ABSTRACT

TEACHER BELIEFS ABOUT FACTORS THAT INFLUENCE STUDENT DROPOUT, IMPLICIT THEORIES OF INTELLIGENCE AND SELF-EFFICACY

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This study was an exploratory study examining teacher beliefs about the factors that influence student dropout, their implicit theory of intelligence beliefs, and their self-efficacy beliefs. A three part survey was used in this study. The first part of the survey, an instrument developed for this study, was based on Rumberger’s 2011 Framework for Understanding Dropout. The second instrument was the Theories of Intelligence Scale (TIS; Dweck, 1995) and the third instrument was the Teacher Self Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001). Participants were 276 secondary teachers. Results indicated that participants placed a higher importance on individual factors than on institutional factors in terms of influence on dropout. Results did not support the hypothesis that positive correlations would exist among the three measured constructs. A positive correlation was found between teachers’ theories of intelligence and their self-efficacy. Further research examining teacher beliefs about the factors that influence student dropout, their beliefs in the malleability of student intelligence, and their own efficacy beliefs is needed.
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TEACHER BELIEFS ABOUT FACTORS THAT INFLUENCE STUDENT DROPOUT,
IMPLICIT THEORIES OF INTELLIGENCE AND SELF-EFFICACY

BY

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DEDICATION

To Cade and Natalie
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CHAPTER 1
INTRODUCTION

Rationale for the Study

At the beginning of the twenty first century, Robert Balfanz stated “the United States is developing a deep social consensus that American high schools should ensure that all adolescents graduate from high school prepared for post-secondary schooling and training” (Balfanz, 2009, p. 17). Harvey and Housman (2004) argue “a high-school diploma has become the essential foundation of economic and civic life in the United States” (p. 18). Given the growing scarcity and competitiveness for jobs that pay a living wage coupled with the demands of the global economy for skilled and educated workers, it is difficult to dispute that graduation from high school is related to economic self-sufficiency. Industries that once provided high-paying, low-skill employment options for high school dropouts have been replaced with technology and/or moved to other countries where labor is cheaper (Harvey & Housman, 2004).

A report published in June 2013 by the Georgetown University Center on Education and the Workforce predicts jobs will increase from approximately 140 million to 165 million through 2020, with 55 million job openings available through a combination of newly created jobs and retirements. While 65% of these jobs will require at least some college, all of them will require a high school diploma (Carnevale, Smith & Strohl, 2013). With the majority of jobs available requiring at least some college, the need for a high school diploma is evident.
In spite of statistics indicating the importance of, and need for, a high school diploma, every year hundreds of thousands of students drop out of high school (Stetser & Stillwell, 2014). The number of high school dropouts in the United States is problematic because of the negative outcomes associated with dropping out, including fewer opportunities for gainful employment (Bureau of Labor Statistics, 2015). Jobs are available but earning potential is limited for students who drop out of school and do not earn a diploma. Overall, average earnings for workers over the age of twenty five with a high school diploma are 38% higher than workers without a diploma (Bureau of Labor Statistics, 2014). Unemployed and low wage earners cost the nation in lost productivity and reduced income tax contribution (Rumberger, 2001). Dropouts are also more likely to have health problems, engage in criminal activity, and become dependent on welfare and other government programs than high school graduates (Rumberger, 1987).

Problem Statement

The problems associated with high school dropout are exacerbated for minorities and students from low income households. While the U.S. Department of Education reports dropout rates overall have declined for Whites, Blacks, and Hispanics since the early 1970’s, dropout rates for Black and Hispanic students have been consistently higher than the national average (Stark & Noel, 2015). Data on dropout rates collected by the National Center on Educational Statistics also indicated dropout rates for students from low income households are significantly higher than students from middle and high income households (Stark & Noel, 2015). Not only are dropout rates higher, but unemployment rates are also higher for minorities. As of April
2016, the unemployment rate for Blacks was 8.8 %, for Hispanics, 6.1 %, and for Whites was 4.3 % with the national average being 4.3 % (Bureau of Labor Statistics, 2016).

Schools are charged with the responsibility of educating all students, regardless of ethnicity, race, and poverty status. For schools that serve minority and low income students, disengagement and dropout continue to be significant problems that have detrimental effects on students, schools and society (Rumberger, 2011). As educational leaders, school administrators are responsible for ensuring that teachers understand the importance of their role in the classroom, and that they are implementing pedagogical practices that support student learning to the greatest extent possible for as many students as possible. Teacher beliefs can affect their pedagogical practices in the classroom as well as their interactions with students. While student dropout is influenced by a multitude of factors, there are factors that educators have a significant impact on, including school and classroom climate, student-teacher relationships, and quality of instruction that can significantly impact student achievement and help to mitigate the dropout problem (Hattie, 2009).

Theoretical Framework

A Framework for Understanding Dropout

There are many conceptual frameworks to examine student dropout and most contain an element of personal or student characteristics, and school or environmental characteristics. For this study, Rumberger’s (2011) conceptual framework is used (see Figure 1). Rumberger argues the only way to fully understand the dropout crisis is to examine student dropout within a
conceptual framework that acknowledges both individual and institutional factors that influence student dropout. He argues that due to the complexity of student dropout, it is impossible to establish causal effects, but it is possible to establish factors and characteristics that can predict which students are at a higher risk of dropping out (Rumberger, 2001). This conceptual framework emphasizes individual factors associated with students in three areas: Academic achievement, educational persistence, and educational attainment. The three major institutional contexts which influence students are families, schools and communities. While both individual and institutional factors are equally important, the way they interact can change over time as students progress through school (Rumberger, 2011).

The first of the four domains of the individual portion of Rumberger’s (2011) framework, academic performance, considers educational achievement reflected in test scores and grades, and educational persistence indicated by whether students remain in the same school (mobility) or remain in school at all (dropout). Educational attainment refers to progressing in school (earning credits, promoting to the next grade) and completing school by earning a diploma (Rumberger, 2011). The second domain of the individual portion of the framework is behaviors. The first factor in this domain is engagement. Rumberger describes engagement as students being intellectually interested and cognitively involved with their learning, and displaying behaviors such as compliance, participation in the classroom and work completion (Rumberger, 2001). Other factors in the behaviors domain are coursework (the types of courses students are enrolled in), deviance (misbehavior, drug use, not attending school), peer associations, and employment. The third domain, attitudes, refers to students’ goals, values and self-perceptions (perceived competence, perceived autonomy, perceived sense of belonging).
The fourth domain, *background*, refers to student demographics (race, gender), health, prior academic performance and past school related experiences such as pre-school and summer school.

Rumberger (2011) argues that individual student factors are influenced by the three major institutional settings in which students live: family, school, and community. The institutional portion of the framework considers key features of students’ institutional environments of family, school and community as they relate to the likelihood that a student will drop out of school. Factors in the *family* setting include structure, resources and practices. *Family structure* refers to the people who live in a student’s household, and whether it is a single or step parent household. *Family resources* refers to socioeconomic status. *Family practices* refer to the level of family support a student receives, and parenting style. Factors in the *school* setting include student composition, structure, resources, and practices. *Student composition* includes the overall racial, gender and socioeconomic makeup of the student population. *Resources* include the monetary support that the school receives from the government, quality of facilities, technology, academic resources, as well as the number and quality of teachers and staff. *School practices* include school schedules, rules, procedures, curricular offerings, retention policies and alternative education offerings. School practices also refer to teacher pedagogical practices in the classroom. *Community* refers to the predominant socioeconomic status, values, and racial/ethnic makeup of the residents in the area where the school is located. Of the three contexts of the institutional framework, school factors can be most directly affected by educational policy and practices (Rumberger, 2001). Because teacher beliefs can influence their pedagogical practices and behaviors in the classroom, which in turn can influence student academic performance, the
relationship between teacher beliefs about the causes of student dropout as described in Rumberger’s framework, teachers’ implicit theories of intelligence and their self-efficacy beliefs will be examined.

Figure 1. Rumberger’s 2011 Framework

Implicit Theories of Intelligence

Dweck, Chiu and Hong (1995) presented a model for identifying individuals’ implicit theories and how they relate to beliefs about human actions and outcomes. They define implicit theories as core beliefs, or mindsets. They argue individuals tend to have one of two distinct sets of beliefs regarding the malleability of certain traits. Entity theory refers to individuals who believe attributes such as intelligence are fixed, nonmalleable entities. An entity theory of intelligence illustrates the belief that although it is possible to learn new things, intelligence is a fixed trait that cannot be changed or improved significantly. Incremental theory refers to
individuals who believe attributes such as intelligence are malleable and can be changed and developed significantly with effort. An incremental theory of intelligence illustrates the belief that an individual can increase his or her intelligence by exerting effort to challenging learning experiences (Dweck et al., 1995). In more recent publications, Dweck refers to implicit theories as mindsets, with entity theory referred to as “fixed mindset” and incremental theory referred to as “growth mindset” (Dweck, 2006). Dweck and colleagues (1995) assert that holding one view over another (entity vs. incremental) influences the way that individuals approach challenging situations, the way they behave when faced with a difficult task, and what they attribute success or failure to. Research suggests teachers’ implicit theories of intelligence can influence students’ beliefs about intelligence (Pretzlik, Olsen, Nabuko & Cruz, 2003), which in turn impacts students’ motivation and achievement (Aronson, Fried, & Good, 2002; Blackwell, Trzesniewski, & Dweck, 2007; Dweck, 1999).

Teacher Self-Efficacy

Teacher efficacy has been defined as “teachers’ belief or conviction that they can influence how well students learn, even those who may be difficult or unmotivated” (Guskey & Passaro, 1994, p.4). Teachers self-efficacy beliefs have been positively correlated to student achievement (Ashton & Webb, 1986; Ross, 1992), potentially making teacher self-efficacy an important construct in understanding and preventing student dropout. However, teacher self-efficacy is context specific; while teachers may feel efficacious teaching certain subjects to certain students, they may not feel as efficacious in different circumstances with different students, especially students that may not respond to instruction as expected (Ross, 1994).
Teachers’ efficacy beliefs influence their persistence when faced with challenge and their resilience when setbacks occur (Tschannen-Moran, Hoy & Hoy, 1998).

Teaching students at risk can be a challenging task; when faced with this task, teacher beliefs can influence the way they approach the challenge. A teacher who believes that school factors, specifically pedagogical choices and actions, significantly affect student dropout may be more likely to implement practices that engage students in learning than a teacher who believes that individual student factors beyond their control have a larger effect on dropout. A teacher with an incremental theory of intelligence may be more likely to persevere and use a variety of methods to teach students who are not academically successful, based on the belief that their efforts will positively impact student intelligence and academic achievement. Teacher beliefs about the factors that influence dropout and their implicit theory of intelligence may affect their perceptions of self-efficacy in the classroom.

Purpose of the Study

This study examines the relationships between teacher beliefs about the factors that influence student dropout, teachers’ implicit theory of intelligence, and teacher self-efficacy. Reliable and valid instruments exist to measure teachers’ implicit theories of intelligence and self-efficacy, the Theory of Intelligence Scale (TIS; Dweck, 1995) and the Teacher Self-Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001). However, because no instrument exists to measure teacher beliefs about the factors that influence dropout as Rumberger theorized in his 2011 framework, a survey was created for this study. Examining teacher beliefs about factors
influencing student dropout, their beliefs about the malleability of students’ intelligence and capacity for learning, and their beliefs about their own efficacy when working with challenging students can contribute to the literature on dropout prevention. A deeper understanding of the role of teachers in preventing student dropout can help states, school districts and schools develop and implement more effective dropout prevention strategies and interventions.

Significance of the Study

Teachers are a crucial component of any dropout prevention and/or intervention strategy. Teachers interact closely with students on a daily basis, and can have a significant influence on a student’s level of achievement (Hattie, 2009) and subsequent educational outcomes. Rumberger (2001) argues that student engagement is a crucial factor influencing student dropout or completion of high school. There are many studies on student perceptions of teacher effect on student engagement and dropout indicating students believe in the importance of teacher influence on their success or lack thereof (Brewster & Bowen, 2004; Fall & Roberts, 2012; Iachini, Buettner, Anderson-Butcher, & Reno, 2013). However, there is little in the research regarding teacher beliefs about the causes for student dropout and the extent to which teachers believe they can influence dropout. Teacher beliefs about the aspects of Rumberger’s framework that are most influential in leading to student dropout, their beliefs about the malleability of their students’ intelligence, and their perceptions of their ability to influence student learning outcomes can affect their behaviors in the classroom toward students as well as their pedagogical practices, thereby influencing student levels of engagement, achievement and attainment. For
educational administrators involved in leading teachers and developing school climates supportive of student learning, knowledge of teacher beliefs about the aspects of Rumberger’s framework can inform decisions about resource allocation, such as programs to identify and support struggling students, remediation, credit recovery opportunities for students, and professional development for teachers who work with students at risk of dropping out.

The following research questions will guide this study:

RQ1: What are the psychometric properties of the survey “Factors that Influence Dropout” and how do they match up to Rumberger’s framework?

RQ2: What importance do teachers assign to factors leading to student dropout?

RQ3: What are the relationships among teacher beliefs about factors that influence student dropout, their implicit theory of intelligence beliefs, and self-efficacy beliefs?
CHAPTER 2
REVIEW OF THE LITERATURE

Introduction

This study focuses on factors teachers believe influence student dropout, teachers’ implicit theories of intelligence, and teacher self-efficacy. The literature review contains information on student dropout and lack of educational attainment in the United States, including how policies and practices have changed over time in relation to student dropout, and how dropout statistics are obtained and measured. Additionally, factors influencing student dropout, which include academic performance (particularly in the ninth grade), family and demographic characteristics, mobility, and the significance of teacher beliefs about the factors that influence student dropout, implicit theories of intelligence and teacher self-efficacy are also reviewed.

Educational Legislation and Policy

Since the 1980s schools in the United States have experienced pressure to increase academic achievement, to focus on college prep courses, and to increase graduation requirements (Smith & Lincoln, 1988). At the same time, the level of accountability for schools has also increased (Smith & Lincoln, 1988). While the goal of these changes was to improve student
academic performance, it has created an even greater sense of alienation and disengagement from the school setting for students who have responded negatively to the organization, structure and expectations of the school environment, which puts many students at risk of school failure and dropout (Smith & Lincoln, 1988).

In 1983, the National Commission on Educational Excellence published a report entitled *A Nation at Risk*. Findings indicated high school students in the United States were academically lagging behind students in other countries, especially in areas of math and science, the driving forces behind economic innovation. Findings were divided into four categories: Content, expectations, time, and teaching. Overall, it was reported that students were not being offered or pushed into higher level coursework, and average achievement and time spent on homework and math courses was much lower than average achievement and time spent on homework and math courses by students in other countries despite the fact that grades were getting better (Gardner, 1983). The commission recommended increased academic standards for high school courses and increased requirements for graduation. Implementation of the recommended reforms proved relatively ineffective because of inconsistent implementation and enforcement at the local level (Carlson & Planty, 2012).

As a follow-up to *A Nation at Risk*, in 1986 the Carnegie Forum on Education and Economy published *A Nation Prepared: Teachers for the 21st Century*. This report called for increased rigor of teacher preparation programs, higher standards for becoming a teacher and for professional standards for teachers in practice, as well as increased teacher salaries for added appeal of the profession for the nation’s top college graduates. Like *A Nation at Risk*, the report detailed the components of education reform needed to make our schools competitive with other
nations; however, both left the implementation of the recommended reforms to states and local governments, including one of the most important aspects, funding. How schools in poverty were to implement the recommended reforms was not addressed, making it difficult, if not impossible, for schools with the fewest resources and greatest numbers of struggling students unable to implement them (Sunderman, Kim, & Orfield, 2005).

Although these reports greatly increased public awareness of the need for educational reform, for many minority students and those living in poverty, reforms were not implemented due to lack of resources. This issue was examined in Jonathan Kozol’s *Savage Inequalities* (1992). Kozol exposed the tiered system of educational opportunities as a significant factor in creating a disenfranchised population of students and a perpetual underclass. He delivered a detailed and disturbing description of the lack of educational opportunities available to urban minority students living in poverty, providing more insight into why the number of students dropping out of school with few academic and social skills continued to grow. He attributed the lack of quality education and high dropout rates for students living in poverty to the school funding system in the United States, which is based on local property taxes. In areas where property values are very low, even with high tax rates schools cannot be adequately funded. He argues for schools to be funded equitably through the federal government to create a more equitable public education system in the United States (Kozol, 1992).

In 2001, major federal education legislation was updated and enacted. As part of the reauthorization of the Elementary and Secondary Education Act, Congress enacted the No Child Left Behind Act (NCLB, 2002), increasing the federal government’s role in evaluating the quality of education in the United States. Prior to NCLB, state and local government entities
were primarily responsible for establishing learning standards and evaluating their implementation. This legislation required states to not only establish learning standards but to assess all students on a yearly basis. It gave detailed rules for how schools would be evaluated by standardized test scores. In addition, it required that all teachers be “highly qualified” in the subject area they were teaching.

The merits of No Child Left Behind and its effects on student achievement and the field of education in general have been debated since its enactment. One major criticism is the reforms are mandated by the federal government, but funded by state governments, leaving many schools unable to fund the mandate (Sunderman et al., 2005). However, prior to NCLB, schools in areas of poverty were not consistently providing students with a high quality education, as Kozol illustrated in *Savage Inequalities*. This legislation attempted to address that fact and provided a framework for improvement. However, because it was implemented differently among different districts throughout the United States, and because of the complex interaction of multiple factors affecting the dropout rate, it is difficult to determine what effect this legislation has had on dropout rates in areas of poverty, which remain higher than the national average.

The 2009 American Recovery and Reinvestment Act included an incentive for educators across the country to apply for money through a federal grant program called Race to the Top. Eighteen states and Washington, DC received funds from the grant. However, the $4.35 billion allocated represented 1% of the nation’s total education spending; so while the federal government funded many proposals submitted by states to improve education, it did not address the fundamental issues associated with local property taxes as the basis for school funding (American Recovery and Reinvestment Act, 2009). While legislation was enacted to increase the
quality of education in the United States, as well as reduce the dropout rate, without legislation to address other components of this complex problem, such as funding inequities, it seems that legislation alone cannot significantly reduced the dropout rate. Legislative efforts of the past fifty years have yet to demonstrate a significant positive impact on school dropout in the United States.

While educational policy has thus far not solved the problems exacerbated by inequities in funding and resources in schools throughout the United States, the Every Student Succeeds Act, recently signed into law by President Obama in December 2015, seeks to address some of the shortcomings of previous education policy and legislation (specifically the No Child Left behind Act), by allowing states to determine their own measures of student progress based on annual standardized testing results. While states will still administer standardized tests annually, they will not be the only measure of student learning. ESSA allows for multiple measures of learning and progress, as well as other measures of student success to make school accountability decisions. Furthermore, the construct of Adequate Yearly Progress, which was set by the federal government based on schools’ overall standardized test scores, will no longer be used. This change was based on the premise that standardized tests do not provide a complete picture of student learning, and unfairly punish schools that are located in areas of poverty, and have inadequate funding (ESSA, 2015). The Every Student Succeeds Act further attempts to address the issue of funding inequities by developing a pilot program for a weighted student funding formula. In this pilot program, schools are allowed greater flexibility in their use of federal Title I funds in exchange for a commitment to equitable distribution of state and local funds, based on per pupil expenditures, to their highest poverty school districts. ESSA does not mandate
equitable funding structures be implemented at the state level; however, this pilot program acknowledges that educational funding can have a significant impact on student outcomes.

While policy, legislation and funding are important aspects of the public education system, they are components of a large, complex institution. The actions of educational leaders and teachers must be in compliance with the legal requirements set forth by governmental agencies, and these requirements provide a context and structure for the daily activities that occur within schools. In this study, teacher beliefs are examined as one component of the complex public education system that influences its overall effectiveness in providing quality education to all students, culminating in high school graduation. Because of the complexity of the problem of student dropout, the solution to this problem will likely be comprehensive, based on broad components such as legislation and policy, as well as more narrowly focused components such as teacher beliefs and practices.

Measuring Dropout Rates and Associated Data

Getting an accurate measurement of dropout rates can be difficult due to the ways that data on student dropout is collected, defined and measured. State education agencies (SEAs) report student data to the National Center for Education Statistics (NCES), the federal entity that collects public education data for the United States Department of Education. Data from 2012 and beyond is submitted through the EDFacts system, a digital data management system, designed to streamline the data collection and reporting process. Additionally, the Current Population Survey is a statistical survey conducted by the United States Census Bureau for the
Bureau of Labor Statistics. This survey is primarily designed to collect data on employment, but demographic information such as education level is also collected.

There are several different ways to define and calculate the terms *dropout* and *graduation*. NCES defines the *event* dropout rate as the percentage of students who were enrolled in grades 9-12 during a given school year, were not enrolled in school during the following school year, and had not earned a high school diploma or completed a state-or district-approved education plan (U.S. Department of Education, 2015). This is different than the *status* dropout rate, which includes all people ages 16-24 that are not enrolled in school and have not earned a diploma or a high school credential, making those rates higher than the event dropout rate (Stetser & Stillwell, 2014). High school completion rate is also measured by NCES, but is calculated differently than graduation rate. Two of the main differences are that “completion” includes equivalency certificates and graduation from alternative education programs. It also does not place a time limit on completion, as graduation rate does (Stetser & Stillwell, 2014).

NCES calculates graduation rates using the Average Freshman Graduation Rate (AFGR), which became a required reporting statistic for states for the 2011-2012 school year (National Center for Educational Statistics, 2014). This statistic provides an estimate of the percentage of high school students who graduate on time by dividing the number of graduates with regular diplomas by the estimated size of the incoming freshman class four years earlier, expressed as a percent. NCES also calculates the Adjusted Cohort Graduation Rate (ACGR), which is another required reporting statistic. From the beginning of ninth grade (or the earliest high school grade) students who are entering that grade for the first time form a cohort that is “adjusted” by adding any students who subsequently transfer into the cohort from another state and subtracting any
students who subsequently transfer out, emigrate to another country, or die (Stetser & Stillwell, 2014). While the ACGR is more accurate than the AFGR, both statistics can provide a more accurate reflection of the dropout rate, in that a district may have an event dropout rate for a school that only represents the number of students who left school that year, not the cumulative numbers for each of the four years a cohort attends high school. The overall national ACGR was 80% in the 2011-2012 school year, meaning that 80% of students received a regular diploma within four years’ time (Stetser & Stillwell, 2014). The ACGR varied widely from state to state, from 59% in the District of Columbia to 89% in Iowa. The overall national ACGR by ethnicity was 88% for Asian/Pacific Islanders, 86% for White students, 73% for Hispanic students, and 69% for Black students. For economically disadvantaged students the ACGR was 72%, for students with Limited English Proficiency it was 59% and for students with disabilities it was 61% (Stetser & Stillwell, 2014).

The overall event dropout rate in the United States in 2012 was 3.4%, with significant variance in event dropout rates for different ethnic groups. Rates were much higher for Hispanic (6.8%) and Black students (5.4%) than White students (1.6%) (Stark & Noel, 2015). Dropout rates may be higher than indicated by national statistics; dropout rates for Hispanic and Black students are estimated to be much higher than the rates calculated by the government (Hauser, Frederick & Andrew, 2007; Neild & Balfanz, 2006; Tyler & Lofstrum, 2009). Using Current Population Survey (CPS) data Hauser and colleagues estimated dropout rates to be 11.5% among whites and others, 18.3% among Blacks, and 21.6% among Hispanics, with dropout rates being higher for schools located in central cities as compared to suburban schools.
The overall status dropout rate in the United States in October 2012 was 6.6%. Status dropout rates varied by ethnicity; while they have declined for all groups over the past 40 years, they were higher for Black and Hispanic people (7.5% and 12.7%, respectively) than the status dropout rate for Whites (4.3%) and Asians (3.3%) (Stark & Noel, 2015).

To illustrate the complexities in calculating accurate dropout and graduation statistics, Neild and Balfanz (2006) examined data from the Philadelphia Public School database for approximately 130,000 students enrolled in sixth through twelfth grade to analyze student dropout patterns and trends. The looked at event or annual dropout data for the 2003-2004 school year as well as longitudinal cohort graduation rates for the freshman class that entered high school in 2000. In looking at the 2003-2004 school year data, they found that of the 26,224 students who left Philadelphia’s public schools, 41% were graduating seniors, 27% transferred to another school or district, with the remaining number of students (approximately 8,000) left the district without earning a diploma or indicating that they were transferring to another school or program. The majority of these students were in grade 10 or lower. Additionally, they divided the construct of dropout into two categories: formal and informal. Formal dropouts stopped attending school altogether. Informal dropouts had such low attendance that they were absent from school more often than they attended. They labeled these groups “dropouts” and “near-dropouts”, respectively. In addition to the formal dropouts, there were an additional 5,188 students that were classified as “near dropouts”. Researchers then analyzed the data for dropouts based on ethnicity, socioeconomic status (SES), and gender. They argue that while dropouts and near dropouts were represented at higher rates among African Americans (17.7%) and Hispanics (19.4%), rates were high enough among Whites (14.6%) and Asians (11.8%) to be a cause for
concern as well. In examining the effects of poverty on dropout rates, they found that schools with over 75% or more low income students, nearly 26% were dropouts or near dropouts, while schools with less than 40% low income students, 10% were dropouts or near dropouts. When examining cohort/status dropout data, they found that among all students who began 9th grade in Philadelphia Public Schools in 2001, between 41 and 46% graduated four years later, and conversely, 27 to 35% of the students had dropped out. This data indicates that event dropout data does not accurately reflect the number of students from each freshman class that graduates in four years.

Balfanz and Letgers (2004) used data from the Common Core of Data collected by the National Center for Education Statistics to examine what they termed the “promoting power” of high schools throughout the United States. They define this measure as the number of freshman enrolled at a high school compared to the number of seniors enrolled four years later. While they acknowledge that this is not the same measure as the graduation or dropout rate, they argue that it does provide a reliable indicator of whether schools are performing effectively to meet the goal of having all students graduate within four years, based on the assumption that when the number of seniors is close to the number of freshman that were enrolled four years earlier, most of the students remained in school and promoted at each grade level. They used two cut points to identify high schools as having extremely weak and weak promoting power. Schools with extremely weak promoting power had 50% or fewer seniors enrolled than freshman four years earlier, and schools with weak promoting power had 60% or fewer seniors enrolled than freshman four years earlier. They found that 18% of high schools in the United States with enrollments of 300 or more students could be classified as having weak promoting power.
Further analysis of enrollment data revealed that high schools with weak promoting power are those that serve high percentages of minority students. Three percent of high schools that enroll 90% or more white students can be classified as having weak promoting power, while 66% of high schools that enroll 90% or more minority students have weak promoting power. Overall, approximately 46% of African American students and 39% of Latino students in the United States attend schools with weak promoting power, in which at 40% of the students that began as freshman are not enrolled as seniors, compared to 11% of white students in the United States. Furthermore, data indicated that high schools with the weakest promoting power were concentrated in urban areas. New York, Chicago, Los Angeles, and Philadelphia were the cities with the greatest number of weak promoting power high schools (Balfanz & Letgers, 2004).

There are many reasons why it is difficult to get accurate data despite the abundance being collected by federal government entities such as the National Center for Education Statistics and housed in federal databases such as the Common Core of Data. States report annual enrollments, but do not track students over time. For example, states report data used to calculate event dropout rates once per year in October. A student could be enrolled in October, stop attending in November and then return the following October and be counted the same as a student who had attended the entire school year. In schools, principals report student status according to their interpretations and the information at hand; this may or may not be accurate. For example, a student may report that they are transferring to another school and not enroll at another school. There are also reporting discrepancies between states on students who do not attend school, are incarcerated or who have obtained a General Equivalency Diploma. Students who drop out before 9th grade are often not counted at all. Underreporting is common, and
neither state nor federal agencies are responsible to check the data (Kaufman, 2004; Orfield, 2004). This can make it difficult to track dropout and graduation trends over time for specific demographic groups as well as to determine how significant the problem of student dropout is.

In order to develop effective interventions to prevent student dropout, states, school districts and schools must have an accurate knowledge of the scope of the problem, which in this case means having an accurate account of the number of students that begin high school but do not finish. While national and state graduation rates can give an overview, this type of aggregate data does not accurately reflect the wide discrepancies that exist for minority, economically disadvantaged students or those with limited English proficiency or disabilities. While NCES is attempting to address this issue with the development of the EDFACTS system, a national student information database with specific reporting protocols for state reporting does not yet exist.

For the purpose of this study, the terms “graduation” and “high school completion” will refer to the NCES definition of graduation, meaning that students completed high school with a diploma within four years. “Dropout” will refer to students who are not enrolled in school, or have enrolled in a GED program and/or obtained a GED. The reason for the use of these definitions is that once students leave school, it is difficult to determine their status. Additionally, employment and educational outcomes for students with a GED are more similar to those for students that have dropped out than those that obtained a high school diploma (Rumberger, 2011).
Factors that Influence Students’ Risk of Dropping Out

Academic Performance in 9th Grade

As early as first grade, academic and achievement factors can predict likelihood of future dropouts (Alexander, Entwisle & Kabbani, 2001). Using data from the Baltimore City Public Schools’ Beginning Schools Study, researchers tracked 800 randomly selected students from first grade to dropout or graduation. They examined the relationship between dropping out and socioeconomic status (SES), as well as academic, family, and personal characteristics, including parent attitudes, general academic performance, grade retention and tracking, and pupil engagement behaviors and attitudes. Results of the study indicated a strong relationship between low test scores and poor grades in first grade and eventual student dropout. Fifty-eight percent of students with low test scores in first grade eventually dropped out, compared with 22% of students with high test scores. They also found that 60% of students with D and F grades in first grade dropped out, compared with 19% of students with A and B grades. Additionally, they found that retention in first grade was a strong predictor of dropout; 67% of students retained in first grade eventually dropped out of high school. Resilience factors were also examined in this study, and results indicated that students who felt engaged in school, based on a self-assessment, were less likely to drop out. Researchers also found student engagement, as measured by a teacher evaluation, was a more accurate predictor of student drop out; these trends extended from first grade to the point of drop out. Parent involvement and attitude toward education correlated positively to risk of dropping out as well. Students whose parents expressed a positive attitude
toward school and their child’s abilities were twice as likely to remain in school as students whose parents held negative attitudes.

Academic performance in ninth grade holds particular significance as an indicator of future academic achievement, including high school graduation. In transitioning from eighth to ninth grade, significant changes can occur in social and academic supports, peer relationships, sense of school membership, sense of self identity, perceived stressors, GPA, attendance, and sense of autonomy (Isakson & Jarvis, 1999). Students report a perceived decreased quality of the school environment, decreased academic, personal, and interpersonal functioning at grade transitions (Barber & Olsen, 2004). Students also report a decrease in school engagement as well as an increase in peer engagement (Seidman, Aber, Allen, & French, 1996).

Stearns and Glennie (2006) studied two aspects of the dropout process; whether the reasons students dropped out of school varied by age and grade levels, and whether ethnic and gender groups’ reasons for dropping out varied across different age levels and age groups. Data came from the North Carolina Education Research Data Center at Duke University, which houses data on every public school student in the state beginning with the 1996-1997 school year. This information is reported every October for the previous school year’s students. Using all students in the North Carolina public school system during the 1998-1999 school year as their sample, they analyzed data from over 200,000 students. Schools reported the reasons for dropping out, rather than the dropouts reporting the reasons themselves. Researchers compared dropout reasons by grade, age, gender and ethnicity. Reasons the school reported for dropping out included academic problems, disciplinary problems (including suspensions, expulsions, and incarcerations), employment, family reasons (including pregnancy, marriage, and caring for
children), and attendance reasons. The researchers found significant variation by grade level, age, gender, and ethnicity for reasons students drop out of high school. As hypothesized, employment as a reason for dropout increased with age and grade level. Girls were more likely to drop out than boys for family reasons, with Latina and African American girls more likely to do so than White girls. A significantly higher proportion of ninth grade students dropped out for disciplinary reasons than students in higher grades, with almost 11% of all ninth graders and 9% of dropouts under the age of 16 dropping out for this reason. Additionally, they found that male and African American students were more likely to drop out for disciplinary reasons than females and other ethnicities. Boys were found to be more likely than girls to drop out for academic reasons, with White boys being more likely to drop out for academic reasons than other ethnicities.

Roderick and Camburn (1999) reported that in Chicago, over 40% of ninth graders fail one or more major subjects in the first semester and recovery from this ninth grade failure is unlikely. The researchers suggested there are individual characteristics of the students, such as low academic skill level and low levels of family support that contribute to failure. From this perspective, they state:

We have set up urban schools to fail. They look and attempt to act like suburban schools with academic curriculums and social and academic demands that urban students are not capable of given the skills and the resources they bring to school (Roderick & Camburn, 1999, p. 307).

The study also examined ninth grade failure from the perspective of school effects, which included environmental, institutional and school climate. The study concluded student failure can
be attributed to a combination of personal factors (low academic skills and family support) and institutional factors. The reality being that urban high schools do not have the resources to support a positive and successful transition during the ninth grade year (Roderick & Camburn, 1999).

In 2005, Allensworth and Easton introduced the “On-Track Indicator” for use in Chicago Public Schools, to determine whether freshman students were on track to graduating high school within four years. Students are considered on track if they have accumulated five full course credits by the end of their freshman year (the amount required to promote to tenth grade), and have not received more than one failing semester grade in a core class (English, math, science or social studies). Using data from Chicago Public Schools student database on credits earned by 26,562 freshman enrolled during the 2003-2004 school year, as well as course pass rates for students enrolled as freshman from 2000-2001 school year through the 2003-2004 school year, researchers were able to predict student graduation rates using the on track indicator with 80% accuracy. They found this indicator to be more accurate as a predictor of graduation than student test scores at the end of eighth grade. They found that even for students entering high school in the top quartile of test scores, by the end of freshman year, 22% were off track, and only 37% eventually graduated four years later. At the other end, 68% of students in the bottom quartile of test scores graduated in four years if they were on track at the end of their freshman year.

Researchers argue student academic test scores, which are frequently used to place students in courses as well as academic interventions, less accurately predict whether or not a student will graduate than course failure during the ninth grade. In a 2014 follow up and review article, Allensworth, Gwynne, Moore and de la Torre (2014) noted research conducted by Allensworth
and Easton in 2007 for the Consortium on Chicago School Research supported the 2005 findings. When comparing the on-track indicator’s accuracy of predicting graduation to a model that combined eighth graders reading and math test scores, gender, race, age when they entered high school, socioeconomic status, and mobility when entering the middle grades, they could only accurately predict 65% of Chicago Public School graduates (Allensworth et al., 2014). Additionally they found combining the background model with the on track indicator model only improves its accuracy by about 1%. They go on to suggest this does not mean background characteristics are not related to high school graduation but rather affect it indirectly by impacting student performance in school (Allensworth et al., 2014).

Rosenkranz, de la Torre, Stevens, and Allensworth (2014) investigated the question of why students’ academic performance and levels of engagement decline in 9th grade. In a mixed method, longitudinal study that incorporated student grade and attendance data from the Chicago Public Schools database with student surveys and interviews, researchers followed a cohort of 32 students as they transitioned from eighth to ninth grade, from the 2007-2008 school year to the 2008-2009 school year. They compared grades and attendance data, as well as student reported data on perceptions of difficulty of work, time and effort spent on homework, as well as the amount of adult supervision in middle school compared to high school. Researchers found students’ average grades dropped a half a letter grade for all classes, for both core and non-core courses. They found similar levels of decline for White, Latino and African American students, as well as male and female students. This decline was found for high and low achieving students; overall, 89% of students had the same or lower GPA in ninth grade as they did in eighth grade. A significant decline occurred in student attendance, with 10.5 average days of absence for students
in eighth grade, and 27 average days of absence in ninth grade. To further study the decline in grades, researchers observed students’ English and math classes during both years, and interviewed the students during each school year. They found that neither the observers nor the students characterized ninth grade work as being more difficult than eighth grade work; students actually characterized ninth grade work as less challenging. Student survey data, when compared year to year, indicated students put less effort into their schoolwork, spending less time on studying and homework in ninth grade than they did in eighth grade. Students also reported they had less adult supervision in ninth grade, making it easier to miss class without consequence and to opt out of doing their work in class and at home. They reported that while these behaviors were enforced by adults in eighth grade, they were seen a decisions that students in ninth grade (Rosenkranz et al., 2014).

**Retention in Ninth Grade**

Research indicates ninth grade is a point where many students fail to promote to the next grade and beyond. Using data from NCES and CCD, Haney and colleagues (2005) studied enrollments of public school students by grade level over a thirty-year period. Their findings indicate not only has the rate of students leaving school between ninth and tenth grade tripled in the last thirty years, but enrollment in ninth grade has increased to the point which there is a disproportionate “bulge” of students in ninth grade.

A meta-analysis of seventeen studies on the relationship between grade retention and dropout indicated grade retention is one of the most powerful predictors of dropout (Jimerson,
Anderson & Whipple, 2002). As previously mentioned, Alexander et al. (2001) found repeating a grade was a strong predictor of dropout. Results from their longitudinal study of 800 Baltimore City Public School students indicated that 71% of students retained once eventually dropped out of high school. For students retained twice, the percentage increased to 80%, and for students retained in both elementary and middle school the percentage increased to 94%. Retaining students in ninth grade can be problematic because the students are then older than their grade level peers, and are closer to the minimum age for dropping out of school, depending on the state they reside in. Hauser, Frederick and Andrew (2007) argue that “under past, current, and foreseeable educational regimes, students who are held back typically fail to catch up academically. Because they are over-age for grade, they are more likely to drop out” (Hauser et al., 2007, p.1). A study on New York City’s Department of Education found nearly all dropouts in New York City were at one point overage for grade, and that half of the entering class will become overage and behind on credits, with the majority of these students being Black or Hispanic and male (New York City Department of Education, 2006). Students drop out in all grades of high school, but research indicates up to two thirds of students in urban high schools drop out at grade ten or lower, with a third at grade nine or lower (Neild & Balfanz, 2006). Even when students repeat ninth grade, they are not likely to do substantially better than they did the first time, typically failing at least half their classes and being retained again (Neild & Balfanz, 2006). In their study of on-track indicators, Allensworth and Easton (2005) found only 9% of students got back on track and graduated on time after being retained in ninth grade.

Researchers have attempted to establish the independent effect of the transition to ninth grade on dropout. Neild, Stoner-Eby, and Furstenberg (2008) argued that if ninth grade outcomes
are reflections of prior student characteristics, then perhaps the focus on ninth grade performance is unfounded. However, they further argued if ninth grade outcomes are predictors of dropout despite past student performance, then supporting students through the transition and ensuring the ninth grade year is successful is warranted. Using data from the Philadelphia Education Longitudinal Study (PELS), the sample in the Neild and colleagues 2008 study consisted of 2,892 students enrolled as eight graders during the 1995-1996 school year. Dropout rates were calculated by following the cohort until June of 2000, when they would have graduated after four years of high school. They also gathered information on students’ age, race and ethnicity, gender, and previous academic characteristics (derived from test scores) from the school district database. From a parent survey, they gathered information on parent marital status, education level of parents, whether the parent received welfare, and whether the child had ever been retained. From a student survey, they obtained data on student attitudes, behavior and educational aspirations in eighth grade. They further measured level of student academic and social engagement with school in eighth grade through student interviews and surveys. They compared this data to the post survey administered to students the following year in ninth grade. Results showed that 46% of the students sampled graduated from a Philadelphia public high school. Fifteen percent were still enrolled but had not earned enough credits to graduate, 12% had transferred, and 19% had dropped out. Dropout rates varied by school, ranging from almost 0% to almost 40%. Of those who had dropped out, 65.8% had not been promoted at the end of ninth grade, and 43.9% did not promote beyond ninth grade. After controlling for demographic and family background characteristics, previous school performance, and pre high school
attitudes and ambitions, results of the study indicate that students’ experiences in ninth grade are predictive of dropout (Neild et al., 2008).

**Student Mobility and Attendance**

Rumberger and Larson (1998) define student mobility as changing schools at least once before completing school or dropping out. Using data from the National Educational Longitudinal Survey, they studied the relationship between student mobility and student dropout. They tested three models on two groups of students: Eighth grade students in 1988 and then twelfth grade students in 1992 to examine the incidence, causes, and consequences of student mobility during high school. They researched the incidence of mobility among high school students and how that incidence varied among social class groups, the demographic, family and school factors, and whether changing schools reduces the odds of completing high school. They used student data from the National Educational Longitudinal Survey of 1988 (NELS:88) to construct three empirical models to predict the incidence and consequences of school mobility. They gathered follow up data in 1990, 1992, and 1994. Results indicated more than one quarter of high school students made non promotional school changes between eighth and twelfth grade. They found mobility patterns varied by socioeconomic status (SES), with 31% of students in the lowest quartile changing schools at least once compared to 25% of students in the highest SES quartile. Additionally they found students who changed high schools were significantly more likely to have dropped out by twelfth grade than those who had not changed, with the likelihood of dropout increasing with each school change (Rumberger & Larson, 1998).
In their research study on the effects of student mobility on high school dropout, Gasper, DeLuca and Estacion (2012) argue that the effect of switching schools is difficult to measure, as the characteristics of students who switch schools are similar to dropouts in terms of prior academic achievement and engagement. They further argue that switching schools may be one factor of many that interact to create a long term process of disengagement and eventual dropout, and that students who switch schools are more likely to have other risk factors and fewer protective factors to support a successful switch to a new school. They used propensity matching to compare students who switched schools to students who did not, but who were similar on all background factors predictive of dropping out. They used data from the National Longitudinal Survey of Youth 1997 (NLSY97), a nationally representative longitudinal survey of youth who were 12 to 16 years old on the sampling date of December 31, 1996. The independent variable of mobility was derived from student retrospective self-reports, while the dependent variable of dropout was derived from student self-report at each round of the NLSY97. Longitudinal data were collected on students for eight consecutive years, beginning at the end of students’ eighth grade year, with a sample size of 2,571. Researchers matched school movers to non-movers based on propensity scores derived from 177 pre-high school characteristics. Of the 818 school movers, they matched 797 to counterfactuals, discarding data for the remaining 21 students without a counterfactual. While they found switching schools increased likelihood of dropping out between 6 and 9%, the differences between students who switched schools and those who did not could be accounted for by family structure, previous behavior, and previous academic performance. Another finding was that student mobility does not affect all students the same way. For student with a high number of risk factors already, switching schools does not increase
the likelihood that they will drop out. For students with few risk factors, switching schools does not increase the likelihood that they will drop out either. The students from the middle propensity strata were those whose likelihood of dropout seemed most affected by switching schools (Gasper et al., 2012).

Student attendance can be considered an observable measure of student engagement with the school environment as well as a predictor of student dropout. Allensworth and Easton (2007) demonstrated the relationships between ninth grade attendance and graduation four years later. Using student attendance data from the Chicago Public Schools database, the results of their data analysis indicated that as number of absences during freshman year increased, the likelihood of graduating in four years decreased. Of students who missed 0-4 four days per semester freshman year, 87% graduated in four years. When the number of absences increased to 5-9 days of absence per semester freshman year, the percentage of students who graduated in four years fell to 63%, and continued to decline as number of absences increased. Researchers argue that the results of this data analysis indicate that missing even one week of school per semester freshman year can harm a student’s academic performance to the point where chances of graduation within four years are significantly diminished (Allensworth & Easton, 2007).

Family Structure

In the 1966 landmark report, Equality of Educational Opportunity Study (EEOS), James Coleman led a team of researchers in conducting a large scale, national study commissioned by the United States Department of Health, Education, and Welfare to examine and assess the
educational opportunities available to different racial and ethnic groups in the United States. The study consisted of a survey administered to approximately 645,000 first, third, sixth, ninth, and twelfth grade students from over 4,000 public schools. Principals and teachers also provided data via questionnaire responses. Data were collected on student age, gender, race and ethnic identity, socioeconomic background, attitudes toward learning, educational and career goals, and racial attitudes. Findings from the study indicated that student socioeconomic status, parental education and family background accounted for most of the variance in student educational outcomes, including high school completion (Coleman, 1966). In his 1988 study, *Social Capital in the Creation of Human Capital*, Coleman identified three forms of what he termed *social capital*: Obligations and expectations, information channels, and social norms. Additionally, he specified that *family background* is not a singular construct, but can be separated into three components: financial capital, human capital, and social capital, and all three influence the interactions between parents and children in regard to education. Financial capital refers to a family’s wealth, which can provide the resources that can aid student achievement, such as a pace to study at home and learning materials, while human capital refers to educational background and capabilities of parents. Social capital refers to how parents influence student achievement through communication of their attitudes toward schooling and their involvement in their students schooling in addition to their levels of education and income (Coleman, 1988). He argues the presence of adults and the attention adults pay to children constitute differing degrees of social capital. Using data collected from 58,270 tenth and twelfth grade students who participated in the 1980 National Center for Education Statistic’s *High School and Beyond* study, Coleman’s findings indicated students living in single parent households were
significantly more likely to drop out of school than students with two parents living in the household (Coleman, 1988). Rumberger and Larson’s (1998) findings from their study of student mobility also looked at the relationship between family structures. Their findings indicated that students from single and step parent families were more likely to change schools and to drop out of high school than students from two parent families, supporting Coleman’s earlier findings.

Many factors can influence student dropout: overall academic performance, retention, academic performance in ninth grade, gender, age, socioeconomic status, ethnicity, attendance, mobility, and family structure. While most of these factors are beyond the control of teachers to influence, student academic achievement is a factor that teachers can have a significant influence on. In the next section, I will review the literature on the importance of teacher beliefs as a component of school related factors that influence student dropout.

The Importance of Teacher Beliefs

Evidence found in the literature on teacher beliefs suggests a correlation between teacher beliefs and teacher actions and practices. Teacher beliefs about the factors that influence dropout, their implicit theory of intelligence and their self-efficacy in teaching at risk students can affect their classroom practices (Fives & Buehl, 2012; Kumar et al., 2015; Rattan et al., 2012, Woofolk-Hoy; Davis & Pape, 2006). The subsequent connection between teacher practices and student outcomes has been established in the literature (Hattie, 2009); teacher practices are a component of the institutional school characteristics in Rumberger’s framework, and unlike individual factors that schools have little influence over, pedagogical practices that impact
student outcomes are completely within the control of schools. Previous research on student dropout has primarily focused on student perceptions of the causes of dropout; research focused specifically on teacher beliefs about dropout is less abundant (Knesting-Lund, Reese & Boody, 2013).

In their review of the literature on the construct of teacher beliefs, Fives and Buehl (2012) discuss the definition of the term belief and its relationship to teacher actions and behaviors in the classroom. While there are many definitions of beliefs, commonalities in definitions suggest beliefs are implicit and explicit, exist along a continuum of stability, are activated by context demands, are interwoven, and exist as integrated systems (Fives & Buehl, 2012). They argue beliefs serve three functions related to action: Filters, frameworks and guides to action for teachers. Their model first suggests that teacher beliefs act as filters, in which teachers interpret events and content through their belief systems and determine what is relevant. Potential filters may include teacher beliefs about the role of teachers and students. Secondly, beliefs act as frames in that teachers define a problem or task, or conceptualize a problem at hand through their belief systems. Potential frames might include teaching practices. Thirdly, beliefs act as guides to action. Potential guides include self-efficacy and task value (Fives & Buehl, 2012). Teacher beliefs about factors that influence student dropout, the stability of student intelligence and their own self-efficacy for successfully teaching students at risk of dropping out can influence the pedagogical practices they employ when working with students at risk of dropping out.
Teacher Beliefs About Factors that Influence Dropout

Bridgeland, DiJulio and Balfanz (2009) conducted a nationally representative survey of 603 high school teachers to study their beliefs about student dropout. Participants who reported that at least a few students drop out of their schools each year and fail to complete their high school education were selected for the study. Additionally, researchers conducted focus group interviews with administrators and teachers who worked in low-income schools with high dropout rates in urban, suburban, and rural settings to obtain additional data on teacher beliefs about the factors that influence student dropout. Researchers asked participants about their beliefs regarding whether or not dropout was a problem in their schools and on a national level, why students drop out, and what might help students stay in school.

Findings indicated that 59% of teachers rated the national dropout rate as a major problem, with 11% rating it as a crisis. Thirty five percent of teachers surveyed rated the national dropout rate as a minor problem or not a problem at all, with 58% of teachers reporting that the nation’s high schools were doing a good or excellent job. For teachers in schools with a reported graduation rate of less than 80%, 84% rated the national dropout rate as a major problem or crisis, yet 64% of them described their own school as doing a good or excellent job. When asked how many students dropped out of their schools each year, 45% of teachers who reported that dropout was a major problem or crisis nationally responded that only a few students at their schools dropped out. Only 9% of teachers surveyed reported that many students dropped out of their schools. Focus group participants reported that they had difficulty determining the actual number of students in their school who dropped out due to a lack of tracking systems. They
further reported that they often relied on informal methods such as word of mouth to determine whether or not a student had dropped out. Forty six percent of teachers felt that national graduation rate statistics were unreliable.

When asked what factors influenced student dropout, the most frequent reason cited was not enough support at home, with 61% of teachers reporting it as a factor in most cases, and 89% reporting that it was a factor in at least some cases. Seventy four percent of teachers felt that all or most of the responsibility for student dropout belonged to their parents. Sixty two percent of teachers reported that students not being academically prepared for high school was a factor in at least some cases of dropout. Student attendance was another factor, with 45% of teachers reporting that excessive absenteeism was a factor influencing dropout in most cases. When asked how often chronically truant students fell behind in their classwork, 74% of teachers said very often. Personal reasons were another factor cited, with 78% of participants indicating that students spending time with peers disengaged from school was a factor in most or some cases of dropout. Additionally, teachers reported that a student’s need to get a job or support their family was a factor in most or some cases (48%), students having a child in at least some cases (45%), and caring for a family member was a factor in at least some cases (38%). Finally, only 20% of teachers saw a lack of interest in school as a factor in most cases of dropout. When data from a previous survey of student dropouts was shared with teachers, in which a majority of former students stated that boredom was a major reason they left high school, 42% of teachers in this study indicated that they felt students were making excuses for their failure in school. Teachers in focus groups expressed their frustration at engaging students who were described by some participants as “lazy” and having “a poor work ethic.”
When asked about what might help students stay in school, teachers were given two statements regarding standards and expectations. The first statement read “we should expect all students to meet high academic standards and provide extra support to struggling students to help them meet those standards.” Less than one third of teachers (32%) agreed with this statement. The second statement read “We should have a separate track to allow students who are not college bound to get a diploma without achieving standards.” A majority (58%) of teachers agreed with this statement. Seventy five percent of teachers surveyed indicated that even if higher standards were demanded of at-risk students, students would not work harder to meet those standards. When asked which group bore most or all of the responsibility for a student dropping out, 76% of teachers chose students, 74% chose parents, 19% chose the school system, 18% chose broader society, 13% chose elected officials, and 13% indicated that high school teachers themselves bore most or all of the responsibility for a student dropping out. When asked to choose which proposals they believed would reduce the dropout rate, 96% of participants somewhat or strongly favored alternative learning environments, 86% somewhat or strongly favored expanding college level learning opportunities, 72% somewhat or strongly favored individualized graduation plans, 72% somewhat or strongly favored a national clearinghouse to evaluate/disseminate existing research, 70% somewhat or strongly favored a national definition for graduation rates, and 68% of teachers favored a national attendance requirement age of 18, supporting struggling students, and enforcing truancy laws. The fact that teachers in this study overwhelmingly chose students and parents as being primarily responsible for student dropout, while very few attributed this responsibility to teachers indicates that a majority perceive dropout as being far more heavily influenced by factors outside of the school.
Similar attributions for factors that influence student dropout were found in a study examining teacher beliefs about African American males in a low performing high school (Lynn, Bacon, Totten, Bridges III & Jennings, 2010). Findings indicated that teachers blamed students, their families, and their communities for African American males’ low academic achievement. Researchers were interested in learning what factors teachers and administrators would attribute to the consistent underperformance of African American male students on standardized achievement tests, as well as their disproportionate representation in special education, and significantly higher dropout rates. At the time of the study, the school district was one of the lowest performing districts in the state on standardized achievement tests, as well as one of the largest, with approximately 100,000 students enrolled. The study took place in a high school with a student population of 953 students, of whom 99% were African American. Forty percent of students qualified for free and reduced lunch. It was one of the lowest performing schools in the district. Although the school reported an 84% graduation rate, as measured by the number of students who graduated divided by the number of students who began the year as seniors, researchers estimated the African American male dropout rate to be over 50%, based on an examination and analysis of school records. Participants in the study included 50 teachers, counselors, and administrators at a low performing high school, as well as a subset of 6 teachers who participated in ongoing interviews, a focus group, and classroom observations. Of the 50 staff member participants, 40 were African American females, 8 were African American males, and 2 were White females. Data was collected through a series of focus groups, individual interviews with staff, and ethnographic observations in the classroom. Data from interviews and focus groups was recorded and transcribed. Data from all three settings was analyzed to identify
themes. Results indicated that about 80% of participants attributed the low performance of African American students on individual student characteristics, such as their lack of motivation to learn, their failure to attend classes, their lack of interest in learning, their lack of preparation for school, their inability to focus, their participation in street culture, and failure to behave appropriately in class (Lynn et al., 2010). Additionally, almost all participants in the focus groups and interviews attributed low performance of African American students to home, community, and school factors, identifying parents as the primary cause of students’ failure to achieve. Participants further expressed beliefs about the incongruence between African American cultural mores and the expectations of the school environment, indicating that parents of African American students do not value education, lack structure in the home environment. Several participants commented on the school’s inability to sanction parents for students’ low performance.

Further supporting the findings of the two previously reviewed studies, a study comparing data from 40 high schools in Kentucky investigated school characteristics related to high school dropout rates (Christle, Jolivette & Nelson, 2007). Researchers used data from a purposive sample of the 20 high schools reporting the highest dropout rates and 20 high schools reporting the lowest dropout rates, according to data from the Kentucky Department of Education. Additionally, they selected eight high schools (four from each of the two groups), to conduct more focused research including administrator surveys, teacher interviews, and observations.

In the first stage of data collection and analysis, researchers compared the two high school groups on twelve school variables to determine how high schools with the highest dropout
rates differed from schools with the lowest dropout rates. In the second stage of data analysis, researchers collected data on-site via administrator survey, teacher interview, and observations to gather detailed information on the characteristics and climate of each school. A total of 24 staff members were interviewed from each group to measure their perceptions of academic expectations for students, school climate, family involvement, and indication of dropout as a school problem. Results between the two schools differed in all areas. Twenty three of 24 teachers in the low dropout rate group reported that their schools had high expectations for students, compared to 20 of the 24 teachers from the high dropout rate group. Eighteen of the teachers in the low dropout rate group described their school climate as good, with none saying poor. Sixteen of the teachers in the high dropout rate group said their school climate was good, with three rating it as poor. Only three of the teachers in the low dropout rate group indicated that family involvement at their schools was poor, compared to 14 of the teachers in the high dropout rate schools. Twelve of the teachers in the low dropout rate group said dropout was a problem, compared to 22 of the teachers in the high dropout rate group. Results of the teacher interview suggest that teachers in schools with high rates of student dropout perceive parent involvement as poor, and perceive dropout as a problem at their schools, they perceive their school climate as good, and perceive the teachers and administrators in their school as having high expectations for students. The results of this study suggest that teachers in schools with high dropout rates may attribute factors outside of the school as being more influential on student dropout than school related factors. Knesting-Lund, Reese and Boody (2013) investigated teacher perceptions of high school dropout and perceptions of their role in dropout prevention. In this study, they surveyed 95
teachers from two high schools in a Midwestern school district. When asked whether they believed dropout was a problem at their schools, a majority of teachers surveyed indicated that they believed dropout was a problem at their schools, and that they believed the problem was increasing. Teachers were then asked to rate the extent to which they believed twenty specific factors influenced a student’s decision to drop out of school on a 4 point scale, with ratings from 1 (not at all), to 4 (significantly). The factors identified by teachers as having the most influence on student dropout were frequent absences (M=3.89), frequent trouble at school (M=3.67), limited parental support (M=3.62), low academic achievement (M=3.56), and trouble with the law (M=3.56). Of the 95 teachers who completed the survey, 36 listed additional factors. Although “limited parental support” was listed as a factor in the rating section, 15 listed it as an additional factor. Other factors listed were: substance abuse, lack of extracurricular participation, negative peer influence, curriculum the student perceives as irrelevant, gang involvement, homelessness, medical reasons, frustration, and low self-esteem.

The survey also assessed teachers’ perceptions of their role in preventing dropout. Teachers were asked to rate the amount and the type of influence they had over students’ decision to drop out of school on a 4-point scale, from 1 (not at all) to 4 (significant). Results indicated that teachers felt they were moderately important in school’s efforts to reduce the number of students who drop out (M=3.30). Of the 95 teachers who participated in the survey, 81 described the type of influence they have over a students’ decision to drop out. Types of influence were categorized into four themes: relationship building, communicating caring, motivation and encouragement, and pointing to the future. Almost a quarter of teachers (24.7%) indicated that displaying concern and care for students was crucial to supporting student
persistence and success in school. While several teachers stated that students “need to see the value in education”, only 11% indicated that it is important for teachers to demonstrate the necessity of a high school diploma on a students’ future. Eleven percent of teachers stated they must encourage and motivate their students. Nearly 25% indicated that they have no influence over student dropout, indicating that outside influences, such as peers and family, and individual student characteristics were too strong for teachers to overcome through effort (Knesting-Lund et al., 2013). These results not only supports previous study’s findings that teachers attribute individual and family factors as being more influential on dropout than school factors, it further suggests a correlation between teacher beliefs about dropout and their self-efficacy beliefs. In addition to teachers’ beliefs about the factors that most influence student dropout, another construct that may affect teachers’ self-efficacy beliefs about their ability to help prevent students from dropping out is their implicit theories of intelligence beliefs.

Implicit Theories of Intelligence

The relationship between teacher implicit theories of intelligence and teacher actions can potentially have a significant impact on student achievement. While much of the research investigating the role of implicit theories of intelligence has focused on students, far fewer have investigated the role of implicit theories of intelligence in teachers (Gutshall, 2013, Jones, Bryant, Snyder, & Malone, 2012). The theoretical construct of implicit theory of intelligence refers to our beliefs about whether intelligence is a stable (entity), or malleable (incremental) trait. As previously stated, research suggests teachers’ implicit theories of intelligence can
influence students’ beliefs about intelligence (Pretzlik et al., 2003; Watanabe, 2006), which in turn impacts students’ motivation and achievement (Aronson et al., 2002; Blackwell et al., 2007; Dweck, 1999).

**Teacher Beliefs About Intelligence**

Teacher beliefs about intelligence have been shown to affect their pedagogical practices when working with students facing challenges (Rattan et al., 2012; Watanabe, 2006). Researchers conducted a four part study to investigate the relationship between teacher’s implicit theory of intelligence and their pedagogical response to students encountering difficulty. Rattan and colleagues formulated two hypotheses. First, they hypothesized that when confronted with a student who has demonstrated initial poor performance in a course, teachers with an entity theory (a belief that intelligence is fixed or nonmalleable) will be more likely than teachers with an incremental theory (a belief that intelligence is malleable) to conclude that the student has low ability and comfort them for their low aptitude. Second, they hypothesized that by demonstrating comforting behaviors toward students, teachers would subtly communicate their belief that the student has stable low ability along with low expectations, thereby demotivating the student to put forth more effort to be successful and lowering their expectations for future performance.

In the first study, 41 undergraduates were asked to complete an online survey measuring their implicit beliefs about intelligence, specifically as it related to math. They were then presented with a scenario of a seventh grade math student who received a 65% on the first math test of the year, and asked to imagine themselves as the teacher. Results indicated the more
participants favored an entity theory, the more they attributed the single instance of poor performance to low ability. Additionally, the more participants endorsed an entity rather than incremental theory, the greater percentage of the grade was attributed to low math intelligence (42.3%) rather than lack of hard work (30.7%) (Rattan et al., 2012).

In the second study, participants were 95 undergraduates. They were asked to read an article presenting expert evidence stating that math intelligence was either fixed or malleable, and were then assessed on their implicit theory of intelligence using the same measure as the first study. Next, participants read the same student scenario used in the first study. Finally, they were asked to take the role of the seventh grade math teacher and asked how they would respond to the student, using a 7 item index indicating the degree to which they would comfort the student. The items were divided into two subscales: consoling the student for poor performance (e.g. explaining that not everyone has math talent) and using teaching strategies that could reduce engagement and future achievement in the subject (e.g. assign less homework). Results indicated that participants who endorsed an entity theory of intelligence were significantly more likely to endorse the overall index of comfort-oriented strategies and teaching strategies that could reduce engagement and achievement (Rattan et al., 2012).

In the third study, Rattan and colleagues investigated whether participants who currently teach math would make the same judgments and recommend the same responses. Participants were 41 graduate students who were either math instructors or teaching assistants. They completed the implicit theories of math intelligence measure then read a student scenario similar to the first two studies, but modified for the undergraduate teaching context. In this scenario, a student in an undergraduate section of 20 students failed the first test of the year, and the
instructor of the course was conducting individual student conferences to discuss progress. Results were similar to those from the first and second studies. Participants who endorsed an entity theory of intelligence were more likely than participants holding an incremental theory of intelligence to attribute poor student performance on a single test to low math ability, to respond by comforting students, and to use teaching strategies that could reduce student engagement and achievement (Rattan et al., 2012).

In the fourth study, researchers investigated whether students receiving comfort oriented feedback would perceive their professors as having an entity theory about math intelligence and would feel less supported, encouraged and motivated. Fifty-four undergraduate students completed an online study in which they were asked to imagine they were in a calculus course at their university. They were going to meet with their professor to discuss their performance on the first test of the year. At the meeting they found out they had received a 65%, and were presented with one of three possible responses from the professor; comfort based, strategy based, and a control response which contained only two statements of caring that were present in both of the other responses. Students then completed the four item Perceptions of an Environmental Entity Theory scale and a four item measure that assessed the degree to which they believed their professor had low expectations and little investment in their future in the field. Results indicated feedback manipulation had a significant effect on participants’ perceptions of their professor’s beliefs about math intelligence malleability. Participants who received the comfort feedback viewed their professor as having a significantly stronger entity theory than participants in the strategy feedback or control groups. Additionally, participants who received comfort feedback reported feeling significantly less encouraged and motivated than those in the strategy or control
group, and estimated that their grade would remain the same or close to the low score. Participants in the strategy feedback group expected their grade to improve (Rattan et al.). Findings from this study underscore the significance of the relationship between teacher beliefs about intelligence, teacher interactions with students, and student behaviors.

Teacher beliefs about their students’ intelligence can influence students’ views of their own intelligence (Pretzlik et al., 2003). Fifty-eight 10 and 11 year old students and two teachers from London, United Kingdom as well as 47 students, age 5 and 6, and two teachers from Lisbon, Portugal, participated in the study. Students completed aptitude tests and self-perception measures for general ability, reading and math. Teachers were asked to rank the students in the class from “best” to “weakest.” Teacher beliefs about intelligence were also measured. Researchers found teacher beliefs about student intelligence correlated with students’ beliefs about their own intelligence and the intelligence of their peers (Pretzlik et al., 2003). Given the evidence that supports the significance of the relationship between students’ beliefs about their own intelligence and student achievement (Blackwell et al., 2007; Dweck et al., 1995), findings from this study suggest a need for further research on the relationship between teacher beliefs and student beliefs about intelligence.

**Student Beliefs About Intelligence**

Students’ implicit theories of intelligence have been shown to affect their behaviors related to school and their subsequent achievement (Blackwell et al., 2007; Dweck et al., 1995). For students struggling with multiple risk factors, the way they process and respond to academic challenges can make the difference between success and failure. Dweck et al. (1995) argued that
depending on their mindset, students differ widely in their goals, the amount of value they place on effort, their response to challenge, and their grades during times of adversity. Students with entity theory mindset tended to have looking smart as their primary academic goal as opposed to students with incremental theory, whose primary academic goal was learning. Students with entity theory mindset placed a lower value on effort, help, and strategies, and had a higher tendency to give up when faced with a challenge than incremental theory mindset students. Additionally, grades of students with entity theory mindset decreased or remained low during times of adversity, as opposed to students with incremental theory mindset, whose grades increased during times of adversity.

Blackwell and colleagues (2007) examined the relationship between students’ implicit theories of intelligence and their academic achievement in mathematics in a two part study. In the first study, researchers sought to answer three questions. First, they asked if students’ theories were related to their achievement trajectory over long periods of time. Second, they asked why theory of intelligence is related to grades. Third, they looked at whether teaching incremental theory provided an added benefit over a similar academic intervention. Researchers used data from a longitudinal study of junior high school students and a classroom intervention study to examine the relationship between theories of intelligence and achievement. Additionally, they sought to test mediators of this relationship.

Researchers followed four successive cohorts of students entering junior high school over five years. They assessed their intelligence theory beliefs at the beginning of seventh grade, and then tracked students’ achievement through seventh and eighth grade. Additionally, they used this data to test their model of the process linking achievement related beliefs to achievement
strategies and actual achievement throughout junior high school. Participants were 373 students (198 females and 175 males) in four successive seventh grade classes at a junior high school in New York City. Participants were 55% African American, 27% South Asian, 15% Hispanic, and 3% East Asian and European American. The sample varied in regard to socioeconomic status; 53% percent of participants qualified for free lunch.

Measures of student achievement included national percentile scores on the Citywide Achievement test administered in the spring of sixth grade, and in the fall and spring of seventh and eighth grade. Additionally mathematics grades were used as a measure. All of the participants within the same grade had the same teacher for mathematics. Mathematics grades were based on tests, homework, a project and class participation. Researchers chose this subject area because they believed it presented enough of a difficulty level to trigger a response to challenge that may not occur in subject areas presenting a lower level of challenge.

Researchers developed a set of scales designed to measure implicit theories of intelligence, as well as the following mediators: goal orientation, beliefs about effort, and helpless attributions and strategies in response to failure, with students rating items on a six point Likert scale. Results indicated that an incremental theory belief was positively associated with positive effort beliefs, learning goals, low helpless attributions, and positive strategies. Data from the study further indicated that while students with entity and incremental theories did not differ significantly in math achievement test scores at the beginning of seventh grade, by the end of eighth grade, scores of students with incremental theory belief increased steadily over two years and were significantly higher by the spring of eighth grade, compared to students with entity theory beliefs, whose scores declined steadily over the two years. Researchers concluded that
students with incremental theory beliefs had more positive motivational beliefs which were related to higher grades than students with entity theory beliefs (Blackwell et al., 2007).

The second part of this study examined whether teaching students that intelligence is malleable would lead to higher motivation and higher grades and achievement. Researchers replicated the intelligence theory beliefs assessment in the fall. In the spring semester they administered an intervention teaching students about incremental theory, then assessed the effects on classroom motivation and achievement. A control group receiving no interventions was used for comparison.

Participants were 99 students (49 female and 50 male) in a seventh grade class at a public school in New York City (a different school than the first study). Participants were 52% African American, 45% Latino, and 3% White and Asian. Students in this sample had overall lower achievement test scores than students in the first study and a higher percentage of them (79%) were eligible for free or reduced lunch. Final data analysis was based on 48 students in the experimental group and 43 students in the control group. There was not a significant difference in academic achievement or baseline motivational constructs between the two groups.

Students in both groups participated in eight workshops over the course of the spring semester. Four of the sessions contained the same content and format for both groups, while four of the sessions differed in content. The experimental group received instruction on incremental theory for four of the sessions, while the control group received instruction on the structure of memory. Data indicated that while as a whole, the group’s math grades had declined between the beginning and the end of the fall semester. However, after the intervention was implemented during the spring semester, grades of students in the experimental group improved significantly,
while grades of students in the control group continued to decline. The effect of the incremental theory intervention was even greater for students who had endorsed entity theory at the beginning of the year (Blackwell et al., 2007).

Working with a sample of community college students, Aronson and colleagues (2002) conducted an experiment to determine if encouraging incremental theory thinking would affect students’ academic engagement and achievement in the classroom. Participants were initially 109 undergraduate students at Stanford University. Thirty participants chose not continue with the study for a variety of reasons (i.e. time constraints, missed appointments, discomfort with release of transcript information). Seventy nine males and females were included in the final analysis (42 Black, 37 White). Participants were randomly assigned to one of three groups. Students in the first group were told they would be mentoring at-risk middle school students via a pen pal program. They were given letters written by a fictional seventh grader and asked to respond. Participants were instructed to impress upon their pen pals the importance of hard work and perseverance, as well as to emphasize the research on incremental theory and the malleability of intelligence. Students in the control group did not participate in any activity. Students in the second group were also asked to write an encouraging letter to a struggling seventh grader, but in this group they were asked to stress the importance of multiple intelligence theory. Students in both groups were asked to return a second time and write a similar letter to another at risk middle school student, and then a third time to take both of their letters and turn it into a speech advocating either incremental theory or multiple intelligence, respectively. After the intervention, participants completed a two item survey on their beliefs about the malleability of intelligence. Several weeks later they were surveyed to reassess their beliefs about the
malleability of intelligence in addition to rating their enjoyment of academics, their degree of identification with academics, and their experience with stereotype threat. Results indicated that African American students in the malleable intelligence experimental group reported greater enjoyment of the academic process, greater levels of academic engagement, and obtained higher grade point averages than students in the two control groups (Aronson et al., 2002).

Teacher beliefs about students, including the factors outside of school that influence dropout, as well as their implicit intelligence beliefs can help deepen our understanding of the role that teachers play in preventing student dropout. This study seeks to gain insight into the relationship between those two facets of teachers’ belief systems and their beliefs about their ability to influence student outcomes.

Teacher Self-Efficacy

The construct of teacher self-efficacy has been widely studied and established as a significant factor in teacher and student success. Early measures of teacher self-efficacy include a study analyzing reading score gains for students between fifth and sixth grade. The study, conducted with 20 elementary schools in the Los Angeles Unified School District, was published by the RAND Corporation in 1976. Participants included 81 teachers who completed a survey that included two items designed to measured teacher self-efficacy by asking teachers to rate their level of agreement with the following statements: “When it comes right down to it, a teacher really can’t do much because most of a student’s motivation and performance depends on his or her home environment” and, “If I try really hard, I can get through to even the most
difficult or unmotivated students.” (Armor, 1976). The first item was designed to measure teachers’ perception of what participants believed teachers can do in general, while the second item was designed to measure what participants believed they can do personally. Teachers who strongly agreed with the first statement indicated a belief that factors outside of the control of teachers and schools are too powerful for teachers to overcome through their own efforts. Strong agreement with the second statement indicated a belief that improving student learning was within their power to influence, despite outside factors (Tschannen-Moran et al., 1998). When they combined personal and general teaching efficacy into a single construct, Armor found that teacher efficacy predicted significant gains in reading achievement.

Another early instrument designed to measure teacher efficacy was Guskey’s (1981) Responsibility for Student Achievement. Participants were asked to distribute 100 percentage points between two alternatives, one attributing the cause of an event to the teacher, and the other attributing the cause of the same event to factors outside of the teacher’s control. Four types of causes were offered for success or failure: Specific teaching abilities, the effort put into teaching, the task difficulty, and luck (Guskey, 1981). These four causes aligned to causal components in attribution theory (Weiner, 1986). In a later study by Guskey, scores from the RSA were compared with teacher efficacy scores (measured using the scale from the RAND study), results indicated that teachers perceived a higher level of efficacy in their ability to influence positive outcomes than in their ability to prevent negative outcomes (Guskey, 1984).

More recently, Tschannen-Moran and Hoy (2001) developed the Teacher Sense of Efficacy Scale (TSES) to measure teachers’ perceived level of efficacy. This instrument includes the two items from the RAND study, as well as additional items developed by the researchers.
Researchers examined instruments developed through previous research in the area of efficacy, notably that of Armor (1976), Guskey (1981), Ashton et al. (1982) and Bandura (1997). Identifying measurement problems that have arisen with each of these measures, the developed the TSES as a measure of teacher efficacy beliefs. Their proposal for the use of this measure was supported by three separate reliability and validity studies, which established reliability and validity for both the 24 item long form and 12 item short form (Tschannen-Moran & Hoy, 2001).

In their study of the relationship between teacher self-efficacy beliefs, teacher job satisfaction and student achievement, Caprara, Barbaranelli, Steca, & Malone (2006) administered a questionnaire to 2,184 teachers in 75 junior high schools designed to measure their self-efficacy beliefs and their level of job satisfaction. Data were collected at three points over a two year period: Student grade data were collected at the end of year one, teacher questionnaire data were collected midway through year one, and then student grade data were collected at the end of year two. Researchers compared the results of the questionnaire with each school’s aggregated average grades at the end of the third year of junior high for two consecutive years. They hypothesized that students’ academic achievement at the end of the first year would predict academic achievement at the end of the second year, student academic achievement at the end of the first year would predict teacher job satisfaction and self-efficacy at the end of the second year, teachers’ self-efficacy beliefs would contribute significantly to subsequent students’ final academic achievement, teachers’ self-efficacy beliefs positively influence teachers’ job satisfaction, and job satisfaction would not contribute to students’ academic achievement unless accompanied by high perceived self-efficacy (Caprara et al., 2006). Results indicated that students’ academic achievement at the end of the first year was a strong predictor of student
achievement at the end of the second year. Additionally, results indicated that teacher efficacy beliefs influenced job satisfaction significantly, and was a strong predictor of student achievement (Caprara et al., 2006).

A recent study investigated the relationship between teachers’ efficacy for supporting at-risk students and their perceived role in dropout prevention (Knesting-Lund, O’Rourke & Gabriele, 2015). Researchers considered the possibility that teacher efficacy for supporting at-risk students could be related to their understanding of high school dropout. Participants were 159 teachers from four Midwestern high schools, two in suburban areas and two in rural areas. A two part survey was administered. The first part was a survey previously developed by Knesting-Lund and colleagues (2013) to assess teachers’ perceptions of their role in preventing dropout and their beliefs about the factors that influence student dropout. The second measure was an adaptation of Tschannen-Moran and Woofolk-Hoy’s (2001) Teacher Sense of Efficacy Scale. Teachers in this sample reported as strong sense of self-efficacy for supporting students at-risk of dropping out. Positive correlations existed between teacher’s sense of efficacy and the extent to which they perceived the following factors influence dropout: not having a close relationship with a teacher, not having a sense of belonging at school, believing no one cares if they drop out, believing adults at school want them to drop out, and school climate. Teachers with higher efficacy placed a greater emphasis on factors external to the student and within the school setting, as well as reporting a greater feeling of responsibility for preventing dropout (Knesting et al., 2015).
Conclusion

Institutional and individual factors influence whether a student drops out or stays in school. While individual factors and institutional factors such as school composition and available resources are beyond a teacher’s control, other institutional factors such as classroom practices that influence student academic performance are within the teacher sphere of influence. Teachers’ implicit theories of intelligence and self-efficacy beliefs have been shown to correlate to pedagogical practices and student achievement (Rattan et al., 2012; Caprara et al., 2006). Teachers with an incremental theory of intelligence and high levels of self-efficacy are more likely to engage in behaviors that have a positive effect on student achievement, such as persistence with students who do not succeed immediately, and trying new methods for teaching students who are not successful than teachers with an entity theory of intelligence and low self-efficacy (Rattan et al., 2012). Teachers who perceive individual student factors to have a strong influence on dropout are more likely to have lower self-efficacy (Kensting-Lund et al., 2015) and thereby less likely to persevere and try different methods with struggling students. The relationships among teacher beliefs about factors that influence dropout, their beliefs about whether student intelligence is malleable or fixed, and their perceptions about their level of influence can deepen our understanding of dropout and inform intervention and prevention strategies.
Research Questions

RQ1: What are the psychometric properties of the survey “Factors that Influence Dropout” and how do they match up to Rumberger’s framework?

RQ2: What importance do teachers assign to factors leading to student dropout?

Rumberger (2011) argues that dropout is a complex construct, and can be best understood by examining the factors that influence dropout through two separate lenses, the *individual* and the *institutional*. Certain factors are beyond a teacher’s control or influence, such as a student’s race, gender, family structure, and socioeconomic status. However, as Rumberger argues, schools and the individuals working within them have the power to leverage a certain amount of control over institutional factors. For teachers, classroom policies and practices are under their control to a significant degree. The way that teacher practices manifest themselves within the classroom can have a significant influence on student perceptions of school and student achievement (Brewster & Bowen, 2004; Fall & Roberts, 2012; Iachini et al., 2013). While there is little research on teacher beliefs about student dropout, Lynn et al. (2010) found that the teachers in their study attributed student failure and dropout to family and individual student factors far more than institutional factors, including their own practices. Knesting and colleague’s 2013 study supported these findings, with teachers in their study rating individual factors as having a more significant influence on dropout than institutional.
RQ3: What are the relationships among teacher beliefs about factors that influence student dropout, their implicit theory of intelligence beliefs, and self-efficacy beliefs?

Dweck and colleagues (1997) argue that individuals tend to have one of two distinct sets of beliefs regarding the malleability of certain traits. *Entity* theory refers to individuals who believe that attributes such as intelligence are fixed and nonmalleable entities. An entity theory of intelligence illustrates the belief that although it is possible to learn new things, intelligence is a fixed trait that cannot be changed or improved significantly. *Incremental* theory refers to individuals who believe attributes such as intelligence are malleable and can be changed and developed significantly with effort. An incremental theory of intelligence illustrates the belief that an individual can increase his or her intelligence by exerting effort to challenging learning experiences (Dweck et al., 1995). Dweck et al. (1995) assert that holding one view over another influences the way that individuals approach challenging situations, the way they behave when faced with a difficult task, and what they attribute success or failure to. Research suggests teachers’ implicit theories of intelligence can influence students’ beliefs about intelligence (Pretzlik et al., 2003), which in turn impacts students’ motivation and achievement (Aronson et al., 2002; Blackwell et al., 2007; Dweck, 1999).

Teachers self–efficacy beliefs have been positively correlated to student achievement (Ross, 1992, Ashton and Webb, 1986). Teachers’ efficacy beliefs influence their persistence when faced with challenge and their resilience when setbacks occur (Tschannen-Moran, Hoy & Hoy, 1998). However, teacher efficacy is context specific; while teachers may feel efficacious teaching certain subjects to certain students, they may not feel as efficacious in different circumstances, with different students, especially those that may not respond to instruction as
expected (Ross, 1994). Few studies have been conducted to examine the level of influence that teachers believe they have over student dropout specifically, despite the evidence that supports student beliefs that teachers have a significant amount of influence (Brewster & Bowen, 2004; Fall & Roberts, 2012; Iachini et al., 2013). A single pilot study indicated that teacher’s perceived themselves as having only a moderate level of influence over student dropout (Knesting et al., 2015). The data collected in relation to this question could add to the body of research on teacher self-efficacy beliefs regarding their role in dropout prevention.

The relationship between teacher beliefs about the factors that cause students to drop out and their ability to influence those factors have been examined in a small, pilot study, but further research is needed to support that relationship. Teachers attributed individual factors as having more influence on student dropout than institutional factors, and they perceived themselves as having only a moderate amount of influence over dropout (Knesting et al., 2013). An additional study examined the relationship between teacher efficacy beliefs and beliefs about the causes of dropout revealed a positive correlation between teacher efficacy and school related causes (Knesting et al., 2015). The relationship between teachers’ efficacy beliefs and their implicit theory of intelligence (entity versus incremental) is important, as both constructs can influence teacher practices and subsequent student achievement. While research indicates that students’ implicit theories of intelligence can have a significant influence on their perceptions of school and levels of achievement (Blackwell et al., 2007), and that explicitly teaching students to favor incremental theory over entity theory positively influences student outcomes (Aronson et al., 2002), there is little research that examines teacher beliefs about the malleability of student
intelligence (Pretzlik et al., 2003). This study will investigate the relationships between all three constructs.
CHAPTER 3

METHOD

Participants

Participants were a purposive sample of middle and high school teachers throughout the United States. Participants were asked to take an online survey accessed one of three ways: through an online link posted to weekly Twitter chats, Facebook, or email. Teachers who took the survey were asked to share the link to the survey with other secondary teachers by retweeting the link on their Twitter pages, reposting the link on their Facebook pages, or forwarding the link via email, establishing snowball sampling.

To sample from a national population, the link was shared through statewide weekly Twitter chats that focus on general education topics. The weekly Twitter chat schedule for each state is listed in Table 1. A link to the survey was published using each state hashtag during the weekly chat for two consecutive weeks. Additionally, the link was posted on the author’s personal Facebook page continuously for the four week data collection period.

A brief description of the survey was included with the link. Demographic questions at the beginning of the survey were used to determine eligibility. Any respondents who were not currently working as secondary level (grades 6-12) teachers at the time of data collection were excluded from the final data analysis. Two hundred seventy six teachers participated in the study. Of 278 total responses, two were not included in the data due to the fact that they did not teach in
### Table 1

*State Education Twitter Chats by State, Hashtag, Day, Time and Number of Respondents*

<table>
<thead>
<tr>
<th>State</th>
<th>Hashtag</th>
<th>Day</th>
<th>Time</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>#aledchat</td>
<td>Mondays</td>
<td>9-10 pm CST</td>
<td>0</td>
</tr>
<tr>
<td>Alaska</td>
<td>none</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Arizona</td>
<td>#azedchat</td>
<td>Wednesday</td>
<td>8-9 pm MST</td>
<td>26</td>
</tr>
<tr>
<td>Arkansas</td>
<td>#arkedchat</td>
<td>Thursdays</td>
<td>8-9 pm CST</td>
<td>1</td>
</tr>
<tr>
<td>California</td>
<td>#caedchat #norcalchat</td>
<td>Sundays</td>
<td>8-9 pm PST</td>
<td>2</td>
</tr>
<tr>
<td>Colorado</td>
<td>#COedchat</td>
<td>Mondays (every 4&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>4-4:45 pm MST</td>
<td>0</td>
</tr>
<tr>
<td>Connecticut</td>
<td>#ctedchat</td>
<td>Thursdays</td>
<td>8-9 pm EST</td>
<td>0</td>
</tr>
<tr>
<td>Delaware</td>
<td>#edude</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Florida</td>
<td>#FLedchat</td>
<td>Wednesdays</td>
<td>8-9 pm EST</td>
<td>0</td>
</tr>
<tr>
<td>Georgia</td>
<td>#gaed</td>
<td>Thursdays</td>
<td>8-9 pm EST</td>
<td>11</td>
</tr>
<tr>
<td>Hawaii</td>
<td>#edchatHI</td>
<td>Mondays</td>
<td>6pm HST</td>
<td>0</td>
</tr>
<tr>
<td>Idaho</td>
<td>#IDedchat</td>
<td>Mondays</td>
<td>7:30-8:30 MST</td>
<td>11</td>
</tr>
<tr>
<td>Indiana</td>
<td>#INelearn</td>
<td>Thursdays</td>
<td>8-9 pm EST</td>
<td>1</td>
</tr>
<tr>
<td>Iowa</td>
<td>#iaedchat</td>
<td>Sundays</td>
<td>8-9 pm CST</td>
<td>11</td>
</tr>
<tr>
<td>Kansas</td>
<td>#ksed</td>
<td>Mondays</td>
<td>8-9 pm CST</td>
<td>4</td>
</tr>
<tr>
<td>Kentucky</td>
<td>#kyedchat</td>
<td>Thursdays</td>
<td>8-9 pm EST</td>
<td>6</td>
</tr>
<tr>
<td>Louisiana</td>
<td>#laedchat</td>
<td>Tuesdays</td>
<td>7-8 pm CST</td>
<td>0</td>
</tr>
<tr>
<td>Maine</td>
<td>#edchatme</td>
<td>Thursdays</td>
<td>4-5 pm EST</td>
<td>0</td>
</tr>
<tr>
<td>Maryland</td>
<td>#mdedchat</td>
<td>Tuesdays</td>
<td>8-9 pm EST</td>
<td>0</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>#edchatma</td>
<td>Sundays</td>
<td>8-9 pm EST</td>
<td>0</td>
</tr>
<tr>
<td>Michigan</td>
<td>#miched</td>
<td>Wednesdays</td>
<td>8-9 pm EST</td>
<td>3</td>
</tr>
<tr>
<td>Mississippi</td>
<td>#MSedchat</td>
<td>Thursdays</td>
<td>7-8 pm CST</td>
<td>0</td>
</tr>
<tr>
<td>Minnesota</td>
<td>#mnedchat</td>
<td>Tuesdays</td>
<td>8 pm CST</td>
<td>0</td>
</tr>
<tr>
<td>Missouri</td>
<td>#moedchat</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Montana</td>
<td>#mtedchat</td>
<td>Tuesdays</td>
<td>8-9 pm MST</td>
<td>0</td>
</tr>
<tr>
<td>Nebraska</td>
<td>#nebedchat</td>
<td>Wednesdays</td>
<td>8-9 pm CST</td>
<td>0</td>
</tr>
<tr>
<td>Nevada</td>
<td>#nved</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>#nhed</td>
<td>Wednesdays</td>
<td>8-9 EST</td>
<td>18</td>
</tr>
<tr>
<td>New Jersey</td>
<td>#njed</td>
<td>Tuesdays</td>
<td>8:30-9:30 pm EST</td>
<td>0</td>
</tr>
<tr>
<td>New Mexico</td>
<td>none</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>State</td>
<td>Hashtag</td>
<td>Day</td>
<td>Time</td>
<td>Number of Respondents</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------</td>
<td>-----------</td>
<td>--------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>New York</td>
<td>#NYEDChat</td>
<td>Mondays</td>
<td>8:30-9:30 pm</td>
<td>3</td>
</tr>
<tr>
<td>North Carolina</td>
<td>#nced</td>
<td>Tuesdays (e/o)</td>
<td>8-9 pm EST</td>
<td>0</td>
</tr>
<tr>
<td>North Dakota</td>
<td>#ndedchat</td>
<td>Wednesdays</td>
<td>8-9 pm CST</td>
<td>0</td>
</tr>
<tr>
<td>Ohio</td>
<td>#ohedchat</td>
<td>Mondays</td>
<td>9-10 pm EST</td>
<td>1</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>#oklaed</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Oregon</td>
<td>#oredu</td>
<td></td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>#paedchat</td>
<td>Thursdays</td>
<td>9-10 pm EST</td>
<td>2</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>#edchatri</td>
<td>Sundays</td>
<td>8-9 pm EST</td>
<td>0</td>
</tr>
<tr>
<td>South Carolina</td>
<td>#sced</td>
<td>Sundays</td>
<td>9-10 pm EST</td>
<td>2</td>
</tr>
<tr>
<td>South Dakota</td>
<td>#sdedchat</td>
<td>Tuesdays</td>
<td>8-9 pm CST</td>
<td>30</td>
</tr>
<tr>
<td>Tennessee</td>
<td>#TNedchat</td>
<td>Thursdays</td>
<td>8-9 pm EST</td>
<td>1</td>
</tr>
<tr>
<td>Texas</td>
<td>#txeduchat #txed</td>
<td>Sundays</td>
<td>8-9 pm CST 8:30-9:30 pm CST</td>
<td>12</td>
</tr>
<tr>
<td>Utah</td>
<td>#UTedchat</td>
<td>Wednesdays</td>
<td>9-10 pm MST</td>
<td>0</td>
</tr>
<tr>
<td>Vermont</td>
<td>#vted</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Virginia</td>
<td>#vachat</td>
<td>Mondays</td>
<td>8-9 pm EST</td>
<td>1</td>
</tr>
<tr>
<td>Washington</td>
<td>none</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>West Virginia</td>
<td>#wvedchat</td>
<td>Thursdays</td>
<td>7:30-8:30 pm EST</td>
<td>0</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>#wischat</td>
<td>Sundays</td>
<td>8-9 pm CST</td>
<td>1</td>
</tr>
<tr>
<td>Wyoming</td>
<td>#wyoedchat</td>
<td>Sundays</td>
<td>8-9 pm MT</td>
<td>9</td>
</tr>
</tbody>
</table>
a high school setting. See Table 2 for participant demographic data. Participants responded online to the survey via Google form. Participation was anonymous. Survey respondents were asked to retweet the link on their own Twitter pages, repost the link to their Facebook pages, or forward the email link to other secondary level teachers. Responses were collected and stored online during the data collection period. At the end of the data collection period, data was downloaded, converted to a .CSV format for data analysis, then deleted from Google storage.

Table 2

Participant Demographic Data

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Years Teaching</th>
<th>N</th>
<th>Primary Subject Area</th>
<th>N</th>
<th>Race/Ethnicity</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>99</td>
<td>0-5</td>
<td>58</td>
<td>English/LA</td>
<td>48</td>
<td>African American</td>
<td>13</td>
</tr>
<tr>
<td>Female</td>
<td>177</td>
<td>6-10</td>
<td>61</td>
<td>Math</td>
<td>46</td>
<td>Asian</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11-15</td>
<td>63</td>
<td>Social Studies</td>
<td>40</td>
<td>Caucasian/Non-Hispanic</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16 or more</td>
<td>94</td>
<td>Science</td>
<td>38</td>
<td>Hispanic</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Other</td>
<td>104</td>
<td>Other</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prefer Not to Answer</td>
<td>17</td>
</tr>
</tbody>
</table>
Instrumentation and Materials

Three instruments were used for this study. The first instrument, Factors that Influence Dropout, was created for this study to determine which factors teachers believe influence student dropout. The factors used to create this survey were taken from Rumberger’s (2011) Framework for Understanding Dropout. Three questions for each factor were written based on Rumberger’s description of each factor. Participants were asked to respond to three questions related to each of the 21 factors influencing dropout, as described in Rumberger’s framework. To establish consistency through the compiled instrument and to allow respondents the ability to respond with adequate specificity, a six point scale was selected for the survey (1-strongly disagree to 6-strongly agree). The purpose of this section of the survey is twofold: To determine teacher beliefs about the causes of dropout and to validate Rumberger’s framework. Rumberger was contacted via email to inquire of any validation studies for his framework and he responded that to his knowledge, none had been conducted to evaluate the full framework (R.W. Rumberger, personal communication, May 10, 2015).

To establish content validity, seven subject matter experts reviewed the survey. All responses from the subject matter experts were reviewed and all seven were interviewed by the researcher to determine if they perceived the questions as appropriately related to the subscales they intended to measure, and if scaling was appropriate to the survey questions. Responses to interview questions indicated that the questions did relate appropriately to the subscales, and that the response scale of 1-6 allowed an adequate range of possible responses. All subject matter experts currently work as teachers, administrators or professors in the field of education.
The second instrument is the three item Theories of Intelligence Scale (TIS; Dweck, 1995). Respondents were asked to indicate the extent of their agreement with three statements regarding intelligence on a 6 point scale. The three statements are “You have a certain amount of intelligence and you really can’t do much to change it,” “Your intelligence is something about you that you can’t change very much,” and “You can learn new things but you can’t really change your basic intelligence.” Scores are averaged to determine an overall implicit theory score. A stronger level of agreement indicates a stronger incremental theory, and a lower level of agreement indicates a stronger entity theory.

Dweck and colleagues (1995) measured reliability across sample surveys and found the internal reliability alpha coefficients for the three-item survey on implicit theory of intelligence to be high (.94 to .98). Although the questionnaire consists of only three items that all address entity theory only, they were able to establish validity through several validation studies. Through these studies, they determined that disagreement with the entity theory indicated agreement with incremental theory. Additionally, they were able to determine that agreement with the entity theory statements did not represent an acquiescence set (Dweck et al., 1995).

The Teacher Sense of Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001) was the third and final measure used in this study. Tschannen-Moran and Hoy conducted a factor analysis to test this instrument, and consistently found three moderately correlated factors: Efficacy in Student Engagement, Efficacy in Instructional Practices, and Efficacy in Classroom Management. To determine the Efficacy in Student Engagement, Efficacy in Instructional Practices, and Efficacy in Classroom Management subscale scores, unweighted means of the items that load on each factor are computed. Generally these groupings are: Short Form Efficacy
in Student Engagement: Items 2, 4, 7, 11, Efficacy in Instructional Strategies: Items 5, 9, 10, 12, Efficacy in Classroom Management: Items 1, 3, 6, 8. The short form was used for this study because the reliability coefficients are sufficiently close to the long form reliability coefficients. Tschannen-Moran and Woolfolk Hoy (2001) found the following reliabilities for the short form that will be used in this study: TSES Mean =7.1(.98); α =.90; Efficacy in Student Engagement Mean =7.2(.82); α =.81; Efficacy in Instructional Strategies Mean=7.3(.82); α =.86; Efficacy in Classroom Management Mean=6.7(1.2 ); α =.86.

Research Design

The research design for this study was a quantitative, correlational study. The instrument created for this study was designed to validate Rumberger’s (2011) Framework for Understanding Dropout by asking participants to rate the extent to which they believe specific factors related to the individual student, their families and their communities affect student dropout. This study is designed to examine the relationship among three constructs: teacher beliefs about the causes of dropout, teachers’ implicit theories of intelligence, and teacher efficacy beliefs. The independent variable in this study is teacher beliefs about the causes of dropout. The dependent variables are teachers’ sense of efficacy and their implicit theories of intelligence.
Procedure

An instrument was created for this study to measure teacher beliefs about the factors that influence student dropout. The Teacher Sense of Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk Hoy, 2001) instrument was used to quantify teachers’ sense of efficacy. The three item Theories of Intelligence Scale (TIS; Dweck, 1995) was used to determine participants’ entity versus incremental theory in the domain of intelligence. The compiled instruments and demographic questions were converted into an online survey using Google forms. The demographic questions were used to remove any potential participants who do not meet the participation criteria.

A link to the electronic survey was shared through statewide weekly Twitter chats that focus on general education topics in 46 states (see Table 1). Statewide general education chats were identified by searching Twitter for statewide general education chats for all 50 states. This information was compiled to create a schedule of statewide general education Twitter chats. General education chats were selected rather than chats focused on specific topics (e.g. curriculum, classroom technology) or specific groups (e.g. social studies teachers) to obtain a broad sample. Only states that scheduled weekly chats were included. Three states (Alaska, New Mexico and Washington) were excluded because they do not have statewide weekly general education chats. States whose chats occur less than once per week were also excluded (Colorado, New York and North Carolina). States whose chats are not scheduled for a specific time, but rather occur continuously, were assigned a day and time of Wednesdays from 8-9 pm CST, based on common times that other state chats take place. Three states (California, Idaho, and
Texas) have two weekly chats scheduled, so the survey was posted in both. The survey was posted in 46 weekly general education chats in 44 states. Prior to starting data collection, a message was sent to the moderators of each of the chats. The message explained the purpose of the study, asked for their assistance in promoting participation and provided my contact information. A link to the survey was published using each state hashtag during the specified weekly chat for four consecutive weeks.

In addition to Twitter chats, the link was posted on the author’s personal Facebook page continuously for the four week data collection period. Respondents were asked to repost the survey link on their own Facebook pages.
CHAPTER 4

RESULTS

Research Question One

The first research question sought to identify the psychometric properties of the newly developed Factors that Influence Dropout to determine how survey questions matched up to Rumberger’s (2011) framework. An initial unforced principal components analysis (PCA) with promax rotation was conducted and no meaningful factor structure grouping of items was identified. A second PCA was conducted and one factor was forced for items in the Individual category (items 1-38 in Appendix A). Items in the Individual category correlated to individual student factors identified in Rumberger’s framework that could contribute to student dropout. To establish a scale for the Individual category, all items with a factor loading score of .5 or above were retained, resulting in a 12-item scale from the initial 38 items. A reliability analysis of the 12 retained items resulted in a Cronbach’s alpha of .83. A third PCA was conducted using items from the Institutional category (items 39-62 in Appendix A). Items from the Institutional category correlated to institutional factors identified in Rumberger’s framework that could contribute to student dropout. Similar to the procedure for the Individual category, all items with a factor loading of .5 or above were retained, resulting in a 14-item scale from the initial 24 items. A reliability analysis of the remaining 14 items in the Institutional category resulted in a
Cronbach’s alpha of .87. See Table 3 and Table 4 for finalized items on both the Institutional and Individual scales.

Table 3

*Factor Analysis One: Final Factor Structure for Individual Student Factors*

<table>
<thead>
<tr>
<th>Item</th>
<th>Wording</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 35:</td>
<td>A student whose friends perform well academically has an increased chance of graduating.</td>
<td>.645</td>
</tr>
<tr>
<td>Item 33:</td>
<td>The peers that a student spends time with affects their chances of graduating.</td>
<td>.621</td>
</tr>
<tr>
<td>Item 19:</td>
<td>Students who perceive themselves as capable of academic success have an increased likelihood of graduating.</td>
<td>.617</td>
</tr>
<tr>
<td>Item 34:</td>
<td>A student whose friends have dropped out has an increased chance of dropping out.</td>
<td>.598</td>
</tr>
<tr>
<td>Item 29:</td>
<td>Students who have trouble with the law have an increased likelihood of dropping out.</td>
<td>.583</td>
</tr>
<tr>
<td>Item 16:</td>
<td>Students who believe that education is important have an increased likelihood of graduating.</td>
<td>.569</td>
</tr>
<tr>
<td>Item 22:</td>
<td>Putting effort into school work increases the likelihood a student will graduate.</td>
<td>.564</td>
</tr>
<tr>
<td>Item 30:</td>
<td>Students who use drugs and alcohol have an increased chance of dropping out.</td>
<td>.554</td>
</tr>
<tr>
<td>Item 24:</td>
<td>Students who participate in extracurricular activities have an increased likelihood of graduating.</td>
<td>.552</td>
</tr>
<tr>
<td>Item 15:</td>
<td>Students who drop out don’t have clear goals for their future.</td>
<td>.525</td>
</tr>
<tr>
<td>Item 32:</td>
<td>Students who disrupt class frequently are more likely to drop out.</td>
<td>.521</td>
</tr>
<tr>
<td>Item 21:</td>
<td>Having a sense of belonging at school can help prevent students from dropping out.</td>
<td>.505</td>
</tr>
</tbody>
</table>
It was hypothesized that the factor structure for this survey would consist of two factors (Individual and Institutional) in an unforced principal components analysis. Results of the initial principal components analysis do not support this hypothesis.
It was hypothesized that the factors that teachers identify as influencing student dropout would match to the factors on Rumberger’s framework. Results of the principal components analysis partially support this hypothesis in that Institutional and Individual scales were established only after the second and third PCA’s were conducted with one forced factor.

To further investigate the psychometric properties of the three part instrument used in my study, additional descriptive analyses were conducted. For Factors that Influence Dropout, a mean subscale score was determined for each category, Individual and Institutional. For the Theories of Intelligence Scale (TIS), scores were averaged to determine an overall implicit theory score. A score of 4.0 or above indicated a stronger entity theory, and a score of 3.0 or below indicated a stronger incremental theory. The overall mean score for the TIS was (M=2.32, SD=1.26), indicating that overall, participants in this study endorsed an incremental theory of intelligence. A reliability analysis resulted in a Cronbach’s alpha of .95. For the Teachers’ Sense of Efficacy Scale (TSES), to determine the Efficacy in Student Engagement, Efficacy in Instructional Practices, and Efficacy in Classroom Management subscale scores, unweighted means of the items that load on each factor were computed. For the TSES, the subscale means were TSES Engagement (M=6.95, SD=1.23), TSES Instruction (M=7.93, SD=1.02), TSES Classroom Management (M=7.65, SD=1.06), indicating participants in this study held a relatively high sense of overall efficacy. A reliability analysis resulted in Cronbach’s alpha of .94. See Table 5 for descriptive statistics for all primary study variables.
Table 5

*Descriptive Statistics for Study Variables*

<table>
<thead>
<tr>
<th>Subscales</th>
<th>N</th>
<th>M (SD)</th>
<th>Range</th>
<th>Number of Items</th>
<th>Alpha Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engagement</td>
<td>276</td>
<td>6.95 (1.23)</td>
<td>2-9</td>
<td>4</td>
<td>.78</td>
</tr>
<tr>
<td>Instruction</td>
<td>276</td>
<td>7.93 (1.02)</td>
<td>4-9</td>
<td>4</td>
<td>.85</td>
</tr>
<tr>
<td>Classroom Management</td>
<td>276</td>
<td>7.65 (1.06)</td>
<td>3-9</td>
<td>4</td>
<td>.87</td>
</tr>
<tr>
<td>Individual Factors</td>
<td>276</td>
<td>4.96 (.57)</td>
<td>3-6</td>
<td>12</td>
<td>.83</td>
</tr>
<tr>
<td>Institutional Factors</td>
<td>276</td>
<td>4.33 (.69)</td>
<td>2-6</td>
<td>14</td>
<td>.87</td>
</tr>
<tr>
<td>TIS</td>
<td>276</td>
<td>2.32 (1.26)</td>
<td>1-6</td>
<td>3</td>
<td>.94</td>
</tr>
</tbody>
</table>

Research Question Two

The second research question sought to determine whether teachers in this sample would assign a greater level of importance to Individual factors as leading to student dropout rather than Institutional factors. It was hypothesized that teachers would assign a greater level of importance to Individual factors than Institutional factors; results support this hypothesis. More specifically, a paired sample t-test was conducted to compare participant scores for the individual scale and the institutional scale. There was a significant difference in the scores for the Individual scale (M=4.96, SD=.57) and the Institutional scale (M=4.33, SD=.69); t(275)=18.671, p<.001,
indicating participants assigned a higher level of importance to individual factors as they relate to student dropout.

Research Question Three

The third research question sought to explore relationships among teacher beliefs about factors that influence student dropout, their implicit theory of intelligence beliefs, and self-efficacy beliefs. A correlation analysis was used to examine these relationships. Results of the correlation analysis among the three primary study variables indicated significant correlations between all three subscales of the TSES, and significant correlations between all three subscales of the TSES and the overall TIS mean subscale score. There was a significant correlation between the Individual and Institutional subscale scores. Significant correlations did not exist between the Institutional subscale and any of the TSES subscales, nor the TIS subscale. There was a significant correlation between the Individual subscale and the TSES Instructional subscale and the TSES Classroom Management subscale, but not the TSES Engagement subscale. See Table 6 for correlations among all primary study variables.

It was hypothesized that individual factors would positively correlate with an entity theory of intelligence, and individual factors would negatively correlate with self-efficacy. Results from the correlational analysis do not support this hypothesis. There was not a significant correlation between the Individual subscale and TIS subscale and there was not a significant correlation between the Individual subscale and TSES Engagement subscale. A positive correlation existed between the Individual subscale and the TSES subscales of Instruction and
Engagement, respectively.

Table 6

*Intercorrelations Among all Primary Study Variables*

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
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<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
</tr>
</thead>
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<tr>
<td>1. Engagement</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Instruction</td>
<td>.664**</td>
<td>--</td>
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<td>3. Classroom Management</td>
<td>.779**</td>
<td>.715**</td>
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<td></td>
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<tr>
<td>4. Individual Factors</td>
<td>.013</td>
<td>.142*</td>
<td>.130*</td>
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<td></td>
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<tr>
<td>5. Institutional Factors</td>
<td>.011</td>
<td>.059</td>
<td>.029</td>
<td>.614**</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>6. Mindset</td>
<td>-.178**</td>
<td>-.186**</td>
<td>-.146*</td>
<td>.099</td>
<td>.115</td>
<td>--</td>
</tr>
</tbody>
</table>

Note. *p<.05; **p<.01., Engagement=Self-Efficacy for Engagement, Instruction=Self-Efficacy for Instruction, Classroom Management =Self-Efficacy for Classroom Management
CHAPTER 5
DISCUSSION

Much of the research on dropout prevention focuses on individual student factors such as socioeconomic status, family structure, and peers (Rumberger, 2011). While that information is helpful in understanding the complex interaction of factors over time that influence a student prior to dropping out, these factors are largely outside of the influence and control of teachers and schools. Given the importance of having a quality teacher in the classroom (Hattie, 2009), and given the role that teacher beliefs may have in shaping teacher practices in the classroom (Fives & Buehl, 2012; Kumar et al., 2015; Rattan et al., 2012; Woofolk-Hoy, Davis & Pape, 2006), this study sought to investigate the relationships among teacher beliefs about the factors that influence student dropout, their implicit theory of intelligence beliefs and their self-efficacy beliefs. High school dropout continues to impact thousands of students, schools and communities every year; investigating how the beliefs of teachers working with students at risk of dropping out affect their practices and student outcomes could lead to valuable information that can be used in designing effective dropout interventions.

In this chapter, I will discuss the study findings as they relate to the research questions and hypotheses that guided the study. I will then review strengths and limitations of the study, and conclude with suggested directions for future research and implications for practice.
Psychometric Properties and Factor Structure

In the initial principal components analysis, I predicted that a two factor structure would emerge, indicating that participants recognized the difference between individual and institutional factors, and that they would assign a different level of importance to individual and institutional factors as described in Rumberger’s Framework for Understanding Dropout. While the two factor structure was not evident from the initial analysis, this could be attributed to the way that the factors are organized on Rumberger’s (2011) framework. Family and Community factors are included in the Institutional component of the framework, along with schools. Grouping those factors with the factors on the Individual component of the scale would more closely resemble a framework composed of Individual and School components. For example, Lee and Burkham (2003) developed a framework similar to Rumberger’s in that it categorizes the factors that influence student dropout, but different in the way the factors are categorized and labeled. Lee and Burkham categorize Individual factors into social risk factors and academic risk factors. Social risk factors include socioeconomic status, family background and personal demographics such as gender and race. Academic risk factors include student behaviors and academic performance. School components are categorized into school social organization and academic organization. School social organization includes student teacher relationships as well as student relationships with each other. Academic organization includes types of courses that students are offered and take, as well as class size. While the factors described by Lee and Burkam are very similar to Rumberger’s, their organization of factors create an internal (within the school) and external (individual factors that are beyond schools influence) framework. Lee
and Burkam’s framework may more closely resemble the way teachers in this study interpret these factors, given that 8 of the 14 items on the final Institutional scale referred to students’ families and the communities they live in. For example, item 51 on the Institutional scale refers to a student’s poverty level; according to Rumberger’s (2011) framework, that factor is considered part of the institutional setting of family. In Lee and Burkham’s framework, this factor is considered an individual social risk factor. The organization and categorization of factors on Rumberger’s (2011) framework may be part of the reason that a two factor structure did not initially emerge.

When separate Individual and Institutional subscales were developed in the subsequent factor analyses, the data did more closely align with the research on teacher beliefs about dropout, in that teachers in this study attributed individual student factors as having a greater level of importance in influencing student dropout, as was found by Bridgeland et al. (2009), Lynn et al. (2010), and Knesting-Boody et al. (2013). While this does not indicate teachers in this study do not understand the importance of school factors (for example, a quality teacher in the classroom), it could indicate they underestimate the mitigating effects on student achievement that they as teachers can have over external factors such as peers, family and socioeconomic status (Hattie, 2009). For example, underestimating the effects of school controlled factors such as instructional practices and positive student-teacher interactions may cause teachers to underutilize these practices that support student achievement. It is important that teachers have a full understanding of the powerful effects of their behaviors in the school setting can have on student learning and achievement. Teachers in this study attributed more importance to individual factors than institutional factors as influencing student; despite their
high self-efficacy scores on the TSES, this could indicate they underestimate the amount of their influence.

Importance of Individual and Institutional Factors

The second research question in this study examined the differences in importance that teachers ascribed to individual and institutional factors. Teachers in this study ascribed more importance to individual factors than institutional factors. However, when looking at the items that comprised both of the scales, the majority of factors that loaded with .5 or better were factors outside of school, specifically peers, community and family. Only three of the twenty six items were those that could be influenced by teachers: student beliefs about the importance of education, student sense of belonging at school, and student perception of their ability to learn. This relates to Knesting-Boody and colleagues 2015 study which indicated a positive correlation between teacher self-efficacy and the extent to which teachers perceived the following factors influence dropout: not having a close relationship with teacher and not having a sense of belonging at school (both can be influenced by teachers). While there was not a significant correlation to the overall Institutional scale and any of the TSES subscales, teachers in this study identified these three factors that can be influenced by teachers as having an influence on student dropout, and the overall TSES subscale scores indicated that teacher in this study have high levels of self-efficacy.

Although three of the Institutional scale items related to factors that could be influenced by teachers, the remaining twenty three items on the Individual and Institutional scales related to
factors that are beyond teachers’ control such as peers, community, and family as well as poverty and minority status. This supports Bridgeland and colleague’s (2009) research, in which teachers were asked what factors influenced student dropout; the most frequently reason cited was not enough support at home. Seventy-eight percent of teachers indicated that students who spent time with peers disengaged from school was a factor in some, or most cases of dropout. Additionally, when asked which group bore all or most of the responsibility for students dropping out, 76% of teachers in the study felt that all or most of the responsibility for student dropout belonged to students, and 74% felt it belonged to parents as well. Further studies reached similar findings, such as the study by Lynn et al. (2010), in which teachers at a high school in one of the lowest performing districts in Maryland identified parents as the primary cause of students’ failure to achieve. In my study, the overwhelming majority (23 of 26) items on the combined Institutional and Individual scales identified factors such as peers, community, and family as well as poverty and minority status as influencing student dropout.

Given that almost all of the factors that influence dropout identified by teachers in my study related to factors outside of the school and beyond teachers’ control, it is possible that these beliefs are related to their self-efficacy beliefs in way which were not measured in my study. Knesting-Boody (2013) and colleagues found that one quarter of teachers in their study indicated that outside influences such as peers and family were too strong of an influence for teachers to overcome, indicating low self-efficacy in overcoming outside influences. That statistic represents only about 25 teachers, but when one considers the hundreds of students they work with every day, year after year, the implications of those self-defeating beliefs become far more significant. The results of this study are cause for concern, and although results from my
study indicated teachers had high levels of self-efficacy, the fact that the majority of factors they attributed as influencing student dropout were related to factors outside of their control could be interpreted as contradictory.

While Rumberger (2011) asserts that dropout is highly complex and can be understood only through the many factors that characterize individual students and the settings they live in, recent studies indicate a significant number of teachers believe external factors, such as families and peers, have a strong influence over student dropout, to the extent of being impossible to overcome through the efforts of teachers and schools (Bridgeland et al., 2009; Lynn et al., 2010; Knesting-Boody et al., 2015). Given the evidence that supports the connection between beliefs and practices, these findings indicating teachers do not feel they have enough power to overcome outside influences on student achievement and attainment are troubling. These beliefs could negatively influence teacher behaviors and practices when working with students at risk of dropping out.

Rumberger not only argues that dropout is complex, and that it is influenced by individual student factors and the institutional settings students live in, he further argues that different factors can affect students differently at different times. The results from my study and others indicate teachers believe individual factors that exist outside of the control of schools such as peers and families are more important than those that exist with the control of schools, such as teacher practices. This does not mean that Rumberger’s (2011) framework is not valid. It represents a holistic picture of the influences that can influence student academic attainment, and it is important not to oversimplify dropout as an isolated event, rather than an event that is a culmination of years of experiences both in and out of school. The results of this study did not
match up to Rumberger’s (2011) framework, possibly because something as complex as his framework cannot be measured through the survey created for this study. Factors that Influence Dropout. Developing effective dropout prevention strategies and interventions for students at risk

Teacher Beliefs About Dropout, Theory of Intelligence and Self-Efficacy

The third research question in my study sought to examine the relationship between teacher beliefs about factors that influence student dropout, their implicit theory of intelligence beliefs and their self-efficacy beliefs. Results indicated a significant relationship between teacher self-efficacy beliefs and their implicit theory beliefs. This relationship has not been investigated in other studies. While it is not surprising that the results of this study indicated that teachers who believe that intelligence can be improved through effort have strong beliefs in their own abilities to effectively instruct and engage students, as well as manage a classroom, these results could also indicate an overall belief that both students and teachers can have a strong influence on student learning and achievement, and that effort on both sides will yield positive results.

Implicit theory beliefs are an indication on whether or not an individual believes that intelligence can change through effort. Believing that something can be changed is an important precursor to believing that one has the capacity to change something, and to what extent. For example, a teacher holding an incremental theory of intelligence believes that intelligence is malleable and can be changed through effort. If that teacher has a low performing student in class, they may be more likely to feel more self-efficacious in helping that student improve their intelligence and achievement, and may display more perseverance in helping that student improve.
The results of my study did not indicate a relationship between teacher beliefs about the factors that influence student dropout and their implicit theory of intelligence beliefs, nor was there a relationship between teacher beliefs about the factors that influence student dropout and their self-efficacy beliefs. This could be due to the previously discussed organization of the institutional and individual factors on Rumberger’s (2011) framework, specifically factors that he categorized as institutional that may be considered individual by teachers because they are outside of the control of the school.

Findings from my study indicate the need for further investigation into the significance of the role of teacher beliefs and actions in the larger context of dropout prevention, perhaps through a different framework, separate components of a framework, or a combination of existing frameworks. This study focused on teacher beliefs about factors that influence dropout related to a very specific framework (Rumberger, 2011); as a whole, the Institutional and Individual subscales did not have significant relationships with their implicit theory of intelligence beliefs or their self-efficacy beliefs, but examining the relationships between each of the subcategories (i.e., peers, families) and implicit theories of intelligence and self-efficacy beliefs may have resulted in significant relationships.

Teachers in this study held a significantly stronger incremental theory of intelligence as opposed to entity theory beliefs, and held relatively high levels of self-efficacy. These results are encouraging because they indicate they are more likely to employ academically supportive behaviors toward students in the classroom, may be less likely to give up on students at risk of dropping out, and may be more likely to support school policies that benefit students with multiple risk factors for dropping out. It has been established in the research that teachers’
implicit theory of intelligence beliefs and their self-efficacy beliefs influence the way that individuals approach challenging situations, the way they behave when faced with a difficult task, to what they attribute success or failure, their persistence when faced with challenge and their resilience when setbacks occur (Dweck, 1995; Tschannen-Moran, Hoy & Hoy, 1998). Watanabe (2006) worked with a small inquiry group of six teachers to examine how their beliefs about intelligence informed their practices, and found that teachers who believed their students were incapable of learning skills they should have learned in an earlier grade did not attempt to teach the skills to students, but continued to lament their students lack of knowledge throughout the study. Research by Oakes, Wells, Jones, and Datnow (1997) indicated that teacher assumptions and beliefs about student ability and intelligence were correlated to resistance to policies and practices that provide greater opportunity to students with multiple risk factors for failure. In their three year, longitudinal case study of ten racially and socioeconomically diverse high schools, they found that teachers who believed intelligence is a fixed construct were less likely to support changes such as detracking (assigning students to mixed ability courses) and calendar revisions that would allow struggling students to have additional calendar days to complete coursework. While teaching students skills that they should have previously learned, or teaching students of varying ability and achievement levels in detracked classes are challenging and difficult tasks, it is important that teachers are willing to face these types of challenges with not only pedagogical skill, but a belief that they and their students can successfully overcome challenges to learning and achievement. Teachers have a significant effect on student learning and subsequent achievement, and are crucial to every student’s educational experience (Hattie, 2009), and therefore the ways they approach and respond to challenges in the classroom are
critical. While my study did not find clear relationships between the three aspects of teachers’ belief systems that were measured, further study into the relationship between teacher beliefs, teacher actions, and student outcomes, specifically in challenging situations such as teaching students who are at risk of dropping out, could possibly shed more light on the significance of teacher beliefs as they relate to student outcomes.

Overall, teachers in this study held a significantly stronger incremental theory of intelligence as opposed to entity theory, and held relatively high levels of self-efficacy, yet they indicated they felt individual student factors more strongly influenced student dropout than institutional factors, such as those related to teacher practices. Furthermore, teachers in this study attributed more significance to factors such as peers, the community and student beliefs and behaviors, despite having incremental intelligence beliefs and high self-efficacy beliefs. While the results of my study support the research of Bridgeland et al. (2009) and Knesting-Lund et al. (2013) in that teachers attributed more importance to individual student factors in influencing dropout, it does not support the research of Knesting-Lund et al. (2015), which found a positive correlation between teacher efficacy and institutional factors that were within the control of schools, such as strong student-teacher relationships and school climate. Given the incremental theory of intelligence beliefs and high self-efficacy beliefs of teachers in my study, it was predicted that teachers would assign a higher level of importance to institutional factors that are within the power of schools and teachers to change; results indicated they assigned more importance to individual factors which are outside of their control. The seemingly contradictory relationships among beliefs about factors that influence dropout and self-efficacy beliefs in my study relates to the results of Christle and colleagues (2007) study, in which teachers in schools
with high dropout rates perceived dropout as a problem in their school, and parent involvement as poor, yet perceived their school climate as good and themselves and the administration as having high expectations for all students. Bridgeland et al. (2009) found that in schools with less than an 80% graduation rate, 64% of teachers described their schools as doing a good or excellent job. Further research is needed on the effects of this incongruity among teacher perceptions about their students, their schools and themselves and student performance and achievement.

The results of my study provided some insight into the factors teachers believe influence student dropout, and contributed to the literature on this complex subject, although they did not fully validate Rumberger’s 2011 Framework for Understanding Dropout. Additionally, the study examined these beliefs as they relate to teacher efficacy and implicit theories of intelligence, which had not been previously studied. Finally, this study supports the need for further research on the relationship between teacher beliefs, practices and student outcomes.

Strengths

A strength of this study is that it sought to investigate the nature of teacher beliefs about dropout, as they relate to implicit theory of intelligence beliefs and self-efficacy beliefs. While there is much in the literature about the latter two well-established constructs, there is limited research on teacher beliefs about student dropout, teacher beliefs about student dropout as they relate to sense of efficacy, and virtually no studies that explored the relationship between the three. Results from this study indicated a significant relationship between teachers’ implicit
theory of intelligence beliefs and their self-efficacy beliefs. A survey was created for a complex theoretical concept, specifically for Rumberger’s Framework for Understanding Dropout; a survey to measure this conceptual framework did not previously exist. Another strength was that there were a fairly large number of participants, with variation in race/ethnicity, gender, number of years teaching, and representation from geographically diverse locations. The use of social media to contact participants and publicize the study can also be considered a strength as it adds to the literature on the use of modern technology to conduct survey research. Finally, this information was reported by those most likely to impact students in a school setting; their views are important to a study on student dropout.

Limitations

A limitation to the study was sampling bias. Participants self-selected to take part in the study, resulting in an overall sample population that is not representative of the teaching population. The teachers who self-selected to participate in the study accessed the survey through Twitter education chats. Teachers who participate in online education forums and discussions outside of regularly scheduled work hours may be more likely to spend time to take a survey than those who do not. Additionally, it is possible that teachers who participate in professional growth opportunities of their own accord outside of the work day may have a greater belief in the complexity of factors that influence student dropout, causing them to assign similar importance to individual and institutional factors, as well as to support an implicit theory of intelligence and have a higher sense of efficacy in the classroom. A further limitation is that the data was
collected through survey only. Interviews and classroom observation data could have provided additional insights and more specific explanations for teacher beliefs about student dropout.

Finally, a limitation to the data analysis is that the initial factor analysis did not result in a meaningful factor structure, possibly due to the structure of Rumberger’s (2011) Framework for Understanding Dropout, as well as the complexity of the framework.

**Directions for Future Research**

To develop effective dropout interventions, the role of teachers needs to be closely examined not only by those designing the interventions, but by teachers themselves. Teachers are asked to reflect on their instructional practices as part of their professional responsibilities; perhaps they should be asked to reflect on the beliefs that inform their practices as well. As the people who spend the most time with students, if teachers do not believe that they have the ability to effectively teach students at risk of dropping out, despite the outside influences beyond their control, interventions based on teacher practices and interactions with students may not be as effective as they could be. Future research should focus on how teacher reflection on their beliefs can be used to improve practices and improve student outcomes.

This study examined teacher beliefs about factors that influence dropout, their implicit theory of intelligence beliefs and their self-efficacy beliefs. Teacher beliefs about their ability to effect positive change with struggling students can influence student performance and achievement, as well as the overall school culture and climate. These beliefs not only can affect the instructional practices they use, but also the ways that they interact with students. Research
on effective schools indicates that school climate and social emotional learning are as important as academic learning when teaching students at risk. Specifically, developing a professional culture based on collective efficacy and the belief that all students can learn were identified as school characteristics that can positively influence student achievement in schools with high populations of students at risk of failure. A recent study by Rutlege, Cohen-Vogel, Osborne-Lampkin, and Roberts (2015) indicated that high schools with a large percentage of teachers who support a positive social emotional climate in addition to rigorous academic beliefs and supports can increase student achievement. In this study, they conducted a year-long, multilevel comparative case study on the characteristics of effective urban high schools. Using value-added methodology, they identified and compared two higher performing high schools in Broward County, Florida to two lower performing high schools. They found that although the overall student populations shared similar characteristics (high percentage of low socioeconomic status students, high percentage of minority students), the two schools that were performing at higher levels had strong and deliberate structures, programs, and practices that supported students’ academic and social learning needs. While they did not find significant differences between schools as far as instruction, they found major differences in staff beliefs about their abilities to influence student success, and the programs and practices in the schools that supported student achievement (Rutlege et al., 2015). Further research on the relationship between collective and individual teacher beliefs and how these beliefs inform their relationships with colleagues, parents and students in their buildings may provide important insight into how to strengthen these school characteristics.
Teachers may have a significant impact on dropout prevention strategies and interventions, as well as dropout recovery programs. Research indicates that teachers have a significant effect on student achievement (Hattie, 2009); however, it also indicates that teachers do not perceive themselves as having the power to prevent student dropout (Bridgeland et al., 2009; Knesting-Lund et al., 2013). Research by Iachini, Buettner, Anderson-Butcher, and Reno (2013) indicates that students who have dropped out and re-enrolled perceive teachers as having a significant influence on dropping out and coming back to school. Students who had dropped out of high school and then re-enrolled at an alternative recovery school identified the factors they perceived to influence their success at the recovery school as an individualized approach to learning with strong support from their teachers, school structure, which included a flexible schedule that allowed them to attend classes regularly and meet their obligations outside of school, and a positive school climate. Many of the factors that they identified as contributing to their success were in direct contrast to the factors they identified as influencing their decision to drop out of their former school (unsupportive teachers, a rigid schedule and a negative overall school climate).

Further research on the relationships among teacher beliefs, teacher actions, and student achievement could have a significant effect on student outcomes and dropout prevention. While parents hold a significant responsibility for their children’s success or failure in school, if they are not fulfilling that responsibility, we as educators have to work from a place of acceptance and belief in our own ability to overcome these obstacles. To support that work, continued research is needed on identifying and testing practices that are effective for students with multiple risk factors, especially students of color and those living in poverty, who are most likely to dropout.
Much of the research in this area has been conducted with teachers in a specific school, district or geographic area; future research should include more representative teacher samples, as well as student perspectives and achievement data. More work has to be done to translate theory about the importance of teacher beliefs into classroom based instructional practices that can be used by teachers on a large scale in a variety of instructional settings.

Conclusion and Implications for Practice

A quality teacher can be one of the most influential factors that affect student outcomes. Given the number of students that drop out of school, and given the fact that dropout rates are far higher for minority students living in poverty, ensuring that all students have an effective teacher in the classroom is a critical component of dropout prevention efforts. In his 2011 Framework for Understanding Dropout, Rumberger argues that student dropout is a complex process, influenced by individual student factors such as background, attitudes, and behaviors, as well as the institutional settings of family, school, and community in which students live. In this study, I suggested teacher beliefs about the factors that influence student dropout, their beliefs about students potential to learn despite past performance, and their efficacy beliefs about their ability to successfully teach challenging students and overcome external influences may inform the pedagogical practices they employ when teaching students who are having academic difficulty and are nearing the point of dropout. These practices, which include establishing positive relationships, implementing alternative strategies, holding high expectations, persevering in the
face of setbacks, and encouraging a growth mindset in students could have the potential to increase student achievement and keep students in school.

The responsibility of educating teachers on the research on the importance of teacher beliefs falls not only with teacher preparation programs, but with Principals and school leaders as well. The Illinois Performance Standards for School Leaders state that Principals are responsible for establishing collaborative relationships among teachers, students, parents and families, as well as developing and maintaining a positive school culture and climate. Principal preparation programs must ensure that aspiring educational leaders develop an understanding of the importance of teacher beliefs as they relate to teacher behaviors, and also when implementing changes in policy, practices and expectations of teacher performance and evaluation. It is important for educational leaders not only to assess teacher beliefs accurately, but to have honest discussions with teachers about how these beliefs inform their practice. Finally, it is important that research on the role of teacher beliefs, how they relate to outward practices and how teacher practices (both academic and social) relate to student outcomes be used to drive and inform professional development, teacher preparation programs, principal preparation programs, and legislation and funding policies to ensure that all students have access to high quality teachers from pre-k through graduation. Ensuring that every student graduates high school ready to pursue gainful employment or post-secondary education should be the highest priority of our educational system.
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APPENDIX A

SURVEY “FACTORS THAT INFLUENCE DROPOUT”
Appendix A. Survey “Factors that Influence Dropout”

Student Dropout
This survey is designed to measure educator beliefs about the factors that influence student dropout, teacher beliefs about the malleability of intelligence, and teacher self-efficacy beliefs. This survey is an anonymous, and no personally identifying information will be collected. Please answer all of the questions in the survey. Thank you for your participation.

Demographic Information and Consent to Participate in the Study
The following questions will establish consent to use the data from this survey in the study, as well as obtain non identifying demographic information about respondents.

I agree to participate in this study.*Required
  ● Yes
  ● No

Do you currently work as a high school teacher?*Required
  ● Yes
  ● No

What state do you currently work in?

How long have you worked as a high school teacher?*Required
  ● 0-5 years
  ● 6-10 years
  ● 11-15 years
  ● 16 years or more

What subject area do you spend most of your time teaching?*Required
  ● English/Language Arts
  ● Math
  ● Science
  ● Social Studies
  ● Other

Approximately what percentage of students in your school qualify for Free and Reduced Lunch?
If you don't know, please leave blank
What is your gender?*Required
- Male
- Female
What is your race/ethnicity?*Required
- Hispanic
- African American
- Asian
- Caucasian/non-Hispanic
- Other
- I prefer not to answer

The following section contains statements about individual student characteristics as they relate to student dropout. Please answer based on the degree to which you agree or disagree with each statement.

1= strongly disagree  2=disagree  3=somewhat disagree  4=somewhat agree  5=agree  6=strongly agree

1. Male students are more likely than female students to drop out of school.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

2. Minority students are more likely to drop out than white students.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

3. Speaking a first language other than English increases a student’s chance of dropping out.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

4. Students in good health are more likely to do well in school.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree
5. Health problems negatively affect students’ academic performance.*Required  
   Strongly Disagree 1 2 3 4 5 6  Strongly Agree

6. Practicing healthy lifestyle habits such as eating a balanced diet and getting enough sleep positively affects academic performance.*Required  
   Strongly Disagree 1 2 3 4 5 6  Strongly Agree

7. A student who has performed well academically in the previous grade will continue to do so in their current grade.*Required  
   Strongly Disagree 1 2 3 4 5 6  Strongly Agree

8. Students’ grades typically fluctuate from year to year. *Required  
   Strongly Disagree 1 2 3 4 5 6  Strongly Agree

9. Students who have been retained in at least one grade have an increased likelihood of dropping out.*Required  
   Strongly Disagree 1 2 3 4 5 6  Strongly Agree

10. Participation in preschool increases the likelihood that a student will graduate from high school.*Required  
    Strongly Disagree 1 2 3 4 5 6  Strongly Agree

11. Attending summer school reduces the likelihood that a student will drop out. *Required  
    Strongly Disagree 1 2 3 4 5 6  Strongly Agree

12. Participation in after school activities helps to keep students from dropping out.*Required  
    Strongly Disagree 1 2 3 4 5 6  Strongly Agree
13. Setting clear goals for the future increases the likelihood that a student will complete high school. *Required
   
   | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | Strongly Agree |

14. Goals motivate students to achieve academically.*Required
   
   | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | Strongly Agree |

15. Students who drop out don’t have clear goals for their future. *Required
   
   | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | Strongly Agree |

16. Students who believe that education is important have an increased likelihood of graduating. *Required
   
   | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | Strongly Agree |

17. Students who drop out do not value education.*Required
   
   | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | Strongly Agree |

18. Students who consider dropping out do not value education.*Required
   
   | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | Strongly Agree |

19. Students who perceive themselves as capable of academic success have an increased likelihood of graduating.*Required
   
   | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | Strongly Agree |

20. Having a sense of autonomy over their school work positively affects student achievement.*Required
   
   | Strongly Disagree | 1 | 2 | 3 | 4 | 5 | 6 | Strongly Agree |
21. Having a sense of belonging at school can help prevent students from dropping out.*Required

   Strongly Disagree 1 2 3 4 5 6 Strongly Agree

22. Putting effort into school work increases the likelihood a student will graduate. *Required

   Strongly Disagree 1 2 3 4 5 6 Strongly Agree

23. Students who are bored with their school work have an increased likelihood of dropping out.*Required

   Strongly Disagree 1 2 3 4 5 6 Strongly Agree

24. Students who participate in extracurricular activities have an increased likelihood of graduating.*Required

   Strongly Disagree 1 2 3 4 5 6 Strongly Agree

25. Attending school regularly increases the likelihood a student will graduate.*Required

   Strongly Disagree 1 2 3 4 5 6 Strongly Agree

26. Giving students challenging coursework will increase student achievement. *Required

   Strongly Disagree 1 2 3 4 5 6 Strongly Agree

27. Students who do not complete assignments have an increased likelihood of dropping out. *Required

   Strongly Disagree 1 2 3 4 5 6 Strongly Agree

28. Students enrolled in remedial courses have an increased likelihood of dropping out.*Required

   Strongly Disagree 1 2 3 4 5 6 Strongly Agree
29. Students who have trouble with the law have an increased likelihood of dropping out.
   *Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

30. Students who use drugs and alcohol have an increased chance of dropping out.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

31. Students with children of their own have an increased chance of dropping out. *Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

32. Students who disrupt class frequently are more likely to drop out.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

33. The peers that a student spends time with affects their chances of graduating.
   *Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

34. A student whose friends have dropped out has an increased chance of dropping out.
   *Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

35. A student whose friends perform well academically has an increased chance of graduating.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

36. Having a job outside of school positively affects student achievement. *Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree
37. Working outside of school increases the likelihood that a student will drop out. *Required

   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

38. Students who work to help support their families have an increased likelihood of dropping out.*Required

   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

The following section contains statements about the institutional settings in which students live: family, school and community characteristics as they relate to student dropout. Please answer based on the degree to which you agree or disagree with each statement.

1= strongly disagree   2=disagree   3=somewhat disagree   4=somewhat agree   5=agree   6=strongly agree.

39. Attending schools in which a high number of students live in poverty increases the likelihood that a student will drop out.*Required

   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

40. Students who attend schools in which a high number of students are racial minorities have an increased likelihood of dropping out.*Required

   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

41. Students who attend single gender schools (all male or all female) are less likely to drop out than students who attend coed schools.*Required

   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

42. Schools with a large percentage of high quality teachers are likely to have lower dropout rates.*Required

   Strongly Disagree  1  2  3  4  5  6  Strongly Agree
43. Schools with poor facilities and few resources such as textbooks and computers are more likely to have higher dropout rates than schools with high quality facilities and abundant resources.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

44. Schools with large class sizes due to a high student teacher ratio are likely to have a higher dropout rate than schools with a low student teacher ratio and small class sizes.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

45. It is important for teachers to try different instructional methods when working with students at risk of dropping out. *Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

46. Teachers who display persistence in teaching struggling students decrease the likelihood that students will drop out. *Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

47. It is important for teachers working with struggling students to give meaningful feedback on assignments and opportunities for students to redo assignments.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

48. Students living in a two parent household have an increased likelihood of graduating.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

49. Students living in an institutional setting (e.g. a group home) have an increased likelihood of dropping out.*Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree
50. Students who live with adults other than their parents have an increased likelihood of dropping out. *Required

Strongly Disagree  1   2   3   4   5   6   Strongly Agree

51. Coming from a poor family increases the likelihood that a student will drop out.*Required

Strongly Disagree  1   2   3   4   5   6   Strongly Agree

52. A student whose family has access to the internet has an increased likelihood of graduating. *Required

Strongly Disagree  1   2   3   4   5   6   Strongly Agree

53. A student whose family reads regularly has an increased chance of graduating.*Required

Strongly Disagree  1   2   3   4   5   6   Strongly Agree

54. Parents are responsible for their children’s educational outcomes through high school graduation.*Required

Strongly Disagree  1   2   3   4   5   6   Strongly Agree

55. By the time a student reaches high school, their parents should not have to be involved in their education.*Required

Strongly Disagree  1   2   3   4   5   6   Strongly Agree

56. Parental involvement is essential for students to do well in school.*Required

Strongly Disagree  1   2   3   4   5   6   Strongly Agree

57. Students who live in areas with high crime rates have an increased likelihood of dropping out. *Required

Strongly Disagree  1   2   3   4   5   6   Strongly Agree
58. Students who live in communities with high levels of gang activity have an increased likelihood of dropping out. *Required
   Strongly Disagree  1   2   3   4   5   6   Strongly Agree

59. Students who live in communities with few high school graduates have an increased likelihood of dropping out. *Required
   Strongly Disagree  1   2   3   4   5   6   Strongly Agree

60. Students who live in communities in which most members live in poverty have an increased likelihood of dropping out. *Required
   Strongly Disagree  1   2   3   4   5   6   Strongly Agree

61. Students who have access to a quality public library have an increased likelihood of graduating. *Required
   Strongly Disagree  1   2   3   4   5   6   Strongly Agree

62. Students who live in communities with abundant job opportunities have an increased likelihood of graduating. *Required
   Strongly Disagree  1   2   3   4   5   6   Strongly Agree

**Implicit Theory of Intelligence**

Please indicate the degree to which you agree or disagree with the following statements.

63. You have a certain amount of intelligence and you really can't do much to change it. *Required
   Strongly Disagree  1   2   3   4   5   6   Strongly Agree

64. Your intelligence is something about you that you can’t change very much. *Required
   Strongly Disagree  1   2   3   4   5   6   Strongly Agree
65. You can learn new things but you can’t really change your basic intelligence. *Required
   Strongly Disagree  1  2  3  4  5  6  Strongly Agree

**Teacher Sense of Self-Efficacy Scale**

This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below.

66. How much can you do to control disruptive behavior in the classroom? *Required
   Nothing  1  2  3  4  5  6  7  8  9  A great deal

67. How much can you do to motivate students who show low interest in school work? *Required
   Nothing  1  2  3  4  5  6  7  8  9  A great deal

68. How much can you do to get students to believe they can do well in school? *Required
   Nothing  1  2  3  4  5  6  7  8  9  A great deal

69. How much can you do to help your students value learning? *Required
   Nothing  1  2  3  4  5  6  7  8  9  A great deal

70. To what extent can you craft good questions for your students? *Required
   Nothing  1  2  3  4  5  6  7  8  9  A great deal

71. How much can you do to get children to follow classroom rules? *Required
   Nothing  1  2  3  4  5  6  7  8  9  A great deal
72. How much can you do to calm a student who is disruptive or noisy?  
*Required
Nothing 1 2 3 4 5 6 7 8 9 A great deal

73. How well can you establish a classroom management system with each group of students?*Required
Nothing 1 2 3 4 5 6 7 8 9 A great deal

74. How much can you use a variety of assessment strategies?*Required
Nothing 1 2 3 4 5 6 7 8 9 A great deal

75. To what extent can you provide an alternative explanation or example when students are confused?*Required
Nothing 1 2 3 4 5 6 7 8 9 A great deal

76. How much can you assist families in helping their children do well in school?  
*Required
Nothing 1 2 3 4 5 6 7 8 9 A great deal

77. How well can you implement alternative strategies in your classroom?*Required
Nothing 1 2 3 4 5 6 7 8 9 A great deal
APPENDIX B

ITEM WORDING OF TSES SHORT FORM QUESTIONNAIRE BY SUBSCALE
Appendix B. Item wording of TSES short form questionnaire by sub-scale

Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position.

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Question Number</th>
<th>Wording</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacy of Student Engagement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>How much can you do to motivate students who show low interest in school work?</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>How much can you do to get students to believe they can do well in school work?</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>How much can you do to help your students value learning?</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>How much can you assist families in helping their children do well in school?</td>
</tr>
<tr>
<td>Efficacy of Instructional Strategies</td>
<td>5</td>
<td>To what extent can you craft good questions for your students?</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>How much can you use a variety of assessment strategies?</td>
</tr>
<tr>
<td>10</td>
<td>To what extent can you provide an alternative explanation or example when students are confused?</td>
<td></td>
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<td>----</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>How well can you implement alternative strategies in your classroom?</td>
<td></td>
</tr>
<tr>
<td>Efficacy in Classroom Management</td>
<td>1</td>
<td>How much can you do to control disruptive behavior in the classroom?</td>
</tr>
<tr>
<td>Efficacy in Classroom Management</td>
<td>6</td>
<td>How much can you do to get children to follow classroom rules?</td>
</tr>
<tr>
<td>Efficacy in Classroom Management</td>
<td>3</td>
<td>How much can you do to calm a student who is disruptive or noisy?</td>
</tr>
<tr>
<td>Efficacy in Classroom Management</td>
<td>8</td>
<td>How well can you establish a classroom management system with each group of students?</td>
</tr>
</tbody>
</table>
APPENDIX C
TIS ITEM WORDING
Appendix C. TIS Item wording

1. You have a certain amount of intelligence and you can’t really do much to change it.

2. Your intelligence is something about you that you can’t change very much.

3. You can learn new things, but you can’t really change your basic intelligence.