating that a sense of belonging to school illustrates one's ability to fit it at school. School belonging can also be viewed as a sense of "being known" (Chhuon & Wallace, 2014, p. 129). Nichols (2008) argued that students' level of being known, or their perceptions belongingness, has positive correlations to social, psychological, and academic constructs. Students cannot create a sense of school belonging on their own due to the fact

that belonging can only occur in a social context, emphasizing the importance of the school environment in the development of this basic need (Wilson, 2012).

Achievement

Research findings identifying the relationship between students' sense of educational belonging and achievement remain inconsistent (Booker, 2006). Anderman (2002) suggested that the cause of such contradictory results is that researchers have not arrived at a consistent definition of sense of belonging, offering conflicting and varying operational definitions of the construct. Even with inconsistent definitions, Maslow's (1970) hierarchy of human need names belongingness and love as more basic than esteem and achievement, implying that a sense of belonging is foundational to motivation and academic achievement (Maslow, 1970).

Even with historical inconsistencies in findings, Mikulincer and Shaver (2007) noted that a recent body of work illustrates how students' sense of fitting in and belonging can have significant implications on academic performance. Huyge, Van Maele, and Van Houtte (2015) identified feelings of school belonging as antecedents to student learning. Spitzer and Aronson (2015) stated, "many achievement gaps involve a psychological predicament: a threat to one's social identity or to one's sense of belonging. Both predicaments of social identity can interfere with performance and motivation" (p. 1). Kernahan, Zheng, and Davis (2007) concluded that belongingness is positively correlated with students' perceptions of their learning and academic success, finding that students who self-reported a stronger sense of belonging scored higher on formative assessments and maintained the perceptions that they had learned a lot in their course. Skinner and Belmont (1993) found that students who possess more active feelings of school belongingness earn higher grades,

higher scores on standardized assessments, and demonstrate higher levels of school adjustment. Irvin, Meece, Byun, Farmer, and Hutchins (2011) found that sense of belonging predicted educational achievement for youth in both high- and low-poverty communities. Anderman (2002) found a positive correlation between individual feelings of belonging and students' grades, and Aydiner and Kalender (2015) identified a positive correlation between a sense of school belonging and resilience, an indicator of academic success.

Graduation Rates

Students' sense of belonging, or perspective regarding school membership, has been identified as a factor, among others, that can influence high school and collegiate graduation rates. Collegiate attrition rates have become an increasing concern for at risk groups, making a sense of belonging critical for such students, as feelings of not belonging have been identified to be a risk factor (O'Keefe, 2013). With 65 percent of college students departing college for voluntary, nonacademic, reasons, it is evident that students are exiting colleges for social reasons, including their perceptions or misperceptions of self-belonging in relationship to the university community (Morrow & Ackerman, 2012). Berger (1997) identified a relationship not only between a college student's sense of community and institutional commitment, but also motivation to persist. Additionally, college students' sense of belonging has been found to be especially significant in relationship to institutional commitment at the beginning of the academic collegiate school year (Hausmann, Schofield, & Woods, 2007).

High school graduation rates are also influenced by myriad factors, including students' sense of belonging. Students who feel as though they are an integral component of the school environment may be less likely to drop out (Sari, 2012). "Dropping out" is

considered to be a process that comprised of many factors including sense of belonging, which may predict whether or not students exit high school prematurely (Gillen-O'Neel & Fuligni 2013; Wallace, Ye, & Chhuon, 2012). Finn (1989) contended that students must identify with their school in order to develop a sense of school belonging, stating, "It is this perception of belonging that facilitates the students' academic engagement and commitment to schooling. When a sense of belonging is not nurtured in students, they may become more likely to drop out" (p. 118).

Peer Relationships

One significant contextual element that comprises adolescents' sense of belonging is peer relationships. Peer relationships are considered to be a component of the positive school-based relationships that may have significant influences on students' educational experiences (Wallace, Ye, & Chhuon, 2012). Crosnoe (2011) referred to one's acceptance by peers as "fitting in," and contended, "The significance of acceptance somewhere among some peer crowd- fitting in versus not fitting in- outweighs any distinctions between good peer groups versus bad peer groups" (p. 124).

High quality friendships and peer acceptance are two developmental needs that are essential to students' sense of school belonging (Rubin, Bukowski, & Parker, 1998). The presence and absence of students' peer relationships, also referred to as friendships or group belonging, can have powerful influences on their comprehensive educational experiences and academic outcomes. The presence of supportive friends and social support in educational settings promotes feelings of belonging and is associated with school motivation and engagement (Juvonan, 2006; King, 2015). Conversely, social exclusion and rejection can lead to educational disconnection, lower rates of achievement, and deter from

feelings of school belonging (Juvonan, 2006). Additionally, undesired social exclusion or rejection has been associated with anxiety and depression. Newman, Lohman, and Newman (2007) recognized a strong relationship between a sense of group belonging and mental health, finding that both boys and girls “report fewer internalizing and externalizing problems when they experience a sense of group belonging” (p. 241). Ellerbrock and Kiefer (2014) found that student relationships that allowed middle schoolers to feel known and accepted by peers and to receive academic and/or emotional support promoted higher levels of student belonging.

Teacher Acceptance

Research indicates that students’ sense of belonging can be impacted by students’ perceptions of their relationships with teachers (Booker, 2006; Chhuon & Wallace, 2014; King, 2015; Tillery, Varjas, Roach, Kuperminc, & Meyers, 2013; Wallace et al., 2012). Chhuon et al. (2014) identified teachers as “institutional agents” who have profound influence over students’ motivational levels and self perceptions, and they found teacher/student relationships to be the most significant school relationship for students. Croninger and Lee (2001) regard teachers as “social capital,” stating teachers who “provide students with guidance and support supply students with social capital that can potentially reduce the effects of disadvantages students face in other areas of their lives and deepen their sense of commitment and belonging to school” (p. 550). Ellerbrock and Kiefer (2014) stated that teachers who value the teacher-student relationship are those who strive to make caring and authentic connections with their students, and they contend that the need to be cared for is a “universal characteristic”.

Students' sense of belonging that is fostered by positive and influential relationships with teachers can have a positive impact on educational outcomes for students ranging from preschool to high school (Chhuon et al., 2014; King, 2015). Hutchinson (2003) contended, "Learners are motivated by inclusion and consultation" (p. 811), meaning that if a student feels valued as a class community member by his or her teacher, motivation is positively affected. Booker (2006) found, "When belonging involves student perception of teacher support, encouragement, and warmth, achievement is directly and significantly related" (p.2). Teachers who forge sincere connections with students create educational environments that foster student belonging (Ellerbock & Keifer 2014). Crosnoe, Johnson, and Elder (2004) contended that students who identify their teachers as supportive scored higher on scales of academic achievement and behavioral adjustment. Erkman, Caner, Sart, Borkan, and Sahan (2010) found that young boys were more likely to achieve learning goals when they felt a sense of warmth and empathy from their teachers; also, they identified that male students' perceptions of teacher acceptance were significantly and positively correlated to self-concept, motivation, and academic achievement. Additionally, students with supportive teachers were found to be more likely to experience positive emotions while participating in the learning process (King, McInerney, & Watkins, 2012).

Gender and Belonging

Findings across studies have identified a gender difference between male and female students with female students consistently reporting higher levels of school belonging than boys (Anderman, 2002; Gillen-O'Nmalleel & Fuligno, 2013; Hughes, Zhang, & Hill, 2006; Kenny & Bledsoe, 2005; Voelkl, 1997). Uwah, McMahon, and Forlow (2008) attributed this discrepancy to female tendencies to be more "interpersonally oriented",

causing female students to place more importance on feelings of belonging. Boys' emotional engagement in school is typically lower than girls, and boys display signs of disconnect with school (boredom, apathy, and dissatisfaction) more frequently than girls (Huyge, et al., 2015). Huyge et al. (2015) attributed this disconnection to school to gender roles and perceived expectations stating that overt engagement in academic pursuits could be perceived as a more feminine approach to learning and not suitable when attempting to uphold a masculine image. Huyge et al. (2015) continued by stating that they, expect that boys who adhere to hegemonic masculinity would feel less comfortable with school, and consequently, less sense of belongingness with regard to school and its members, and their findings upheld that boys and girls who held traditional views of gender roles report lower levels of school belongingness.

Gillen-O'Neel and Fuligni (2013) conducted an in-depth study analyzing the belonging trends associated with both genders. Their research supported previous findings that identified female students as reporting higher levels of school belonging through middle school. However, they identified gender dependent changes in school belonging throughout high school, finding, "Over the course of high school, girls' school belonging tended to decline, whereas boys' school belonging remained the same; by the end of high school, the gender difference in school belonging had disappeared" (Gillen-O'Neel & Fuligni, p. 687).

African American Students and Belonging

Research indicates that African American students are more likely to score lower than other students in measures of belonging, and African American males students report less school belonging than any other demographic (Anderman, 2002; Booker, 2004;

Goodenow, 1992; Uwal, McMahon, Furlow, 2008). In reference to African American students, Steele, Spencer, and Aronson (2002) identify racial identification a potential trigger of belonging uncertainty in schooling environments, stating that students of color, unlike white students, must deal with stereotypes that questions their academic abilities. Spitzer (2015) identified this phenomenon as a “stereotype threat” which begets belongingness uncertainty, and this uncertainty provides vastly different subjective educational experiences for stereotype victims, potentially leading to disparate academic performances between African American students their white peers (Steele, Spencer, and Aronson, 2002). Members of socially stigmatized groups are wearier of their social connections and more aware of belonging deficits, and this perception can increase academic stress and overall dissatisfaction (Walton & Cohen, 2007).

Grit

The concept of grit has become a highly researched and preeminent topic in relationship to how and why students succeed in educational environments. Grit is widely considered to be a characteristic that drives students to pursue long-term and challenging goals over a period of time (Duckworth, Peterson, Matthews, & Kelly, 2007; Eskreis-Winkler, Shulman, Beal, & Duckworth, 2014; Laursen, 2015; Strayhorn, 2013). Other descriptors of grit include passion and extreme stamina (Eskreis et al., 2014), sustained interest (Laursen, 2015), and strenuousness (Duckworth et al, 2007). Soutter and Seider (2013) categorize grit as a “performance character,” and they contend grit is a quality that students can consciously access in an effort to reach their utmost potential in academic tasks. Duckworth et al. (2007) developed a two factor (trait level persistence and passion

for long-term goals) self-reporting measure, Grit-O, to measure grit, which they considered to be a “compound trait”, in their research participants.

Duckworth et al. (2007) contended, “The gritty individual approaches achievement as a marathon; his or her advantage is stamina. Whereas disappointment or boredom signals to others it is time to change trajectory the gritty individual stays the course” (p. 1088). Duckworth and Eskreis-Winkler (2013) addressed the relationship between grittiness and talent, stating that talent does not beget grit, nor does grit beget talent; conversely, most of their samples indicated a slightly negative correlation between the two.

Grit and Achievement

Grit, as a predictor of academic achievement, is a widely researched relationship. Strayhorn (2013) found that grittier Black males at a predominately White university earned higher grades in college when compared to students with similar characteristics (i.e. high school GPAs, ACT scores, and educational goals). Duckworth et al. (2007) found that grittier undergraduate psychology majors obtained higher GPAs than their peers who reported less grit. Additionally, grittier students were associated with lower SAT scores, perhaps indicating that traditionally smarter college students may be less gritty. Duckworth et al. (2007) also identified a relationship between grit and cadet success at the United States Military Academy, finding that grit was the most significant predictor of completion of the rigorous summer training program. Grit was also positively correlated to performance success in the 2005 Scripps National Spelling Bee, predicting achievement to higher rounds in the competition (Duckworth et al., 2007). Christensen and Knezek (2014) found that adults who displayed higher levels of grit attained higher levels of education and made fewer changes to their careers. A positive correlation between grit

and novice teachers was also identified (Robertson-Kraft, & Duckworth, 2014). Finally, Eskreis-Winkler, Shulman, Beal, and Duckworth (2013) reported, “grittier soldiers were more likely to complete [a selection course], grittier sales employees were more likely to keep their jobs, grittier students were more likely to graduate from high school, and grittier men were more likely to stay married.”

Fostering Grit

Goodwin and Miller (2013) contend that students are not “hard-wired” to execute grit in challenging academic experiences, meaning that grit is not an innate character trait; rather, the development of grit occurs in a more systematic manner through technique exposure and instruction. Laursen (2015) contend, “In order to prepare students for adult success, education should help them seek out challenging and engaging activities that set them on the path to mastery” (p. 21). Laursen (2015, p. 21) stated,

When this is achieved, students experience what Csikszentmihalyi calls flow. The flow state is so enjoyable that people will seek it out and persist at tasks with powerful intrinsic motivation. In order to create flow, learning must be relevant and supported by adults who build on students' strengths to decrease their anxiety, rather than focus on their weaknesses. Students need to have the opportunities to take on long-term or higher-order goals (or purposes) that, to them, are worthy of pursuit. Second, they need a supportive and rigorous learning environment to help them pursue these goals.

Encouraging students to create goals that are of personal importance is crucial when assisting students in strengthening their grittiness. Zhang, Parker, Eberhardt, and Passalacqua, (2011) stated that the goals of schooling are to support students in the

development of knowledge, problem solving skills, collaborative skills, in addition to motivating them to become self-directed learners. Other ways to encourage goal setting and foster the development of grit in students are to have open dialogue about grit, read and learn about current and historical people who demonstrated grit in order to attain aspirations, and create actions plans for goal attainment (Laursen, 2015).

Ayidner and Kalender (2014) identified four ways in which schools can promote resilience, or grit, in at-risk students: “reduce negative outcomes by altering the risk”, “reduce negative chain reactions following risk exposure”, “establish and maintain self-esteem and self-efficacy, and “open up opportunities [for students] to acquire skills and invest in prosocial activities” (p. 3301).

Grit and Belonging

Little research exists linking a sense of belonging to grit; however a few studies have alluded to a potential connection between the two constructs. Bowman, Hill, Denson, and Bronkema (2015) found that grittier students had a greater sense of belonging and participated in more extracurricular opportunities. Ayidner and Kalendar (2015) studied the relationship between resilience and belonging- among disadvantaged student groups, finding that resilient students indicated a higher sense of belonging to school.

CHAPTER 3

METHODOLOGY

The purpose of this study is to identify the relationship between high school students' sense of belonging and their self-perceptions of grit, understanding how various belonging constructs can influence students' grittiness. Using the Maslow's Hierarchy of Needs, this study examined students' senses of belonging in relationship to their schools, teachers, and peers that influence the perceptions of their grittiness. Having a better understanding of the relationship between these factors will provide valuable insight to policy makers, educators, educational administrators, and researchers as they strive to cultivate educational environments that produce determined students who pursue long-term goals.

Chapter 3 will outline philosophical assumptions in relation to research questions, methodological approach, setting, population, sample, data collection, and data analysis. The chapter will conclude with limitations and delimitations of the study.

Research Design

This study utilized a quantitative methodological approach that is rooted in the postpositive philosophical foundation. This study employed a scientific approach and that will test "objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments so that numbered data can be analyzed using statistical procedures" (Creswell, 2014, p.4).

A correlational comparative research design will be employed to determine if a relationship exists between students' self-perceptions of grit and their sense of belonging (broken into three subsections: school membership, teacher acceptance, and peer group

membership). This research design was selected because it seeks to explore a possible correlational relationship between independent variables and a dependent variable (grittiness).

Methodological Approach

Survey research was employed in this study to gather information and identify factors that relate to higher levels of grittiness in high school students. The Student Belonging and Grit Survey was self-created to include three specific questions pertaining to each of the various categories of belonging (school membership, teacher acceptance, and peer group membership) researched and outlined in Chapter 2. The five survey questions that target student grittiness were taken from Duckworth's Grit Scale (2007).

Research Questions

The following research questions used to create and explore the Student Belonging and Grit Survey to examine belongingness correlations to higher levels of grittiness.

1. What are the demographic characteristics of high school students who participated in the survey?
2. Is there a difference among high school students with varying degrees of parent education in their perceptions of the belonging factors of a) school membership, b) teacher acceptance, c) peer relationships?
3. Is there a difference between female high school students and male high school students in their perceptions of the belonging factors of a) school membership, b) teacher acceptance, c) peer relationships?

4. To what extent do the factors of sense of school belonging, peer relationships, and teacher acceptance have a relationship self-reported level of grittiness in high school students (9th-12th grade)?

Research Setting

The Student Belonging and Grit Survey utilized Google forms to disseminate the survey to high school students with parent permission to participate. The survey was emailed to all high school parents and upon their permission, emailed to their children. Due to the lack of student response to the survey initially, the forms were resent to the students whose parental permission had been secured, acquiring increased participation. The survey's completion took approximately ten minutes and students could complete it when and where they preferred.

Sample and Participants

The Student Belonging and Grit Survey contains data from Smalltown, Iowa students enrolled 9th-12th grade. No students who received parental permission were excluded from the survey; however, participation was optional. The demographic makeup of Smalltown, Iowa students is as follows: Asian (.4%), Black (.4%), Hispanic (1.8%), multi (1.4%), Pacific Islander (.2%), and white (95.81%). The student population is 17.76% free and reduced lunch, .2% ELL, and 8.38% IEP.

Table 3.1

Descriptive Statistics for Participant Demographics (n=62)

Variables	<i>n</i>	% of sample
Grade Level		
Freshman/Sophomore	30	48.4
Junior/Senior	32	51.6
Gender of Student		
Male	13	21.0
Female	49	79.0
Parent Level of Education		
Some high school/high school/Some college	13	21.0
College	15	24.2
Master's Degree/JD, PhD, MD	34	54.8

Data Collection Methods

A convenience sampling method for data collection, the Student Belonging and Grit Survey was administered to the entire school population of Smalltown, Iowa (grades 9-12) who had received parental permission. Access to the entire population proved advantageous; therefore, drawing upon a sampling of the school population was unnecessary. The study was conducted through the dissemination of a Google Form. Parent permission was first acquired through a Google Form following a procedure approved by the sponsoring university's Institutional Review Board. A survey was then sent to the students who were given permission to participate by their parents. Surveying was the preferred method of data collection for this study because it allowed for a timely turnaround, reached many participants in a convenient manner, and provided a means of collecting a broad range of data.

Survey Instrument

The Student Belonging and Grit Survey was designed by the researcher for this specific study; however, it includes five items from Angela Duckworth's 12-Item Grit Scale (2007). The other survey items include demographic item and items that target the students' perceptions of belonging in relationship to peers, school, and teachers. Demographic items allow for differences among gender, ethnicity, and parental education to be illustrated within the comprehensive results. The survey items that seek to ascertain grit levels were selected from Duckworth's scale because of their applicability to secondary education pursuits. The remaining 9 survey items all target three types of belonging, allotting three questions for peer relationships, school membership, and teacher acceptance. The items were created based upon previous research outlined in the literature review that describe integral components of each construct.

Variables

Using Maslow's hierarchy of needs to examine the data set enabled this study to predict how various aspects of educational belonging influence student grit. Independent variables aligned with the love/belonging component of Maslow's hierarchy and tested their potential correlation to students' self-perceptions of grittiness.

Independent Variables

Measurement of each of the independent variables including grade level, gender, ethnicity, highest degree of parent, school membership, peer relationships, and teacher relationships are described below.

Demographics. Demographics were measured through participant response on the Student Belonging and Grit Survey. Grade level, gender of student, ethnicity, and highest educational degree of parent are described below.

Grade Level. Grade level of student was measured by self-identification from the options: 9th grade (coded = 1), 10th grade (coded = 1), 11th grade (coded = 2), and 12th grade (coded = 2).

Gender of the Student. Gender of the student was measured by participants selecting male (coded = 0) and female (coded = 1).

Parent Level of Education. Parent level of education was measured by identification of the following options: some high school (coded = 1), high school (coded = 1), some college (coded = 1), college (coded = 2), master's degree (coded = 3), and JD, PhD, or MD (coded = 3).

School Membership. The observed variable of *School Membership* was measured by merging the results of the three survey statements that target school membership. The questions asked of students targeted their perceptions of school inclusivity, school satisfaction, and school belonging. Each statement was assessed using a 5-point Likert scale with the following options: strongly disagree (coded = 1), disagree (coded = 2), neutral (coded = 3), agree (coded = 4), and strongly agree (coded = 5).

Peer Relationships. The observed variable of *Peer Relationships* was measured by merging the results of the three survey statements that target students' feelings of belongingness among their peers. The questions asked of students targeted their perceptions of peer inclusivity, peer acceptance, and peer respect. Each statement was assessed using a 5-point Likert scale with the following options: strongly disagree (coded = 1), disagree (coded = 2), neutral (coded = 3), agree (coded = 4), and strongly agree (coded = 5).

Teacher Acceptance. The observed variable of *Teacher Acceptance* was measured by merging the results of the three survey statements that target students' feelings of belongingness as a result of their relationships with their teachers. The questions asked of students targeted their perceptions of feeling welcome, feeling valued, and feeling cared for by their teachers. Each statement was assessed using a 5-point Likert scale with the following options: strongly disagree (coded = 1), disagree (coded = 2), neutral (coded = 3), agree (coded = 4), and strongly agree (coded = 5).

Dependent Variable

The dependent variable is outlined below with an explanation of the measured response from the Student Belonging and Grit Survey.

Grittiness. The dependent variable of *Grittiness* was measured by measured by merging the results of the five survey statements that target various facets of grittiness. The questions asked of students targeted their ability to overcome setbacks, ability to stick with challenging tasks, and ability to set and achieve goals. Each statement was assessed using a 5-point Likert scale with the following options: strongly disagree (coded = 1), disagree (coded = 2), neutral (coded = 3), agree (coded = 4), and strongly agree (coded = 5). Through a variable merger, these single construct that measures grittiness.

Summary of Variables

Table 3.2 outlines a summary review of the variable used in this research study and the method of measurement.

Table 3.2

Summary of Variables

Variable	Type	Description (Measured by)
Grade Level	IV	1 = 9th grade, 1 = 10th grade, 2 = 11th grade, 2 = 12th grade
Parent Level of Education	IV	1 = Some hs/hs/Some college, 2 = college, 3 = Master's/JD, PhD, MD
Gender of Student	IV	0 = male, 1 = female
School Membership	IV	Construct created through merger of 3 statements
Peer Relationships	IV	Construct created through merger of 3 statements
Teacher Acceptance	IV	Construct created through merger of 3 statements
Belonging Combined	IV	Construct created through merger of school membership, peer relationships, and teacher acceptance
Grittiness	DV	Construct created through merger of 5 statements targeting grit

Data Analysis

Several statistical measures were utilized in this study to answer the research questions pertaining to the Student Belonging and Grit Survey. Both descriptive and inferential statistics were employed to analyze the resulting data. This section addressed the analysis used to answer each research question.

Descriptive Statistical Analysis

NCSS 12 was used to report means, standard deviation, and frequencies on all independent and dependent variables. Descriptive statistics were used to answer question one. What are the demographic characteristics of high school students who participated in the survey?

Inferential Statistical Analysis

Independent samples *t*-tests and multivariate analysis were conducted on the Student Belonging and Grit Survey to answer research questions two and three.

Independent samples *t*-test. Six different samples *t*-tests were conducted to determine if there was a difference between majority and non-majority high school students and male and female high school students with regard to their perceptions of belongingness.

- a. Is there a significant difference between male and female students in their perceptions of school membership?
- b. Is there a significant difference between male and female students in their perceptions of peer group membership?
- c. Is there a significant difference between male and female students in their perceptions of teacher acceptance?
- d. Is there a significant difference between male and female students in their perceptions of belonging combined?
- e. Is there a significant difference between male and female students in their perceptions of grit?

One-Way ANOVA A one-way ANOVA was used to study the effect that one factor (with more than two categories) has on one dependent variable (Mertler & Vannatta, 2013). This study seeks to identify if there is a difference among students with parents of varying levels of education and their beliefs of belonging and grit

Correlations Pearson correlations were used to identify the degree of relationship between two quantitative variables (Mertler & Vannatta, 2013). Correlations were

conducted to identify a potential relationship between peer relationships and teacher acceptance, peer relationships and school membership, peer relationships and grit, teacher acceptance and school membership, teacher acceptance and grit, and school membership and grit.

Delimitations

This study surveyed high school students in one district only, making the sample restricted in geography. The demographics of the Smalltown, Iowa school are not reflective of national high school demographics. Due to the convenience sampling employed, results cannot be generally applied to a larger population, rather only suggested. Additionally, the sample size for this survey was much smaller than anticipated due to the multiple steps required prior to getting access to the student population. Specifically, the number of male participants was significantly smaller than that of the female counterpart, making inferences about gender differences challenging to support.

Limitations

This study focused on belongingness and grittiness perceptions of students at a finite point in their educational careers, and due to the subjectivity of the subject matter, results could fluctuate depending on the students' current personal and educational experiences. Additionally, not all students participated in the study. Limitations also include potential biases in answers due to reticence to select answers that have negative connotations. Finally, students may not have realized the significance of reflectively and honestly answering the survey questions, as the researcher was unable to administer or introduce the survey.

CHAPTER 4

RESULTS

The purpose of this study was to develop an understanding of the relationship between belonging factors and Smalltown High School students' self-perceptions of grit by examining the Survey of Belonging and Grit. This study was conducted utilizing Maslow's Hierarchy of Needs to identify various aspects of belonging in high school students' lives. Three aspects of belonging emerged in the research as critical components of high school students' needs: teacher acceptance, school membership, and peer relationships. The hypothesis of this study was that a relationship exists between students' sense of belonging and their self-perception of grit.

This chapter provides the results of the data analysis and the answers to the four previously identified research questions that directed this study. This chapter is divided into six sections. The first section describes data screening processes to ensure assumptions of data normality needed to conduct data analysis. The second section includes the results of all descriptive statistics conducted on demographic variables, as well as independent and dependent variables. The third section reports the correlation between all independent and dependent variables. The fourth section outlines the results of the one-way ANOVA used to answer research question two. The fifth section reports the results of the independent samples *t* tests used to answer research question three. Finally, the sixth section summarizes the answers to all of the research questions posed in this study.

Data Screening and Assumptions of Normality

Prior to conducting descriptive and inferential analysis, all data were screened for outliers and missing values. Results of data screening revealed no outliers or missing

values for the independent and dependent variables. Additionally, screening was conducted to assess whether the variables met assumptions of normality.

Table 4.1

Assessment of Normality for Variables in the Model (n = 63)

Variables	Skew	Kurtosis
Grade	-.095	1.001
Parent Education	-.711	1.922
<i>Peer Relationships</i>	-.209	2.673
<i>School Membership</i>	-.216	2.033
<i>Teacher Belonging</i>	-.031	2.567
<i>Combined Belonging</i>	.045	2.496
<i>Grit</i>	-.038	1.983

Frequencies and Descriptive Statistical Analysis

Descriptive statistics were run for each of the variables in this study as well as demographic information related to the participants. Table 4.2 illustrates the results of the descriptive analysis for the demographic data in addition to each of the dependent and independent variables. Statistics include the range (minimum and maximum values), mean, and standard deviation for each variables.

Table 4.2

Descriptive Statistics for Demographic, Independent, and Dependent Variables (n =62)

Variables	Min	Max	Mean	SD
Gender ^a	0	1	.22	.42
Year in School ^b	1	2	1.52	.50
Parent Education ^c	1	3	2.35	.81
<i>Peer Relationships</i>	4	15	9.65	2.26
<i>School Membership</i>	7	15	11.61	2.27
<i>Teacher Belonging</i>	6	15	11.11	1.98
<i>Combined Belonging</i>	6.66	14.33	10.79	.22
<i>Grit</i>	2	8	2.35	.81

Scale^a: 0 = Female, 1 = Male

Scale^b: 1 = 9th and 10th Grade, 2 = 11th and 12th Grade

Scale^c: 1 = Some high school, high school, or some college, 2 = college, 3 = Master's Degree, JD, PhD, MD

One-Way ANOVA

Three one-way ANOVAs were conducted to determine if there was a difference between students with parents of varying educational backgrounds (Some high school/high school/Some College, College, Master's Degree/JD, PhD, MD) and their self-perceptions of grit. The three specific one-way ANOVAs that were conducted were:

- a) Is there a difference among high school students with varying degrees of parent education in their perceptions of the belonging factor of school membership?
- b) Is there a difference among high school students with varying degrees of parent education in their perceptions of the belonging factor of teacher acceptance?
- c) Is there a difference among high school students with varying degrees of parent education in their perceptions of the belonging factor of peer group membership?

The one-way ANOVA sought to identify if there was a statistically significant difference among students with parents of varying levels of education and their beliefs of belonging and grit. The independent variable was the parents' highest level of education. The dependent variables were school membership, peer group membership, teacher acceptance, and grit. The only one-way ANOVA focused on school membership where statistically significant differences were found was in the area of school membership, $F(2, 59) = 3.80, p = .028$. The remaining one-way ANOVAs yielded no statistically significant differences in the areas of: Teacher acceptance, $F(2, 59) = 1.38, p = .258$; Peer relationships, $F(2, 59) = .357, p = .701$; Grit $F(2, 60) = .568, p = .570$.

Follow up tests were conducted to evaluate pairwise differences among the means between education level groups and school membership. Levene's test for equal variances was not statistically significantly different so equal variances were assumed and post hoc comparisons were conducted using Tukey's test. There was a significant difference in means between students with parents obtaining some college education or less ($M = 10.15, SD = 2.99$) and parents obtaining masters' degrees or higher ($M = 12.09, SD = 1.80$) indicating that students with parents with higher levels of education reported feeling more school membership than those students with parents who obtained some college experience or less, effect size (small effect size) $d = 1.396 (p = .007)$.

Two-Sample *t*-tests

Five two-sample *t*-tests were conducted to determine if there was a difference between male and female students in their perceptions of belonging (peer, school, and teacher, and belonging combined) and grit. The five specific two-sample *t*-tests were:

- a) Is there a difference between male and female students in their perceptions of peer relationships?
- b) Is there a difference between male and female students in their perceptions of school membership?
- c) Is there a difference between male and female students in their perceptions of teacher acceptance?
- d) Is there a difference between male and female students in their perceptions of combined belonging?
- e) Is there a difference between male and female students in their perceptions of grit?

A two-sample *t*-test was conducted to determine if there was a significant difference between male and female students and their perceptions of peer relationships. The test showed no statistically significant differences. Male students ($M = 10.08, SD = 1.26$) on the average experienced stronger peer relationships than female students ($M = 9.53, SD = 2.45$). The 95% confidence interval for the difference in the means ranged from $-.45$ to 1.54 . The eta square index indicated that $.28$ of the variance of peer relationships was accounted by whether or not a student was male or female.

A two-sample *t*-test was conducted to determine if there was a significant difference between male and female students and their perceptions of school membership. The test showed no statistically significant differences. Male students ($M = 12.15, SD = 1.95$) on the average experienced stronger peer relationships than female students ($M = 11.47, SD = 2.35$). The 95% confidence interval for the difference in the means ranged from $-.73$ to 2.10 . The eta square index indicated that $.34$ of the variance of peer relationships was accounted by whether or not a student was male or female.

A two-sample *t*-test was conducted to determine if there was a statistically significant difference between male and female students and their perceptions of teacher acceptance. The test showed no significant differences. Male students ($M = 11.31, SD = 1.80$) on the average experienced stronger peer relationships than female students ($M = 11.06, SD = 2.05$). The 95% confidence interval for the difference in the means ranged from -1.00 to 1.49. The eta square index indicated that .69 of the variance of peer relationships was accounted by whether or not a student was male or female.

A two-sample *t*-test was conducted to determine if there was a statistically significant difference between male and female students and their perceptions of belonging combined. This test showed no significant differences. Male students ($M = 11.18, SD = 1.22$) on the average experienced stronger peer relationships than female students ($M = 10.69, SD = 1.82$). The 95% confidence interval for the difference in the means ranged from -.58 to -1.56. The eta square index indicated that .36 of the variance of peer relationships was accounted by whether or not the student was male or female.

A two-sample *t*-test was conducted to determine if there was a significant difference between male and female students and their perceptions of grit. The test showed no significant differences. Male students ($M = 15.86, SD = 2.54$) on the average experienced stronger peer relationships than female students ($M = 15.63, SD = 3.06$). The 95% confidence interval for the difference in the means ranged from -1.57 to 2.02. The eta square index indicated that .80. The variance of peer relationships was not accounted by whether or not a student was male or female.

Table 4.3

Independent Samples t-tests for Male / Female – Summary for Results (n = 62)

	<u>Male</u>		<u>Female</u>		<i>t</i>	<i>p</i>	<u>Confidence Intervals</u>	
	M	SD	M	SD			Lower	Upper
1 Peer Relationships	10.08	1.26	9.53	2.45	2.02	.38	-0.45	1.54
2 School Membership	12.15	1.95	11.47	2.3	2.00	.60	-0.73	2.10
3 Teacher Acceptance	11.31	1.80	11.06	2.05	2.00	.69	-1.00	1.49
4 Combined Belonging	11.18	1.22	10.69	1.82	2.00	.60	-0.58	1.56
5 Grit	15.86	2.54	15.63	3.06	2.00	.61	-1.57	2.02

Note: Levene's test for equal variances was not significant, indicating that variances were assumed equal for all variables except peer relationships.

Scale for variable: 0 = male, 1 = female.

Correlations

This study examines the relationship between variables using Pearson correlation coefficients. Correlations are used to identify the degree of relationship between two quantitative variables (Mertler & Vannatta, 2013).

Table 4.4

Correlations for Research Question 3 Environment Variables (n = 63)

	1	2	3	4
1 Peer Relationships	--			
2 School Membership	.379*	--		
3 Teacher Acceptance	.492*	.446*	--	
4 Grit	.334*	.323	.202	--

Note: * $p < .008$ (.05/6) Bonferonni adjustment for multiple correlations to minimize chances of a Type 1 error.

High Correlations

Results of the correlation analysis revealed no large (high) correlations.

Moderate correlations.

Four statistically significant correlations were considered moderate based on Cronk (2014). The variable school membership was positively correlated with peer relationships ($r = .379, p < .008$), indicating that as levels of school membership increased, levels of peer relationships increased. The variable peer relationships was positively correlated with teacher acceptance ($r = .492, p < .008$), indicating that as levels of peer relationships increased, levels of teacher acceptance increased. The variable school membership was positively correlated with teacher acceptance ($r = .446, p < .008$), indicating that as levels of school membership increased, levels of teacher acceptance increased. The variable peer relationships was positively correlated with grit ($r = .334, p < .008$), indicating that as levels of peer relationships increased, levels of grit increased.

Summary Answers to Research Questions

Each of the research questions is answered in this section using results from the data analysis previously presented in this chapter.

Research Question 1- Demographic Characteristics

What are the demographic characteristics of high school students who participated in the survey?

The sample consisted of 62 participants, ranging in grade level from 9th to 12th grade ($M = 1.52, SD = 0.50$), each of whom identified as male (21%) and female (79%). The majority of participants reported parents with masters' degrees, JD, PhDs, or MDs (55.6%) compared to parents with college degrees (23.8%) and parents with some college or high school experience (20.6%). The majority of the participants were in either 11th or 12th grade (52.3%) compared to 9th and 10th graders (47.6%).

Research Question 2- Difference among High Schoolers with Varying Degrees of Parent Education and Belonging

Is there a difference among high school students with varying degrees of parent education in their perceptions of the belonging factors of a) school membership, b) teacher acceptance, c) peer relationships?

Results for each of the three one-way ANOVAS revealed that there was one statistically significant difference between students' sense of school membership and the highest level of parental education. A statistically significant difference existed in the means between students with parents obtaining some college education or less and parents obtaining masters' degree or higher.

Research Question 3- Difference between Male and Female Groups

Is there a difference between female high school students and male high school students in their perceptions of the belonging factors of a) school membership, b) teacher acceptance, c) peer relationships?

Results for each of the two-sample *t*-test revealed that there was no statistically significant difference between students' sense of school membership, peer relationships, teacher acceptance, belonging combined, or self-perception of grit based on gender.

Research Question 4- Correlations

What relationships exist between high school students' sense of school belonging, peer relationships, and teacher acceptance and self-reported level of grittiness?

Four statistically significant correlations were considered moderate in this study. The variable school membership was positively correlated with peer relationships, indicating that as levels of school membership increased, levels of peer relationships

increased. The variable peer relationships was positively correlated with teacher acceptance, indicating that as levels of peer relationships increased, levels of teacher acceptance increased. The variable school membership was positively correlated with teacher acceptance, indicating that as levels of school membership increased, levels of teacher acceptance increased. Finally, the variable peer relationships was positively correlated with grit, indicating that as levels of peer relationships increased, levels of grit increased.

Summary

This chapter presented results for the data analysis. Data were analyzed and determined to meet assumptions of data normality. Frequencies and descriptive data were presented to provide background characteristics for the study's participants. None of the two-sample *t*-test results revealed significant differences between male and female students. One one-way ANOVA indicated a statistically significant difference between how students with varying degrees of parent education identify the belonging construct of school membership. Four moderate correlations emerged, indicating as various levels of belonging increased, levels of other belonging construct or grit increased, too. A discussion of the results and recommendations for practice and future research are presented in Chapter 5.

CHAPTER 5

Discussion, Conclusions, and Implications

In Chapter 5, the results presented in Chapter 4 are examined within the context of Maslow's hierarchy of needs, Duckworth's notion of grit, and current literature regarding both topics. The chapter will begin with a summary of the current study, followed by a summary and discussion of the results, implications for policy and practice, and recommendations for further research. Chapter 5 will close with concluding thoughts on the student of belonging and grit.

Summary of the Study

Chapter 1 described the significance of the study through its connection to current literature and outlined each of the research questions in relationship to the theoretical framework. This study adds to the existing literature because it identified a relationship between belonging variables and grit, which can influence graduation rates, achievement, and the acquisition of student goals. By understanding which belonging constructs impact others and grit, resources can be better allocated to ensure that students' senses of belonging are fostered in the school setting. Abraham Maslow's theory of hierarchical needs served as the theoretical framework for this study, as it posits that a lack of a sense of belong creates a need for relationships, connection, and social stability, and it must be met prior to one can experience self-actualization.

Chapter 2 provided a historical perspective of the literature focused on school membership, peer relationships, teacher acceptance, and grit. Schooling implications in relationship to belonging and grit (or lack thereof) were outlined, highlighting the importance of such constructs in relationship to student achievement and success. Chapter

2 identifies how the need for belonging permeates the daily lives of students as they navigate relationships, maturation, and academic pressures in the schooling setting.

Chapter 3 outlined the methodology used in this study. An overview of the research design, methodological approach, research questions, participants, data collection method, survey instrument, and variables. The chapter concluded with a data analysis plan for conducting the two-sample *t*-tests, one-way ANOVAs, and correlations for the study.

Chapter 4 provided the results for the statistical analysis. A review of data screening and assumptions of normality with frequencies and correlations were described. The chapter concluded with the descriptive and inferential statistics performed to answer each of the four research questions.

In the following sections of Chapter 5, a discussion of the results is presented for each of the independent and dependent variables.

Summary of the Results

The results of the correlations yielded four moderate correlations, indicating as various levels of belonging increased, levels of other belonging construct or grit increased, too. None of the two-sample *t*-test results were revealed with significant differences between male and female students. One one-way ANOVA indicated a statistically significant difference between how students with varying degrees of education identify the belonging construct of school membership.

Discussion of the Results

This results indicate variables of gender, school membership, peer relationships, and grit warrant further discussion. They are discussed below in that order.

Gender

Gender was examined as a variable in this study. The study identified no differences between male and female students in relationship to their feelings of school membership, teacher acceptance, peer relationships, and grit, indicating that young men and women are experiencing similar high school experiences in relationship to these constructs. These findings contradict the majority of research from other studies on gender and belonging, as many studies have consistently identified female students reporting higher levels of school belonging than their male counterparts (Anderman, 2002; Gillen-O'Nmalleel & Fuligno, 2013; Hughes, Zhang, & Hill, 2006; Kenny & Bledsoe, 2005; Voelkl, 1997). Gillen-O'Neel and Fuligni (2013) found that female sense of belonging decline over the course of high school, while male school belonging remains steady, which could attribute to the lack of significant difference between the male and female participants. With little variance between genders in relationship to belonging and grit, targeted efforts within this school system are not needed to level out gender perceptions.

School Membership

Since access to free and reduced demographics was not provided, students' highest level of parent education was examined as a variable in this study as a means of arriving at socio-economic implications for belonging and grit. This study found a statistically significant difference between students of parents with higher levels of education and students of parents with lower levels of education and their sense of school membership. Although limited research exists in this area, Tillery, Varjas, Roach, Kuperminc, and Meyers (2013) identified socioeconomic status as one factor that influences students' perceptions of school membership.

Chhuon and Wallace (2014) defined school membership as a student's sense of being known. Adelabu (2007) upheld that school membership not only has a direct effect on students' motivation to succeed academically, but also the value they place on community. In order for a sense of belonging to develop, a social context must be in place, as this need cannot be fulfilled in isolation (Wilson, 2012), making the schooling environment the most significant, if not only, environment where an adolescent's perception of "being known" can be developed.

A statistically significant correlation was found between school membership and peer relationships. This finding upholds previous research that contends that the presence of supportive friends and social support in educational settings promotes feelings of belonging and is associated with school motivation and engagement (Juvonan, 2006; King, 2015). Additionally, Ellerbrock and Kiefer (2014) found that student relationships that allowed middle schoolers to feel known and accepted by peers and to receive academic and/or emotional support promoted higher levels of student belonging. Although this study cannot identify causation between peer relationships and school membership, it is clear that a student's feeling of belonging within a social circle could have a connection to personal feelings of membership within the entire schooling system.

A statistically significant correlation was found between school membership and teacher acceptance, reinforcing current research that indicates that students' sense of belonging can be impacted by students' perceptions of their relationships with teachers (Booker, 2006; Chhuon & Wallace, 2014; King, 2015; Tillery, Varjas, Roach, Kuperminc, & Meyers, 2013; Wallace et al., 2012). With these findings, implications arise for students with parents with lower levels of education, as their sense of school belonging is lower than

their counterparts, highlighting the importance of teacher relationships and acceptance with that population.

Peer Relationships

A statistically significant correlation was identified between peer relationships and teacher acceptance. Little research exists to support this finding; however, Hutchinson (2003) contended, “Learners are motivated by inclusion and consultation” (p. 811), meaning that if students feel valued as a class community member, which may include their perception of the relationships they have with their peers, or by a teacher, motivation is positively affected. Additionally, it can be hypothesized that students may feel more accepted by teachers who create a welcoming and warm learning environment, and such conditions for learning could assist in fostering relationships among students who otherwise may not have interacted.

A statistically significant correlation was also identified between peer relationships and grit. There is no current research to support this finding, and this study only shows a snapshot of some of the complexities that may exist between these two constructs. One could surmise that the existence of solid and positive peer relationships could motivate student to achieve, as friendly competition can have the potential to be productive in social educational settings.

Grit

Grit only rises to the level of notice in this study regarding peer relationships. It’s unknown if this is direct or indirect effect, as it is possible that parents’ level of education drives school membership which has a relationship with peer relationships and

subsequently, a relationship with grit. A deep understanding of the relationship between grit and peer relationships that is beyond the scope of this study.

Conclusion

This study provided information that will add to the current research available targeting students' sense of belonging and grit. Maslow's hierarchy of needs was used to ground the study in the physiological need of belonging as the foundation for esteem and self-actualization. In review, a statistically significant difference between how students with varying degrees of parent education identify the belonging construct of school membership. Four moderate correlations emerged, indicating as various levels of belonging increased, levels of other belonging construct or grit increased, too. A moderate correlation was identified between peer relationships and teacher acceptance, peer relationships and grit, school membership and peer relationships, and school membership and teacher acceptance.

Implications for Policy and Practice

Understanding the factors related to student senses of belonging and grit is essential in ensuring that adolescents' physiological needs are being met and addressed to ensure that they are reaching their academic and emotional potential. The relationship between students with parents of lower levels of education and school membership is most likely to be influenced by policy makers, schools, and parents in this study.

Implications for Parents

Although this study focuses on constructs that relate to the school environment, parents can have a direct and indirect influence on students' schooling experience. Although parents cannot readily change their level of education, they can support their

children in increasing their school membership, which could potentially counterbalance their lack of educational experience. Suggestions for parents based on this study are:

- Encourage your child to join extracurricular activities in an attempt to broaden their social circle and strengthen their allegiance to their school.
- Draw attention to your child's friendships and celebrate any interest in making new friends.
- After teacher conferences or communication, reinforce and retell any care or concern your child's teachers express toward your child.

Implications for Teachers

The correlations between teacher acceptance and school membership and peer relationship provide teachers with the ability to have a direct influence on those constructs along with an indirect influence on grit, as a relationship exists between peer relationships and grit. Teachers can also be influential in the attempt to even out the statistically significant difference between students from parents of higher levels of education and lower levels of education and their perceptions of school belonging. If teachers can identify which students feel isolated and "unknown," they may be able to target such students for increased interactions and support. Additionally, preservice teachers need training and experience on relationship building with all students, especially those with socioeconomic disadvantages.

Suggestions for teacher based on this study are:

- Identify students who exhibit characteristics of disenfranchisement from school and work toward developing positive relationships with them.

- Incorporate activities within the classroom that provide students opportunities to expand their peer circle.
- Weave character education (inclusion, empathy, etc.) into learning experiences.

Implications for Schools

Understanding the barriers to student belonging and grit is essential for school leaders, allowing them to think toward programming, interventions, and supports that will target specific belonging needs across the schooling environment. This study identified the importance of teacher acceptance, school membership, and peer relationships. Schools need to be systemic and deliberate in their attempts to provide opportunities for students to develop and maintain relationships with one another, teachers, and their school identity. Additionally, if students with parents with lower levels of education experience reduced feelings of school membership than their peers with parents with higher levels of educations, then school programming and supports must be analyzed and altered to ensure that this need is being met.

Suggestions for schools based on this study are:

- Implement student surveys to identify specific student areas of belonging needs.
- Analyze of current extracurricular opportunities for students (including the demographics in participation, variety of activities, and teacher inclusion in such activities).
- Consider teacher/student mentor programs for all students, especially at-risk students.
- Create of school activities outside of athletics and band that would foster a sense of school pride for all students.

Recommendations for Future Research

This study contributes to the existing literature on student belonging and grit using Maslow's hierarchy of human needs as a foundation to examine the Belonging and Grit Survey.

Future research should consider how students' sense of belonging and grit vary by age. A limited scope of research is available on this topic, and if a decrease in belonging is found to occur as students age, an analysis of educational programming differences throughout the grade levels could be pertinent.

Additional research should also be considered to target the relationship between grit and peer relationships, as it is beyond the scope of this study to determine if the relationship between grit and peer relationships is direct or indirect. If a direct relationship between grit and peer relationships can be identified, programming to target increased authentic and positive student relationships could lead to increased grit and subsequent student achievement.

Subsequent research that broadens the demographic information of the participants would also be valuable. Since this study's sample included students in a rural setting only, an analysis of the relationship between belonging and grit in more diverse and populated educational settings could yield significant insight.

Contribution to Literature

Past research has examined the effects of both belonging and grit on student graduation rates and achievement. There is a dearth of research that not only targets the relationship between grit and belonging in high school students, but also the relationship between various constructs of belonging in high school students. Additionally, there is

limited research on the relationship between socioeconomic status and belonging in high schoolers, and this study identifies that students with parents holding higher educational degrees identify higher levels of school membership. This study supports myriad research that identifies the importance of belonging for young adults, and it provides insight into more specific relationships that have not been previously uncovered.

Final Thoughts

A statistically significant difference was identified between students' sense of school membership and the level of parental education, as students whose parents obtained higher educational degrees reported higher levels of school membership than students whose parents obtained lower educational degrees. This provides data for further research targeting socioeconomic differences in high schoolers' educational experiences.

Statistically significant relationships were found between various belonging and grit constructs. The variable school membership was positively correlated with peer relationships, peer relationships was positively correlated with teacher acceptance, school membership was positively correlated with teacher acceptance, and peer relationships was positively correlated with grit. As research targeting student belonging factors continues to emerge, it will be vital for schools and teachers to analyze their current structures that may inhibit some students from developing peer relationships, recognizing teacher acceptance, and experiencing school membership.

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Belonging and Grit Survey

Demographics:

- **Label ethnicity**
- **Gender**
- **Parents highest degree**

Answer Options:

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

Answer Options:

- *Strongly Disagree*
 - *Disagree*
 - *Neutral*
 - *Agree*
 - *Strongly Agree*
-
- **My teachers value their relationships with me.**
 - **My teachers care about me.**
 - **My teachers try to make everyone feel welcome in their classes.**
 - **Students have lots of chances in my school to get involved in sports, clubs, and other school activities outside of class.**
 - **I wish I went to a different school.**
 - **I feel like I belong at this school.**
 - **Most students in my school treat each other well.**
 - **Students in this school are often teased or picked on.**
 - **I feel as though I fit in with a certain group of students.**

Date: **05/17/17**
From: **Erik Maki, IRB Chair**
To: Amy Hemphill
Re: **IRB Proposal #: 2016-17062**

Your full board submission for research titled “*Student Sense of Belonging as Predictors of Grittiness*” has been received and approved.

The approval period is from 05/17/17 to 05/17/18

If any changes are made to the protocol or if you plan to continue the study beyond the approval date, notify the IRB. Should you intend to continue your study beyond the approved time period, please submit an application to the IRB no later than one month before the expiration date to ensure compliance and continued data collection.

Please feel free to contact me if you have any questions.



IRB Chair
Associate Professor, College of Pharmacy and Health Sciences
Erik.Maki@Drake.edu
515-326-0171