

2017

# The Relationship Between MAP Assessment and PASS Results for Eighth Grade

Torri Darrell Barber Barber  
*Walden University*

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# Walden University

College of Education

This is to certify that the doctoral study by

Torri Barber

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Walden University  
2017

Abstract

The Relationship Between MAP Assessment and PASS Results for Eighth Grade  
Students

by

Torri Darrell Barber

MA, University of Phoenix, 2010

BS, Charleston Southern University, 2005

Project Study Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Education

Walden University

December 2017

## Abstract

In a South Carolina middle school, students were performing poorly on the state assessment in reading. Eighth grade students were not passing the Palmetto Assessment of State Standard (PASS) assessment administered each spring. The purpose of this study was to examine whether student performance on the Measure of Academic Progress (MAP) reading test in the fall predicted PASS scores in the spring. The theoretical framework was based on the item response theory (IRT)—the relationship between individual performance on a test item and the test takers' levels of operating along an overall measure of the ability that item was designed to measure. The research question was used to examine how well student performance on the MAP predicts student performance on the PASS. MAP and PASS test scores were collected from 2012, 2013, and 2014 academic years from a total student sample of  $N = 741$  from three out of the five middle schools in the North Central School District. The dependent variable was student PASS score and the independent variable was the MAP score. The PASS scores were correlated with the MAP scores to look for the strength and nature of the relationship, and a bivariate linear regression was conducted. The findings showed that student performance on the MAP reading test in the fall predicted PASS scores in the spring so that administrators might use these data to target student interventions. Professional development training was developed for teachers to apply best practices in the classroom to address areas of need as indicated by the MAP results. The implementation process would align with the district literacy initiatives. Implications for positive social change include providing information and support to teachers at the study school to better support student reading achievement.

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## Dedication

I would like first to give thanks to my Lord and Savior. The mindset, strong will, and determination breaded in my soul is what allow me to press on when times were tough. To my parents; my father sacrificed so much for me financially; I want to thank you. To my mother, thank you for encouraging words and love; you saw me get up in the early hours to pray and start my day sometimes at 3:30 in the morning. My internal motivation, my wife Markeita, my daughters Ava and Kenzley are the reasons why I work so hard! God has truly intervened into my life and you all are the reason why I stay rooted and allow God to Use Me for His Glory! You all motivate me to climb any mountain and face any obstacle so you can have the best life I can provide! To my friends and family, thank you for believing in me. The support and love is greatly appreciated. God bless you all and believe in the Motto, "Be Great but Be Even Greater Tomorrow!"

## Acknowledgments

To Ms. Nancy Canavera, I want to thank you so much! When I arrived at Charleston Southern, I was a confused and irrational young adult who could barely read and write and struggled with literacy components. I just want to thank you Ms. Canavera for working with me and helping me improve my literacy skills so I would be able to excel academically at the collegiate level. I was so far behind and scared to inform anyone of my literacy dysfunctions, but Ms. Canavera, you saw that I needed help and I thank you for helping me. I would like to thank Dr. Holmes, Dr. Martin, and Mrs. Nettles for helping me with revisions. In addition, I would like to thank everyone for helping me piece everything together. I am indebted to you all.

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## Section 1: The Problem

### **The Local Problem**

The concern in North Central School District is the Measurement of Academic Progress (MAP) reading assessment in the fall or spring where student achievement levels are not exceeding the district and state average. The MAP reading assessment is intended to prepare students to score above the state average on the Palmetto Assessment of State Standard (PASS). However, it is not evident whether the MAP predicts PASS performance for eighth grade students at the study site. The National Center for Education Statistics (2013) national average in reading for eighth graders is 268. South Carolina eighth graders average 261 (National Center for Education Statistics, 2013). The ability to read and comprehend is vital to students' success in school, as well as to their achievements beyond school life. Reading, which is the gateway to all other academic achievements, is the most important skill learned by children (Jordan, Snow, & Porsche, 2000). Despite reading being a critical skill, many students in the United States are failing to meet the national reading level (National Center for Education Statistics, 2013). The evidence from testing is an important measure to guide educators in understanding performance (Burgess & Greaves, 2013).

Districts, schools, educators, and students are held responsible for student performance on MAP and PASS test, graduation rates, and college entrance. Cassidy and Ortlieb (2013) stated that there has become an shift in education where identified students are not meeting the baseline scores for their perspective school district and state in terms of literacy development on tests. Educators see that reading is the essential skill students

need to ensure that they meet the district MAP percentile and either meet or exceed the PASS test. In a North Central School District in South Carolina, students are not meeting the standard score of 268 on the state assessment in reading (National Center for Education Statistics, 2013). According to the National Center for Education Statistics (2013), by the eighth grade, a significant number of students are not meeting the national average when it comes to reading on state's standardized test.

According to Leu et al. (2015), there was a significant difference of two-thirds of a standard deviation in scaled reading scores between eighth-grade students in the United States and South Carolina. Reading test results from the PASS showed low performance among American adolescent students. The north central region of South Carolina school district educates 108,000 pupils. The ethnicity breakdown of pupils is: 68% are of Caucasian descent, 27% are African of American descent, 2.5% are of Hispanic/Native American descent, and 2.5 are Asian or another ethnicity.

### **Problem Statement**

In a South Carolina middle school, students are performing poorly on the state assessment in reading. By the eighth grade, many students are failing to pass the state's standardized test. In North Central School District, teachers administer the MAP reading assessment in the fall and spring. The scores are not leading to significant improvement for students on the South Carolina state assessment that is administered to students at the end of each school year.

According to Northwest Evaluation (2013), the MAP questions are created on a Rasch Unit (RIT) to measure students' growth. The student performance on the PASS,

taken in the spring, is not meeting the state average in reading. The National Center for Education Statistics (2013) data shows that in 2013 only 27% of eighth graders were proficient in reading and only four percent were advanced. Sixty-five percent of the students test at below basic or basic when it comes to reading in South Carolina (National Center for Education Statistics, 2013).

The development of reading and writing skills plays a prominent role in helping children achieve academic success in all subjects (Drew, 2012). According to Draper et al. (2015), the MAP is a formative assessment or can be considered a benchmark used to help students prepare for high stakes testing. With MAP data, students who are struggling readers are identified and alternative measures are put in place to help prepare them for the (PASS). The MAP assessment is designed to help teachers meet the students' instructional needs. Each MAP assessment engages the students by using technology to help improve literacy levels using interactive assessment. The data from MAP assessment are available after the following day after the students complete the assessment. The PASS assessments are reported during the summer to help administrators prepare for the upcoming year. Each data set helps teachers plan for the upcoming semester and beginning of each the next school year. The North Central School District report shows there is a need for reading resources for middle school students, especially eighth graders. In the North Central School District middle schools, there was no full-time reading specialist in the schools to strengthen the literacy gap.

Schwabe, McElvany, & Trendtel (2015) stated that effective teachers use differentiated strategies in the classroom to improve reading deficits amongst students.

Teachers have to differentiate their instruction by offering strategies to help build on students intrinsic reading motivation will increase the literacy performance amongst students. Researchers have shown that students who do not possess the internal drive and interest for reading have scores that translate to below average on state and national assessments (Schwabe et al. 2015).

### **Rationale**

I examined whether student performance on the MAP reading test in the fall, predicts PASS scores in the spring. Administrators will use the findings to inform teachers to utilize the information during enrichment and in English classes through effective common planning and for creating common and effective formative and summative assessments based on the academic need. With the reading support, the teachers will extend the classroom instruction and provide a research-based reading program that will meet the needs of identified students.

### **Evidence of the Problem at the Local Level**

The National Assessment of Educational Progress (NAEP) shows reading scores for third through eighth grade students in South Carolina are lower than students in other states (National Center for Education Statistics, 2013). According to the National Center for Education Statistics (2013), the average eighth-grade students in the North Central School District scored 261 in reading compared to the national average of 266. South Carolina average score of 261 is lower than 35 other states in the United States. African American eighth grade students are behind Caucasian and Hispanic students in reading in the South Carolina public school system. In 2013 African American students scored 247

with 14% at or above proficient in reading. Caucasian students scored 271 with 39% at or above proficient. Hispanic American students scored 257 with 24% at or above proficient. Eighth-grade students in South Carolina who were eligible for free and reduced lunch scored 250 in reading; these results are better than African American eighth grade students in South Carolina. Based on the information on the national report card, reading is a concern for educators in South Carolina public school system.

### **Definition of Terms**

*Item Response Theory (IRT)*: latent trait theory or strong true score theory is used for scoring student formative or high stakes assessments, and similar instruments measure student abilities and or aptitude. IRT is a theory of testing based on the relationship between individuals' performances on a test item and the test takers' levels of performance on an overall measure of the ability that item was designed to forecast future performance. The IRT learning environment can be implemented in a computer lab or classroom environments that take place synchronously or asynchronously (Hambleton & Swaminathan, 2013).

*Measure of Academic Progress (MAP)*: a personalized internet based assessment that adapts to each student's learning level. MAP measures student progress and growth for each student based on a specific period. After completion of the assessment, educators will have essential learning data about what each student knows and is ready to learn within 24 hours (Cordray, Pion, Brandt, & Molefe, 2013).

*Palmetto Assessment of State Standards (PASS)*: PASS test items measure student performance on the South Carolina Academic Standards. The PASS test items are aligned

to the standards for each subject and grade level. During the time of this study, PASS was given to students in grades 3-8. The PASS test measured student performance in ELA, Math, Science, and Social Studies. Each school received a score level defining students' academic ability: Not Met, Met, or Exemplary on state standards (National Center for Education Statistics, 2013).

*Teacher Efficacy:* Ashston (1984) created a teacher paradigm that focused on effective teacher instructions. Teacher-Efficacy beliefs refer to well-rounded experience and through effective feedback. Minimal consequences define the personal goals of teacher efficacy, but high personal goals, higher learning goals, and student resilience. The outcome results of teacher efficacy are the result of student achievement, improved student self-efficacy, teacher commitment, teacher innovation, and teachers taking risks to improve the academic environment (Ashston, 1984).

### **Significance of the Study**

In this study, I examined the relationship between North Central School District eighth-grade students' performance on the PASS test and student scores on the MAP assessment in the fall and/or spring. The findings showed that student performance on the MAP reading test in the fall predicted student PASS scores in the spring. Administrators might use these data to target student interventions. Intervention and instructional strategies can be utilized to help improve on students' literacy skills. In the community, teachers and educators can create literacy workshops for students to attend after school and throughout the summer. All stakeholders can use this information to help strengthen the chances that students will perform well on MAP and yearly state



standardized tests. Offering an opportunity for literacy improvements will help improve the reading performance of teenage students to score above or equivalent to the national average on standardized tests, and this will translate into them being college ready and better able to serve their communities as they join the working world.

### **Research Question and Hypotheses**

The following question guided this study:

RQ1: How well does student performance on the MAP predict student performance on the PASS?

H<sub>0</sub>1: There is no significant predictive relationship between student MAP scores and student PASS scores.

H<sub>a</sub>1: There is a significant predictive relationship between student MAP scores and student PASS scores.

### **Theoretical Framework**

I used the items response theory (IRT) to investigate an educational setting. IRT is a pedagogical approach also known as the latent theory and strong test theory (Hambleton & Swaminathan, 2013; Lord, 1980; Makransky et al., 2016). IRT is a theory of testing based on the relationship between individual performances along a test item and the test takers' levels of functioning along an overall measure of the ability that item was designed to assess (Hambleton & Swaminathan, 2013; Lord, 1980; Makransky et al., 2016). The MAP and PASS test scores are used to measure students' abilities (Hulin, Drasgow, & Parsons, 1983).

The purpose of IRT is to provide a framework for evaluating how well assessments work and how well individual items on assessments work to reveal students' abilities (Hambleton & Swaminathan, 2013; Lord, 1980; Makransky et al., 2016).

IRT is a framework used by researchers to determine how accurate certain test scores are and how to develop test items effectively (Hambleton & Swaminathan, 2013; Lord, 1980; Makransky et al., 2016). The IRT framework can be utilized by test developers and evaluators to help with improving scoring accuracy in the future. The most notable examples of tests that were developed using the IRT were the Scholastic Aptitude Test (SAT) and Graduate Record Examination (GRE). The instructional strategies teachers use will help with improving measuring accuracy and reliability. For the current study, I used the IRT as a framework for analyzing whether tests such as MAP and PASS scores are similarly effective in evaluating student achievement in reading and literacy skills. Using IRT as the basis of analysis can also help in improving MAP and PASS assessments and subsequently, enhancing student performance.

IRT is used to analyze all of the processes in relation to a test, including designing, scoring, and analysis (Hambleton & Swaminathan, 2013; Lord, 1980; Makransky et al., 2016). A major preposition of the IRT is the significant relationship between individuals' performances on a test and their levels of performance on an overall measure of the ability that the item was developed originally to measure (Hambleton & Swaminathan, 2013). It is focused on the theory on the item. Therefore, the theory can serve as a strategic approach to set goals define ways to achieve specific objectives with the use of formative and summative assessments and technology used in schools

(Makransky et al., 2016). According to Hambleton & Swaminathan, 2013; Lord, 1980; Makransky et al. (2016) school leaders and teachers applying IRT in designing and analyzing tests this theory is continuous improvement for students, teachers, and entire school.

Costly (2012) encouraged educators to revamp instructional strategies that challenge and motivate middle school eighth-grade students who struggle academically. Modelling the MAP test using an IRT model can help educators address reading deficiencies better and help prepare students for standardized testing through environmental repetition.

When teachers identify the student's reading deficiency, it is likely that utilizing the strategies and common ideas to meet the student's literacy needs by using the technology in schools that relates to IRT. Incorporating the IRT in the MAP test can help teachers address students' limitations with reading by utilizing computers, the Internet, and modern-day technology devices in the classroom (Costly, 2012). Costly (2012) identifies data from the MAP test developed through IRT can be expected to serve as a better benchmark to help prepare students who will take the PASS test in the spring.

### **Review of the Literature**

In a South Carolina middle school, students are performing poorly on the state assessment in reading. By the eighth grade, many students are failing to pass the state's standardized test. I examined whether student performance on the MAP reading test in the fall predicts PASS scores in the spring. This section is a review of literature, including a discussion of the theoretical foundation for this study.

### **Review of the Broader Problem**

The unclear status of if student performance on the MAP can predict student performance on the PASS is unknown until the study and data is dissected. Until the information is present teachers will carry out strategies and interventions based on current MAP scores to improve students' performance on the PASS. Students in a South Carolina are performing poorly on the state assessment in reading. By the eighth grade, many students are failing to pass the state's standardized test. A better alignment between MAP and PASS scores can help the school, the teachers, and the students be better prepared to perform well in the state assessment in reading.

### **Reading Concerns of Middle Schools in America**

Educators face daily reading concerns of middle school American students that have forced educators to differentiate and use strategies to help improve student's literacy skills up to grade level (Cirino et al., 2013; Eggen & Stobart, 2015; Shu, Henson, & Luecht, 2013). Several factors jeopardize academic development in adolescent students such discipline, truancy, drugs, sex, and gangs to identify (Anderson, Howard, & Graham, 2007). Anderson et al. (2007) stated that middle school students have the highest disciplinary and suspension rates in schools show the lowest literacy performance on district benchmarks and state testing. The lack of attention to students who are being so called educated in impoverished middle schools and being raised in unstable homes presents barriers to the student's academic achievement (Tatum, 2009).

The information the Children's Aid Society (2006) states there is a disengagement of middle school students from their education is linked to high rates of teen pregnancy,

juvenile incarceration, and school dropout. The risk factors and negative trends for teenagers in American are a result of poor academics that lead from literacy underachievement in school (Tatum, 2009).

Adolescent years include various transitional changes. The middle school years present multiple changes to adolescent students academically and socially. Not only do they have to deal with academic pressure, they also deal with intense peer pressure to conform, even about things they do not agree are right (McKenna et al., 2012; Romero et al., 2014). Exposure to violence in their neighborhood and family economic challenges can also make the period of transition difficult (Xie, Dawes, Wurster, & Shi, 2013).

According to Xie et al. (2013), middle school American, Caucasian, and Hispanic students tend to become aggressive and disrespectful while transitioning through middle school. Popularity status is much more important than academic performance. Xie et al. also found that the majority of middle school boys fall two grades behind in middle school because they prioritize sports and social popularity. During this period, students experience higher support for aggressive and deviant behaviors and less peer support for positive academic behaviors. In the theory from Bandura and Walters (1963) social cognitive theory suggest that youth's perceived peer norms and culture can affect how they act and behave. For middle school American adolescent students to have a chance at academic success, they have to be surrounded by positive and motivating peers and adults (Xie et al., 2013).

What's Hot, What's Not survey data analysis was created to find out what learners enjoyed to read and over a 15 year period but the data confirmed adolescent

literacy development has declined from 1997-2012 (Cassidy & Ortlieb, 2013). The data from the What's Hot, What's Not survey confirms there has been a change in legislation, policy, and literacy curriculum that has effected certain attention adolescents are giving to information text (Cassidy & Ortlieb, 2013). Middle school students are identified to have the largest literacy gaps in achievement levels of students in the public school system (Cassidy & Ortlieb, 2013). On average, all middle school students' grades, test scores, and academic outcomes are lower than their Caucasian American counterparts (Matthews, Kizzie, Rowley, & Cortina, 2010).

Brozo et al. (2014) identified literacy related errors committed by middle school American students. The literacy challenges students struggled with were reading comprehension, verbal communication, and critical thinking in regard to text (Brozo et al. 2014). Literacy deficiencies for middle school American teenagers begin in elementary school (Cobbett & Younger, 2012).

According to Craig (2014), literacy is defined as the cornerstone of academic success in the 21st century. Williams et al. (2014) recognized that, when middle school American adolescent students are literate, their chances of academic success increase and criminal records decrease.

### **Factors Affecting Reading Abilities of Middle School America**

Researchers have presented various factors behind literacy deficiencies, which are the same factors that can predict the reading performance of American students (Morales-Chicas & Graham, 2016; Rathunde & Csikszentmihalyi, 2014). For example, Dyce (2013)

linked low performance to certain schools, poverty, and disenfranchisements that have negatively affected student achievement.

**Family background.** Limited family support and family structure (single-family, two-parent family, divorced families and many more) may hinder adolescent teens from reaching the pinnacle point of academic success because limited life experiences and parental guidance (Allen, 2013). The structure of the family, social environments, and social influences play a significant role in achievement levels (Allen, 2013). Often, African American adolescent students have lower reading achievement compared to their Caucasian counterparts because of their family background where academic is a top priority (Ford & Moore, 2013; Hooper, Roberts, Sideris, Burchinal, & Zeisel, 2010). Statistics show that African American students are performing below the economic, social, and academic indicators in reading in the United States and one of the contributing factors is the structural support of the home and environment (Dotterer, Lowe, & McHale, 2013; Ford & Moore, 2013). Dotterer et al. (2013) found that parent–adolescent relationship quality can determine academic functioning. In cases where there are significant increases in conflict, notable decreases in GPA, school bonding, and school self-esteem effects the student climate in schools. Better relationship with parents or increases in familial warmth were related to increases in school bonding and school self-esteem (Dotterer et al., 2013).

**Racial factors.** There is a significant difference in test scores and grades between different American ethnicities (Rowley & Wright, 2011). Research has consistently found racially inequitable disciplinary exclusion and concomitant racial disparities in academic

achievement (Aud, Fox, & Kewal-Ramani, 2010; Skiba et al., 2011).

Harris and Graves (2010) constructed a longitudinal study to examine cultural transmissions and reading achievements of students in elementary school. Analyzing the structure and socioeconomic status of fifth-grade students to correlate high and low achievement-reading scores will help prepare educators for his or her classroom delivery method. Harris and Graves (2010) stated that cultural capital plays an important role in the lives of middle school students. Results showed that affluent parents have defined cultural capital as extracurricular activities. The extracurricular activities like music, dance, arts and other activities can broaden middle school students' cultural capital. Middle school students that have embraced cultural capital have provided opportunities for open dialogue and detailed conversations with their parents that have led to a broader perspective of culture. As such, cultural experiences are linked to the improvement of literacy skills and improved reading achievement levels (Harris & Graves, 2010). According to the researchers, timing is imperative and the introduction of cultural capital during adolescent years has produced positive academic and maturity growth in middle school students.

Rowley and Wright (2011) found that African American students who feel disengaged with their learning experience have poor academic achievement. Some middle school African American boys become disengaged from learning because academic success is viewed as a "White" (Rowley & Wright, 2011). Some middle school African American adolescent students believed they are acting outside of their nature and culture if they behave and excel academically (Rowley & Wright, 2011).



**Students' Personality and Self-Efficacy.** The Big Five personality traits in adolescent boys and girls can affect their academic development and performance goals (Watson, 2012). There is a relationship between the personality characteristic of narcissism and learning. A positive viewpoint and positive assessment of one's self stimulates a level of confidence in adolescents. Some narcissistic tendencies are identified as unwanted behaviors, but under the five factor model, the Big Five personality traits, narcissistic tendencies are not viewed as such (Watson, 2012). The Big Five personality traits are: openness, conscientiousness, extraversion, agreeableness, and neuroticism. Watson (2012) argued Freud's personality traits can facilitate or inhibit the efficient use of learning strategies by exercising control over those motivational impulses or the motivational blocks to use or not to use while learning takes place in the classroom. Karkowski, Lebuda, Wisniewska, and Gralewski (2012) found that creative self-efficacy (CSE) and creative personal identity (CPI) associated with the five personality dimensions: positively with openness to experience, extraversion, and conscientiousness, negatively with neuroticism, and agreeableness is associated with hindering students' academic development (Karwowski et al., 2013).

Students' level of self-efficacy determines their reading performance based on how they handle their daily process at school. In general, students faced with literacy challenges believe in their abilities or do students think they are defeated if success does not come immediately. Karwowski et al. (2013) stated that people must believe in their abilities and be confident.

**Gender.** The importance of reading proficiency for middle school students underlines the need to understand the gender gap in learning achievement (Schwabe, McElvany, & Trendtel, 2015). Research has shown that girls have an advantage on constructed-response items compared to boys who have the same reading ability when taking different literacy assessments (Schwabe, McElvany, & Trendtel, 2015).

In South Carolina, test scores show that female students' literacy skills are higher than male middle-school students; this is particularly true of female Caucasian students (National Center for Education Statistics, 2013). According to Mullis, I.V.S., Martin, Foy, and Drucker (2012), differential functioning was used to study the complex relationships among gender, item format, and intrinsic reading motivation in two samples taken from large-scale German assessments of reading comprehension. The reading assessments were created to align with Common Core standards and the outcomes indicated that, compared with equally skilled boys, middle-school age 12-15-year-old female students are better readers than boys on constructed-response items (Schwabe, McElvany, & Trendtel, 2015). Male students have more confidence and intrinsic motivation when taking multiple choice assessments (Ciullo et al. 2016). Additionally, the assessment results suggest that middle-school female students have strong reading comprehension skills that result in high scores on literacy benchmarks and high stakes assessments compared to middle-school boys. Literacy teachers can use these results to revise standards and create common assessments to help male students score as high as female students on literacy assessments.

Personality traits that can affect reading comprehension skills can be influenced by gender. On the one hand, it is found that females tend to be more conscientious, and open to experience, which aids in their academic preparation (Karwowski et al., 2013). Male students have a tendency to be complacent and not address their weaknesses. In addition, Karwowski et al. (2013) found that boys have higher sense of neuroticism. Neuroticism relates to fear and worry about a significant issue. As a result of performing poorly on reading test scores, boys worry about their weaknesses instead of working hard to improve. Girls show a robust and positive relationship towards openness to experience and extraversion. According to Karwowski et al. (2013) women have an edge over men when it comes to defeating an obstacle that has hindered their success in the past.

**Teacher Efficacy and Preparedness.** Teachers' efficacy and preparedness to teach the students have an impact on the students' academic achievement. According to Banks, Dunston, and Foley (2013), the common core standards requirements stand on not letting any child fall behind academically; especially, in reading, but there is an alarming gap in reading levels between African-American students and other American counterparts. For teachers to have a higher sense of self-efficacy in handling diverse students is necessary. Teachers who have negative attitudes their capacities toward educating low-income and middle school students can negatively affect the academic experience for this subgroup of pupils (Banks, Dunston, & Foley, 2013).

Banks, Dunson, and Foley (2013) acknowledged that teachers with higher efficacy made more confident predictions about students' academic and social success (p. 20). Teachers with higher efficacy reinforced the reading deficiencies and focused on

individualized instruction, adapting instruction to meet the middle school students' needs. The utilization of text that associated with the interest levels of middle school students along with providing literacy assistance help change the attitudes toward reading. Similarly, Aud et al. (2010) found that teachers benefit from professional development opportunities as these can improve their self-efficacy and preparedness, particularly professional development opportunities focused on highlighting strategies to close the academic achievement gap between African American students and the White students. Aud et al. (2010) stated that teachers who are struggling to make a difference in progress ratings for American adolescent students can benefit greatly from participating in occasional professional development sessions.

For middle school, American students, preliminary data analyses of reading deficiencies are found in elementary schools ((Losen & Martinez, 2013; Wehman et al., 2015). According to Watson, Kehler, and Martino (2010), identified literacy deficiencies such as interpreting, understanding vocabulary, text comprehension, and writing were often obtained at an early age from authentic tests or standardized tests. The identified deficiencies displayed on test scores are associated with middle school students' reading comprehension. The test scores remain inadequate and are preventing this subgroup of pupils from achieving academic success throughout their school career (Watson et al., 2010).

**Parent Involvement.** Parents and guardians who participated in reading programs and the evaluation process of their middle school students' academic development can also influence performance. Active parents or mentors have to take the

role of a counselor. School visits are necessary for middle school parents/guardians, or mentors can employ to view the inner workings of their students' academic process. Therefore, each school visit becomes the "eyes" of reviewing the academic program (Lee, 2013). Alliances of parents and mentors have to develop a team concept and responsibility to make themselves visible in the schools. Additionally, school visits also provide an opportunity for parents to examine issues that are hindering middle school students from excelling on the same level academically as their other student counterparts. The positive parental influence on students is critical to their success in school and life. Parental involvement is a major factor in students that relates to high achievement on their reading tests and academic achievement (Harris & Graves, 2010). Parental involvement encompasses many activities. The most important thing a parent can do to help students improve academically is helping their children with their homework and supervising them while reading aloud. These activities have a noticeable impact on students with improvement of their reading achievement (Harris & Graves, 2010).

### **Reading Concerns of Middle School Students in South Carolina**

In schools across South Carolina, there has been a steady and continuous decline in subject matter standardized test scores for American adolescent students (McDonnell & Weatherford, 2013; Stillwell & Sable, 2013). The National Assessment of Educational Progress (NAEP) shows adolescent students in South Carolina are reading below adolescent counterparts in multiple states within the United States.

In South Carolina, educators have to comply with the revised Common Core standards. An agreement of the importance of nonfiction literature in classroom teaching is not in within the field of training. The revised Common Core State Standards have taken an increased policy focus to help improve the reading and ELA test scores (McDonnell & Weatherford, 2013; Stillwell & Sable, 2013). Common Core explicitly calls for broad usage of informational text along with reading activities that ask students to work on developing their reading comprehension, particularly for middle school students (Möller, 2015). Möller (2015) stated quite a few thoughtfully-written and graphic non-fiction trade books have been published in recent years that can support Common Core requirements in South Carolina while also engaging students with modern day technology that promotes reading.

Teaching middle school students to think critically and to develop comprehension skills has always been important. In South Carolina, the revised common core standards transition to a national state of learning standards expecting for all students to be able to demonstrate higher-order thinking, it becomes essential. In this nonexperimental study assessing the effects of exposure to the MAP assessment and the results from the PASS assessment on students' critical thinking, interpreting, and composing in general education classrooms are important (McDonnell & Weatherford, 2013; Stillwell & Sable, 2013). I reviewed the reading levels and scores on MAP to teach the concept of comprehension, writing, critical reasoning, and advanced literacy skills to prepare for PASS. According to Duesbery and Justice (2015), the start and the conclusion of the semester, teachers should give students pre-measured and post-measured assessment.

This examination of syntactic reading fluency and a curriculum-based measure of the composition will help teachers make educated judgments on future performance in literacy development. To give all of the teachers the best chance to meet all of the student's needs, classroom observations are valuable if used to monitor the approaches being used and assess the obligation of the literacy plan that is an implementation of the revised common core standards in South Carolina. Results showed that students exposed to the intense literacy programs grew significantly in the area of critical thinking, while the comparison group did not (Duesbery & Justice, 2015).

### **Electronic Reading Assessments Versus Printed Reading Assessments**

MAP is a computer adaptive test that adjusts to match the performance of the student after each item has been given. Therefore, it is important to understand the differences between electronic reading assessments and the printed reading assessments. Studies have documented the differences in their effectiveness. The process of analyzing comprehension levels of adolescent students while utilizing strategies to help students think for themselves and navigation skills are different when comparing electronic reading assessments (ERA) to printed reading assessments (PRA). Wu (2014) used participants from 19 of the Programme For International Student Assessments (PISA) countries. Teachers used metacognitive strategies to prepare students for the ERA or PRA with the goal to enhance the learning experience. Wu (2014) stated the teachers' emphasis on reading strategies that involved planning, monitoring key terms, rereading, evaluating and correcting while taking the assessments.

In this technology driven society, educators have defined modern day technology as a wicked problem or an engagement saver in regards to meeting academic essentials of diverse learners (Kimmons, 2014). For literacy development, technology provides new applications and assessments that will identify student's current reading level and increase the rigor as students advance daily. Modern day technology integrated into schools today has amplified the level of commitment when it comes to taking formative or high-stake tests online. In contrast, MAP data will help teachers develop activities that involve constant decision making and monitoring resemble serious reading tasks and are beneficial to reading comprehension for all students (Wu, 2014). As a result of the two assessments, adolescent female students have significantly higher reading levels across 41 PISA countries. The data from the evaluations can provide educators with the initiative to phase in activities that improve adolescent 8th-grade students' literacy knowledge, literacy skill sets, attitudes, and attraction to reading.

According to Wu (2014), utilizing modern day technology for reading improvement is beneficial, but this technology resource must be used efficiently. Planning is essential to improving the academic reading performance of each student, especially adolescent boys. Wu (2014) encouraged teachers to use metacognitive strategies to facilitate students' reading and to improve higher order thinking. Reading is beneficial for students and educators they should use both ERA and PRA in their classroom. Wu (2014) stated that educators have to define the learning objectives to develop additional metacognitive strategies and navigation skills. Establishing the



literacy goals will continue to increase student's adolescent reading scores along with improving the reading scores of adolescent males.

The critical literacy issues educators deal with concerns American adolescent students are alarming, but the revisions and re-teaching strategies will help reverse the literacy matters. Relevant cultural texts will help American students to see themselves as important icons or active individuals. This type of book will draw a reading interest because the cover or title represents something about the American culture (Wood & Jocius, 2013). The collaboration with their teacher and understanding the significance of reading will transform the feelings of dislike to those of love. A critical conversation is not about just a book, but how American students can view their reading deficiencies along with strategies to help improve this subgroup's literacy skills over time. Some educators are not willing to incorporate the "Three C's" into their classroom priorities. These teachers are prepared to do the bare minimum and allow American adolescents to fall between the cracks, and those results lead to expulsion, adolescent parenting, or incarceration (Guerra, 2012).

### **Teachers' Roles in Improving Reading Comprehension and Literacy**

According to Wood and Jocius (2013), moreover, often when a teacher ask a middle school student about reading, the first thing you will hear is "I hate reading." Wood and Jocius (2013) published an article and in the article, the authors names to these similar words "hate and book". The reason American adolescent is struggling academically compared to their Caucasian American and Hispanic American counterparts is due to comprehending. Middle school students in America should know

reading is a choice they have that will lead to their academic success. Educators play a huge role in helping this subgroup of students by encouraging them to read certain books. Literacy instruction can be established to help teenagers engage in cultural, personal, and social development that connects to the learning environment (Wood & Jocius, 2013). According to Wood and Jocius (2013), educators have to work together to establish the 3 C's: culturally relevant text, collaboration, and critical conversation.

Students are disengaged when it comes to reading and a form of literacy. Educators have identified the achievement gap between middle school students and their counterparts in literacy development. The National Assessment of Educational Progress (U.S. Department of Education, 2011) report showed that middle school students in eighth grade have the second lowest reading comprehension scale score". Inside the walls of each school, the purpose for educators is to be able to reach every student. Sometimes academic institutions in the U.S. fail to reach middle school students when it comes to literacy development. Being labeled as a slow learner or having a reading deficiency come next. After being labeled and having educators not willing to try to develop an understanding of this subgroup, middle school students continue to find this group of students struggling in the literacy classroom.

A factor of limited academic instruction is causing middle school students not to meet state standards in Reading and English language arts tests and course grades. The awareness of how to educate students of color is necessary for schools across America. Literacy is a clear indicator as to one of the problems that are preventing middle school American adolescents from excelling in school. Wood and Jocius (2013) identified

strategies to help improve the literacy skills of middle school American students. A critical factor in schools is to develop mentoring and leadership programs that will require American students' teachers to assess students year-round. Mentoring and leadership programs can help educators, especially American teachers to develop a framework to encourage middle school teenagers to respect and embrace the learning process.

American educators are trying to identify reasons middle school students are disengaged from the learning process (Donner & Shockley, 2010). In the academic environment, educators observe cases where students are disengaged, but the problem is that those middle school students are left behind academically. Donner and Shockley (2010) addressed the literacy skills that are being taught; middle school students are not mastering the skills and the results is failure on the standardized tests, and lower grade performance compared to their counterparts. Educators have to determine the disconnection in adolescent students. To reverse the achievement levels in literacy among middle school students, educators have to understand the social classes. Teachers have to gain an understanding of social classes to close the achievement gap in literacy between adolescent readers (Ford & Moore, 2013). Evaluating practical instruction is a vital asset for educators to have when it comes to teaching middle school students to improve their literacy skills. Middle school educator's administrators and teachers have to provide essential reading material, along with encouraging adolescents to embrace the power of reading (Brooks, Havard, Tatum, & Patrick, 2010). Brooks, Havard, Tatum, and Patrick

(2010) argued it will take more than a village of educators to help middle school students improve their literacy skills.

Developing readers are a task educator's experience daily. In America, students who have a positive teacher influences have shown positive academic growth and achievement in school and society (Gottzen, 2011).. A positive influence or role model presence serves as a gatekeeper and advocate for a definite success in the lives of students' school experience (Gottzen, 2011). According to Lai, Wilson, McNaughton, and Hsiao (2014) teachers have to incorporate the Learning Schools Model (LSM) to review the disconnection between students with high levels of reading compared to subsequent low levels of reading. Active reading enrichment programs provide skills for minutes to survive in school and society. An after-school reading program provides positive influences with mentors that will help decrease remediation in schools among middle school students (Nelson-Royes & Reglin, 2011). The reading programs and instructors will present cultural practices that will create an active learning environment for educators to model in schools. Tatum (2009) emphasized that meaningful reading will reflect on middle school student's literacy improvement in schools.

### **Reading Interventions and Literacy Movement in America**

Across the United States, there have been advances in literacy in the early grades. The literacy improvements have not transformed over to 13-17-year-old adolescents (Lai, Wilson, McNaughton, & Hsiao, 2014). Basic coding and constructing words and text in at a young age is important, but the content is far more challenging for adolescents in secondary grades. According to Lai, Wilson, McNaughton, and Hsiao (2014), intensive

literacy intervention programs should be incorporated in all schools. The establishment of the literacy intervention programs has to be identified with rigorous and engaging assignments. Each literacy program will implement a high stakes test component that is required for students to attain significant levels of improvements throughout the school year. The literacy program's overarching goal is to establish a connection that student's literacy skills are at grade level or above grade level.

The roughly one-quarter of U.S. eighth graders who score below basic on national assessments of reading are poorly fitted out for the reading demands of secondary school (Hemphill, Kim, Yudron, LaRusso, Donovan, Sabatini, & Society for Research on Educational Effectiveness, 2015). According to the National Center for Education Statistics (2013) middle school students in South Carolina struggle with comprehension and making text-based inferences. Intervention programs in middle school need to be comprehensive. The program is designed to focus on struggling readers and because of the interdependence of components of reading.

A study was conducting using four school districts. The district breakdown consisted of two urban school districts and two suburban/rural school districts. The students were selected from a lottery pick system starting with the lowest achievers from each Group A: two urban districts consisted of 92% of students on free and reduced lunch. Group B: two suburban/rural district consisted of 68% of students on subsidized lunch.

The Strategic Adolescent Reading Intervention (STARI) is a comprehension middle school reading intervention developed by the creator and finder of the Strategic

Education Research Partnership Institute (SERP). STARI intervention program was developed so teachers can use the intense program for three to five weeks during an enrichment period. The assignments are created to improve student comprehension and fluency with using fiction, non-fiction, journal articles, and standard lesson plans. The study showed that students over a 5-week period improved on their reading fluency through decoding, word recognition, and sentence processing.

Hemphill, Kim, Yudron, LaRusso, Donovan, Sabatini, and Society for Research on Educational Effectiveness (2015) found that Tier-2 intervention enrichments for struggling readers can improve a range of reading outcomes. Each students' ability to decode words, comprehend the content, improve fluency, and increase knowledge is valuable for Tier 2. In the North Central School District, Response To Intervention is a key component that teachers use to help students master the curriculum for each subject. The revision of the curriculum units will help keep students engaged and their interest along forecasting to improve each school's test results along with improving the state report card.

Turner (2010) stated the construction is automatic, and the development of words comes with practice. The foundational goal for early readers is to comprehend what they are reading. The Progressive goal for students is to apprehend what is read. This level of advancements will improve cognitive development, which poses an unyielding influence on the educational and economic success due to excellent literacy skills (Silva & Cain, 2015). LeBerge and Samuels (1974) conducted research centered on students who were not fluent readers but were given a repetition task to read the same thing consecutively.

LeBerge and Samuels (1974) believed in using the theory of automatic information processing in reading, which is defined as repeated reading. Using the theory of automatic information processing in reading will help strengthen non-fluent readers' vocabulary and comprehension skills. A non-fluent reader uses too much time trying to decode words instead of understanding the meaning of the word and the content meaning. The more middle school students read, the more this subgroup will achieve fluency, and their ability to decode and understand text automatically will help increase their reading test scores (Turner, 2010). The error of correction can be a concern. With classes in the 21st century of sometimes 30 or more students, how can one educator correct a student reading error? However, the concept of repeated reading is imperative for middle school students. Continuously reading will benefit middle school students with speed and accuracy when it comes to increasing their vocabulary and comprehending passages.

The Test of Word Reading Efficiency (TOWRE) can be administered to middle school students throughout the school year. This assessment will help challenge each subgroup of adolescent students to improve their reading performance level. A competition strategy should not be used, but some incentive policy is necessary for improved performance on the reading assessment. The TOWRE administration cycle to each subgroup of students every other month throughout the school year can be mandatory. As an incentive for teachers, a professional development session can be conducted for the entire school. The professional development session can identify the need for improvement in reading, and every stakeholder in the building can use the assessment to improve middle school students' reading deficiency.

## **MAP Test Characteristics and Effectiveness**

Measures of Academic Progress is developed by the Northwest Evaluation Association. It is a computer adaptive test that adjusts to match the performance of the student after each item has been given (Jones, 2015; Medford, 2014; Northwest Evaluation Association, 2012). The association was founded in 1976 by a group of school districts that were searching for how to practically and efficiently measure students' achievement and how quick they are learning. MAP is one of its most successful projects yet, as it is one of the most widely used computer adaptive tests. MAP is now utilized by over 2340 school districts in the US as well as beyond, particularly 61 countries more (Ash & Sawchuk, 2008). Even though most districts opt to use the MAP mainly to assess reading, there are also tests made for math and language arts as well as science. Most districts subject the students to MAP twice a year from their second to tenth grades. However, there are also districts that can decide to give the tests more than twice, up to three to four times within the school year to better evaluate students' progress (Jones, 2015; Medford, 2014; Northwest Evaluation Association, 2012). The test, like other NWEA tests are untimed even though they are supervised. The computerized MAP can be completed within 45 minutes to an hour per subject. MAP tests show student performance through a single, cross-grade scale. This scale is called the RIT scale, which is short for Rasch Unit, one of the IRT models (Jones, 2015; Medford, 2014; Northwest Evaluation Association, 2012). The scale is founded on the IRT theory, which is advantageous because it aligns student achievement levels with item difficulties on the same scale. All the test items on the MAP is placed on the RIT scale, according to their



difficulty level. Each increasing RIT is associated to a numeric value called the RIT score. Each score is a corresponding level of difficulty. As a student takes a MAP test, items of varying RITs or levels of difficulty. The MAP system can then determine the difficulty level at which the student is able to take on to perform properly, and enough data has been connected to gauge students' abilities, the test ends and the student is given an overall RIT score. Several benefits of MAP system have been reported by researchers, mainly because of these characteristics: grade-independence, equal-interval scale, and stability (Jones, 2015; Medford, 2014; Northwest Evaluation Association, 2012).

Even though the MAP was not designed to necessarily correlate with other high stakes testing and its purpose is to inform instruction, several researchers evaluated it for its influence on the scores of the students in other forms of state tests. Cordray, Pion, Brandt, and Molefe (2013) evaluated the MAP program composed of two components, the computer-adaptive assessments given three to four times a year and teacher access to MAP resources on how to use data from the assessments to improve their instruction. After the second year of implementation, results indicated that the MAP program significantly improved the performance of low and high ability students.

Shemika (2015) evaluated the Georgia Criterion Referenced Competency Test according to the measures of academic progress in mathematics and reading. Regression analysis findings revealed that seventh and eighth grade students enrolled in two small-sized middle schools located in a rural district in Georgia who took both the MAP and CRCT assessment showed that there was a significant relationship between the two tests. MAP scores can influence CRCT scores in reading and math. Because of this, teachers

can design lessons composed of topics based on the MAP scores to help students prepare better for CRCT. Earlier, Cordray, Pion, Brandt, Molefe, and Toby (2012) claimed that even though the performance of the students on the MAP influences their performance on the CRCT, it is unclear if the relationship is mainly between the two variables and that no other internal and external factors have influenced the outcome of the students in the CRCT (Cordray et al., 2012). Through a correlational research design, Arnold (2013) also supported the positive effects of MAP on CRCT. On the other hand, Collins et al. (2008) showed that MAP can affect CRCT but other external and internal factors are also at play. External factors refer to socioeconomic status, financial background, and the parents' education level of the students. Internal factors are those that can be controlled by school, such as the educational institution's organizational culture and quality of education.

### **Implications**

The study would focus on how to use suggestions and best practices for educators to best utilize the reading data for the North Central School District. The results of this from MAP and PASS are related to IRT theory. The objectives is to focus on students, teachers, parents, community, and the school systems with using the results to assist with literacy changes in the present and future. The study indicated the nature and strength of the relationship between MAP and PASS scores. Additionally, the study would indicate if performance on the MAP can directly predict a student's performance on the PASS. If predictions can be made, when a student performs poorly on the MAP, the interventions and support can be provided to the student to increase the performance on the PASS.

### **Summary**

A summary of this study would be to influence and train staff on building a strong reading program and intervention system that they believe in and will, in the long run, will produce results from students on reading in MAP, state testing, and other forms of progress monitoring systems approved by the South Carolina Department of Education. In addition, the North Central School District will determine if more resources will be provided to help students prepare for MAP. Also, if the performances on MAP can help predict PASS scores, the additional resources can include other benchmark capabilities to help track students' academic growth. If when the students do not perform well on MAP and PASS, the district wide intervention programs and other support resources can be provided for students. The predicted necessary change with using the intervention and resources will help students meet the state average on literacy assessments.

## Section 2: The Methodology

### **Research Design and Approach**

In South Carolina, students in third to eighth grade are required to take the PASS. Additionally, students are required to take the MAP assessment. The PASS is a standardized high stakes test that measures student performance on the South Carolina Academic Standards. The PASS test items are aligned to the standards for each subject and grade level that teachers are required to teach students for content mastery. The MAP assessment is a computer adaptive diagnostic norm-referenced test in math and reading. The use of a quantitative non-experimental design using archived data from 2012-2014 from three out of the five middle schools within the North Central School District in South Carolina will guide this study. The study will consist a of correlational comparison of eighth-grade students who would take the MAP assessment in the fall and or spring before taking the PASS assessment by the end of the school year. The purpose of taking the MAP assessment in the fall or spring is to help teachers determine student growth before the PASS assessment is administered.

### **Research and Design**

The archived data that I used for this study were from MAP reading scores and the PASS reading scores. A correlational design will use the archived MAP and PASS scores between 2012 and 2014. The purpose of using a correlation research design is to examine if MAP test scores in the fall or spring are closely connected to improve PASS scores. Regression analysis displays if a student's performance on PASS can be predicted from the MAP performance.

### Setting and Sample

The student population and data for this study comes from the North Central School District in South Carolina. The district has a population of over 17,770 students, and currently, there are 17 elementary schools, five middle schools, three high schools, and eight focused learning schools. The focus learning schools consist of alternative schools that help educate students who have discipline issues and students who are on an academic acceleration track. The district's focused learning schools, who employ 1,181 general education and special education teachers. The students' attendance rate is 95.6%. Students with disabilities make up 13.8% of the student population. The students who are served by the gifted and talented program make up 14.9% of the student population.

Table 1

*North Central School District Student Ethnic Breakdown*

White	African American	Hispanic	Asian	Multicultural and American Indian
48.3%	37.9%	8.2%	1.5%	3.7%

The percentage of students who qualified for free and reduced-price lunch was 49.3% when reported for 2012-2014. Tables 2-4 include the ethnic breakdown of all target middle schools in the study sample of the North Central School District. School 1 has a high population of Caucasian students. School 2 has a high percentage of African American students. The population of Hispanic students is high in School 3. The student populations of the target schools are very similar when comparing the demographic breakdown.

Table 2

*NCSD Middle School 1 Ethnic Breakdown*

White	African American	Hispanic	Asian	Multicultural and American Indian
56.4%	28%	6%	5%	4.6%

Table 3

*NCSD Middle School 2 Ethnic Breakdown*

White	African American	Hispanic	Asian	Multicultural and American Indian
40.5%	52.5%	3%	.07%	2.4%

Table 4

*NCSD Middle School 3 Ethnic Breakdown*

White	African American	Hispanic	Asian	Multicultural and American Indian
56.3%	30.3%	7.2%	2.4%	2.4%

For this study, I used archived data from 2012-2014 of all students in the fall and spring from the three targeted middle schools who took the MAP and the PASS. The students were in eighth grade in North Central School District. The students must have taken both assessments; MAP has to be taken in the fall or spring, and PASS is only taken in the spring. I excluded students who missed both the fall and spring MAP test and only took the PASS in the spring.

### **Instrumentation and Materials**

For this quantitative study, I analyzed reading levels of middle school eighth-grade students in North Central School District by examining whether student performance on the MAP reading test in the fall predicts PASS scores in the spring, so that administrators might use these data to target student interventions.

#### **Measure of Academic Progress (MAP)**

The MAP is an untimed assessment that measures students' progress and growth. According to Cordray et al. (2012), MAP includes: (a) computer-adaptive assessments administered to students up to two times a year and (b) teacher training and access to MAP resources on how to use data from these assessments to differentiate instruction.

MAP tests and training are currently in use in nearly 20% of K-12 school districts in the United States and more than a third of districts in the Southeast. Students start taking MAP tests in kindergarten and complete testing in eighth grade. Before taking the MAP assessment, students must log in on either a personal computer or they can use personal technology devices. Each student logs in according to their name and identified MAP test. After the students have logged into the MAP assessment, the test questions will start according to the student's last MAP assessment score from the previous grade. The MAP is a formative assessment, eighth-grade student receives a score that helps outline what he or she knows, is ready to learn, and is projected to achieve. Each score is compared to national norms to determine the student's reading ability. The scores of the MAP display an accurate and fair measurement of the student's current knowledge level and Lexile levels change from fall to spring assessment windows (Lai, Wilson,

McNaughton, & Hsiao, 2014). The MAP scale, the RIT (Rasch Unit) scale, is a stable equal-interval vertical scale. The initial question on MAP generates according to a student's previous test and either on grade level, below grade level, or above the student's grade level that aligns with Response to Intervention strategies (Ciullo et al. 2016). The question set establishes the baseline of on grade level, above grade level, or below grade level; this allows the student to progress through the MAP assessment.

After every 10 questions, the MAP assessment generates questions above the average level or rigor to assess the student's achievement level (Cordray et al. 2012). Each score allows the schools and students the opportunity to compare the ability or school within the North Central School District. The data results are provided by the statistician and research specialist in North Central School District. The Northwest Evaluation Association scores the test and the students' results are rated on a national percentile.

### **Palmetto Assessment of State Standard (PASS)**

In preparation for PASS, teachers are not given practice tests. Assessment preparation vendors provide teachers with workbook samples and resources like USA Test Prep to help students prepare for state assessments. Teachers in the North Central School District have been trained to collaborate by combining resources, common planning, and common assessments.

The PASS test is a high stakes test given to students in Grades 3 through 8. The PASS test from 2012-2014 measured student performance on the South Carolina Curriculum Standards. The PASS test is untimed, allowing students to have as much time



as needed to complete the assessment. Standards outline what schools are required to teach and what students are expected to learn. I analyzed PASS test scores to evaluate student performance on the content knowledge expected of eighth-grade students.

The PASS is a test that calculates each student's independent absolute ratings, growth scores, and federal accountability status. The direct score in PASS will inform the teachers, parents, and students if the student have met, not met, or have attained an exemplary level on the knowledge and skills that are required to learn from South Carolina State Standards.

The PASS assessment is aligned with South Carolina state standards, and the results indicated what students have learned from that school calendar year. Teachers administer PASS tests to students. From 2009-2014, PASS was a paper-based assessment. The results from the PASS test indicate whether the students are exemplary, have met or have not met the South Carolina grade level standards in the core subject areas.

### **Data Collection**

Data for this study was from previous eighth-grade students from the targeted three middle schools in the North Central School District. The students from each of the three middle schools in the North Central School District were eighth graders in 2012-2014. The independent variable was the MAP scores, a numeric score. The dependent variable was the PASS score, also a numeric score.

I applied to the Walden University Institutional Review Board (IRB) for IRB approval to conduct this study. My IRB approval number is 04-24-17-0351574. To gather

information, I applied to the district office of instructional leadership and testing to request to conduct the study. Additionally, the district office personnel in the instructional leadership department gave me permission to collect the archival data. The archived scores are stored at the sample middle schools in North Central School District. I requested access of the data from the PowerSchool clerk.

The selection process would give me the opportunity to analyze 3 years of archival MAP and PASS data. The students were in the eighth-grade in the years from 2012-2-14 in the North Central School District. The correlational comparison and regression analysis between the MAP scores and the PASS scores will be used to examine if the MAP test results can be used to help predict future PASS achievement levels. The information obtained from the former middle school students provided insight into the educational gap in reading and literacy amongst the student body. I conducted a linear regression analysis of the PASS data with the MAP scores for all ethnicities to examine possibilities of prediction of student performance in the PASS from the MAP scores. The archived data were used to validate participants' scores from the schools and are presented in Tables 1, 2, and 3.

### **Assumptions**

My first assumptions were that the middle schools in this study had followed state guidelines for preparing for the state testing and that the information recorded in database is accurate. Another assumption was that each student did not intentionally perform poorly on the MAP and PASS. I assumed that each teacher equally used effective

instructional strategies while implementing the South Carolina state standards in preparation of MAP and PASS.

### **Limitations**

I used eighth-grade students who were administered both the MAP assessments and PASS assessment during the 2012-2014 school year. The findings are general and applicable to eighth grade students with similar demographic characteristics, achievement levels, and learning abilities. Another limitation is the design of the study. There is no guarantee that the generalized results of the equally selected number of students from the three middle schools sample apply to students who have not met, met, or exceeded the national reading average. This study was also limited to three middle schools in a rural North Central School District in South Carolina. This study is may or may not be applicable to other locations with different demographic and different academic characteristics. Generalizations of results to other states should be cautioned as the composition of the assessment scores may vary by student.

### **Scope and Delimitations**

The data for this study were gathered by analyzing participants' fall and or spring reading MAP data to predict or prepare an educated assumptions of student achievement on PASS assessments students in the North Central School District take in the spring of each school year. In South Carolina, the students in Grades 3-8 take PASS. The results of this study will be generalizable for teachers who teach all middle school students male and female students before the MAP and PASS assessment. The sample population was from three middle schools in the North Central School District. In this study, the students

are challenged to achieve high scores on the PASS. The comparison and correlation of the test results will range from PASS scores of students who have taken the MAP assessment in the fall before the spring PASS. Additionally, students are required to take the MAP assessment, but the results of the students who take the MAP in the spring may favor an increase on PASS that is administered in the spring. The results from the MAP scores can help teachers predict how well students will perform on PASS and provide customized interventions and resources to those needing it.

### **Protection of Participants' Rights**

The method and design was non-experimental quantitative. The data represented in this study is extracted from Palmetto Assessment of State Standards PASS reading scores and MAP scores. In this study, there will be 150 or a maximum of 200 previous middle school students who have taken the MAP and PASS in the eighth grade in the North Central School District. The first step to conducting research and using the North Central School District archived data; I applied for IRB approval from Walden University for permission to collect data. Additionally, I requested to collect from the District Office of Instructional Leadership and Statistics. The collection of archived data do not require parental nor student permission or consent forms to use the data in the study. The archived data were stored at the sample middle schools in North Central School District. Each participant's test scores reviewed will be confidential, and no student names or designated school, teachers, or leaders will be documented. The only information that was be used is the test data of PASS and MAP. I stored the data on a password protected

computer and password protected cloud drive. Only I have access to the data and keep it for 3 years after which the data will be destroyed.

### **Data Analysis and Findings**

This study was to examine the role of the MAP assessment in predicting future PASS test scores. The benefits allowed educators to both predict future standardized test results and identify areas in a student's education where intervention may be needed. To test the predictive value of the MAP assessment in PASS test scores, reading scores from both standardized tests were collected from two cohorts of students from Fall 2012 to Spring 2014. This resulted in MAP scores from Fall 2012, Spring 2013, Fall 2013 and Spring 2014, in addition to PASS scores from Spring 2013 and Spring 2014. Research question one examined the relationship between Fall 2012 MAP test scores and Spring 2013 PASS test scores; research question two examined the relationship between Spring 2013 MAP scores and Spring 2013 PASS scores; research question three examined the relationship between Fall 2013 MAP scores and Spring 2014 PASS scores; and research question four examined the relationship between Spring 2014 MAP scores and Spring 2014 PASS scores. For each research question, it was hypothesized that there will be a significant positive relationship between a student's MAP score and their subsequent PASS score. In the next sections of Section 4, sample characteristics and data collection will be reviewed, followed by the results of the statistical tests performed and a brief summary of the significant results.

### Sample Characteristics

MAP and PASS scores were collected from two eighth grade classes from three middle schools in the North Central School District for a full academic year. The sample from the eighth-grade class beginning in the Fall 2012 semester consisted of 741 students with both MAP and PASS scores. The frequencies and identifications for the students starting eighth grade in Fall 2012 are presented below in tables 1-3.

Table 1

*Frequencies for School for the Fall 2012 to Spring 2013 eighth grade class*

School ID	Frequency (%)
4603018	192 (25.9%)
4603038	225 (30.4%)
4603042	324 (43.7%)

Table 2

*Frequencies for Gender for the Fall 2012 to Spring 2013 eighth grade class*

Gender	Frequency (%)
Female	380 (51.3%)
Male	361 (48.7%)

Table 3

*Test score descriptive for the Fall 2012 to Spring 2013 eighth grade class*

	Min.	Max.	Mean	Std. Deviation
PASS score Spring 2013	471.00	846.00	640.00	59.27
MAP score Fall 2012	165.00	253.00	222.06	13.39
MAP score Spring 2013	159.00	256.00	224.61	13.45

The sample from the eighth-grade class beginning in the Fall 2013 semester consisted of 736 students with both MAP and PASS scores. Frequencies and

identifications for the students starting eighth grade in Fall 2013 are presented below in tables 4 – 6.

Table 4

*Frequencies for School for the Fall 2013 to Spring 2014 eighth grade class*

School ID	Frequency (%)
4603018	237 (32.2%)
4603038	233 (31.7%)
4603042	266 (36.1%)

Table 5

*Frequencies for Gender for the Fall 2013 to Spring 2014 eighth grade class*

Gender	Frequency (%)
Female	354 (48.1%)
Male	382 (51.9%)

Table 6

*Test score for the Fall 2013 to Spring 2014 eighth grade class*

	Min.	Max.	Mean	Std. Deviation
PASS score Spring 2014	480.00	829.00	638.55	54.59
MAP score Fall 2013	156.00	259.00	220.27	14.78
MAP score Spring 2014	170.00	268.00	223.85	13.89

To test the linear relationship between eighth grade student's MAP and PASS scores, correlations and linear regressions were calculated. Linear regressions were calculated the predicted change in the outcome variable when the predictor variable increases or decreases (Galton, 1886). This was done to determine if the same student's PASS scores can be predicted by their fall and spring MAP scores. Additionally, calculating a linear regression allowed for the comparison of  $R^2$  values, or the percentage

of variance in the outcome explained by the predictor, between models (Judd, McClelland, & Ryan, 2008).

Histograms of all outcome and predictor variables were observed for variable normality and skew. Scatter plots of residuals for each model were observed to both check for outliers and ensure that error variance was normally distributed. Cook's D values were calculated for each analysis to detect the presence of outliers; students with a Cook's D value over 1 were excluded from the analysis as an outlier (Judd, McClelland & Ryan, 2008). Test statistics obtained from correlation and regression calculations were significant at an alpha level of  $p = .05$ .

Research question one allows for the researcher to explore options. One of the first option is eight grade students in the Fall 2012 – Spring 2013 academic year. The correlation matrix of MAP and PASS test scores for research question one and two are displayed below in table seven.

Table 7

*MAP and PASS test score correlations for the Fall 2012 to Spring 2013 eighth grade class*

	PASS score Spring 2013	MAP score Fall 2012	MAP score Spring 2013
PASS score Spring 2013	-	-	-
MAP score Fall 2012	$r = .772^{**}$	-	-
MAP score Spring 2013	$r = .797^{**}$	$r = .813^{**}$	-

*\*\* Correlation is significant at the 0.01 level (2-tailed).  $N=741$ ,  $p < .001$*

Research question one examined the relationship between the Fall 2012 MAP scores and the Spring 2013 PASS scores. There is a significant, strong, positive relationship between a student's 2012 MAP test score and their subsequent 2013 PASS



score at the end of the year ( $r = .772, p < .00001$ ). In accordance with the hypothesis, regression results also indicated a significant relationship between the MAP Fall 2012 scores and the PASS Spring 2013 scores ( $F(1, 739) = 1092.79, p < .000001$ ). For every point increase on the Fall 2012 MAP score, the student's predicted Spring 2013 PASS score increases by 3.36 points, on average. 59.7% of the variation in a student's Spring 2013 PASS score can be explained by their previous Fall 2012 MAP score. For a visual representation of the relationship between MAP and PASS scores, please view figure one.

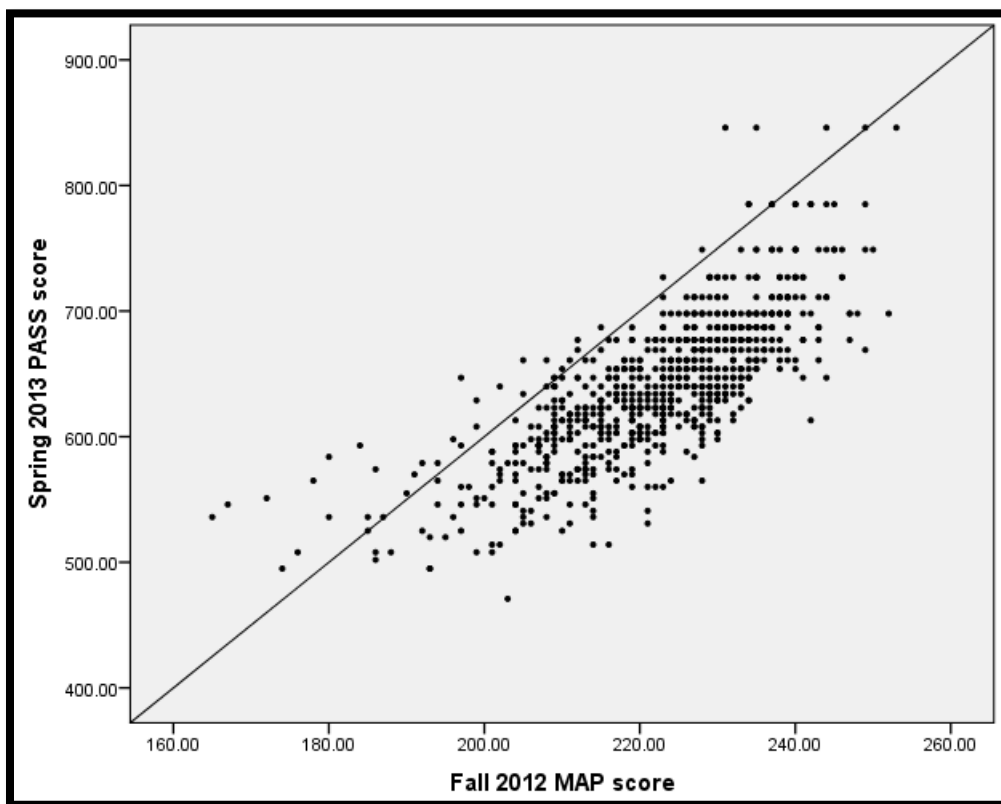


Figure 1. Scatter plot of Spring 2013 PASS scores and Fall 2012 MAP scores

Research question one continued to examine the relationship between Spring 2013 MAP scores and Spring 2013 PASS scores. Correlation analysis indicated a significant, strong, positive relationship between Spring 2013 MAP scores and Spring 2013 PASS scores ( $r = .797, p < .000001$ ). A linear regression was calculated with a student's MAP score as a predictor variable and a student's PASS score as the outcome variable. As was hypothesized, linear regression results indicated a significant relationship between Spring 2013 MAP scores and Spring 2013 PASS scores ( $F(1, 739) = 1287.28, p < .000001$ ). For every one point increase in a student's Spring 2013 MAP score, their predicted Spring 2013 PASS score increased by 3.45 points, on average. 63.5% of the variance of the students' Spring 2013 PASS score can be attributed to the students' Spring 2013 MAP score. For a visual representation of the relationship between MAP and PASS scores, please view Figure 2.

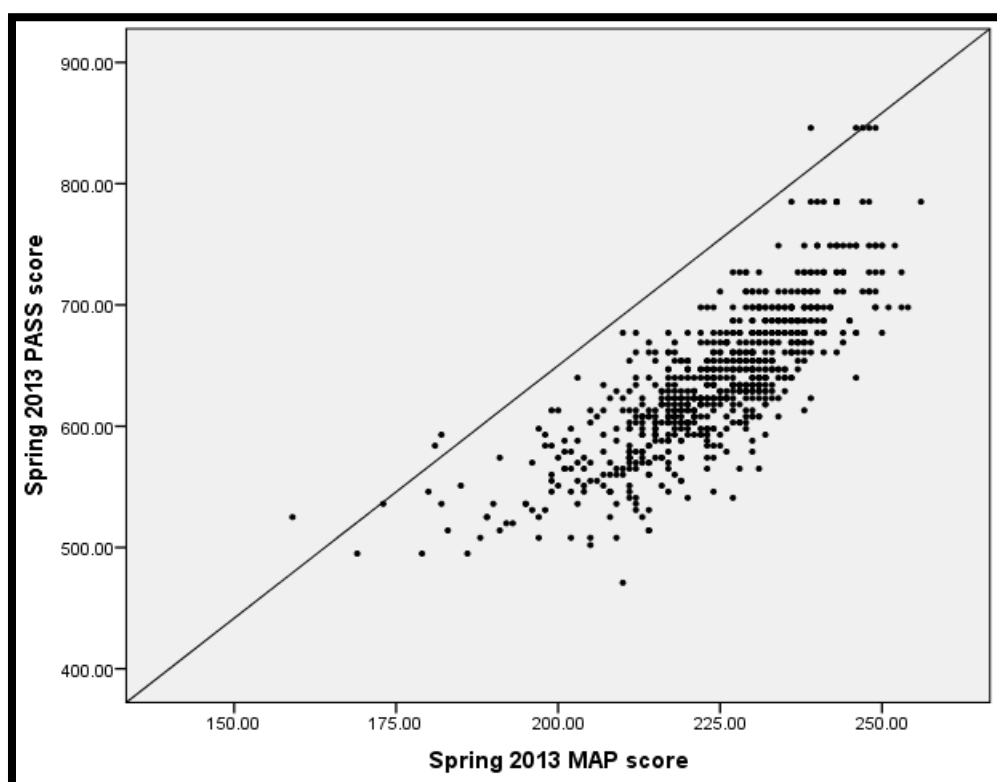


Figure 2. Scatter plot of Spring 2013 PASS scores and Spring 2013 MAP scores

Research question continues to pertain to eighth grade students in the Fall 2013 – Spring 2014 academic year. The correlation matrix of MAP and PASS test scores for research question one and two are displayed below in table eight.

Table 8

*MAP and PASS test score correlations for the Fall 2013 to Spring 2014 eighth grade class*

	PASS score Spring 2014	MAP score Fall 2013	MAP score Spring 2014
PASS score Spring 2014	-	-	-
MAP score Fall 2013	$r = .770^{**}$	-	-
MAP score Spring 2014	$r = .790^{**}$	$r = .848^{**}$	-

\*\* Correlation is significant at the 0.01 level (2-tailed).  $N=736$ ,  $p < .001$

Research question one continues to examine the relationship between Fall 2013 MAP scores and Spring 2014 PASS scores. In this sample there was a strong, positive significant correlation between Fall 2013 MAP scores and Spring 2014 PASS scores ( $r = .770, p < .000001$ ). As was hypothesized, linear regression results also indicated a significant relationship between a student's Fall 2013 MAP results and their subsequent Spring 2014 PASS results ( $F(1, 734) = 1607.681, p < .000001$ ). For every one-point increase in a student's MAP score, their PASS score was predicted to increase by 2.84 points, on average. 59.3% of the variation in Spring 2014 PASS scores can be attributed to Fall 2013 MAP scores. A visual representation of the relationship between MAP and PASS scores is displayed below in figure three.

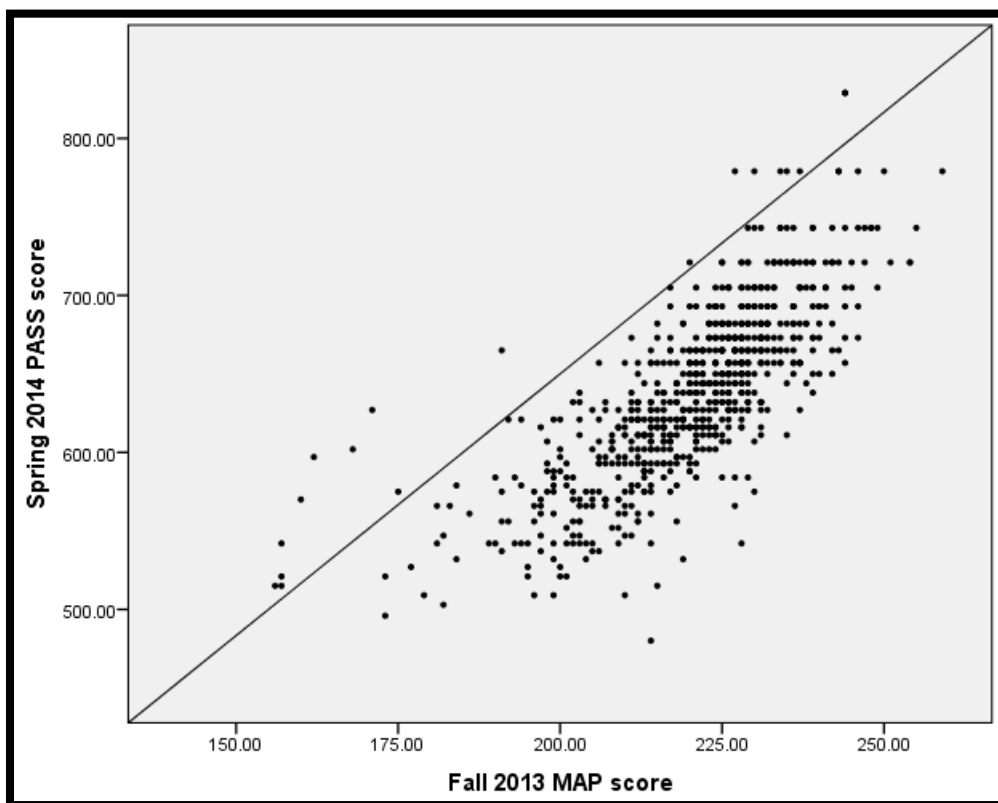
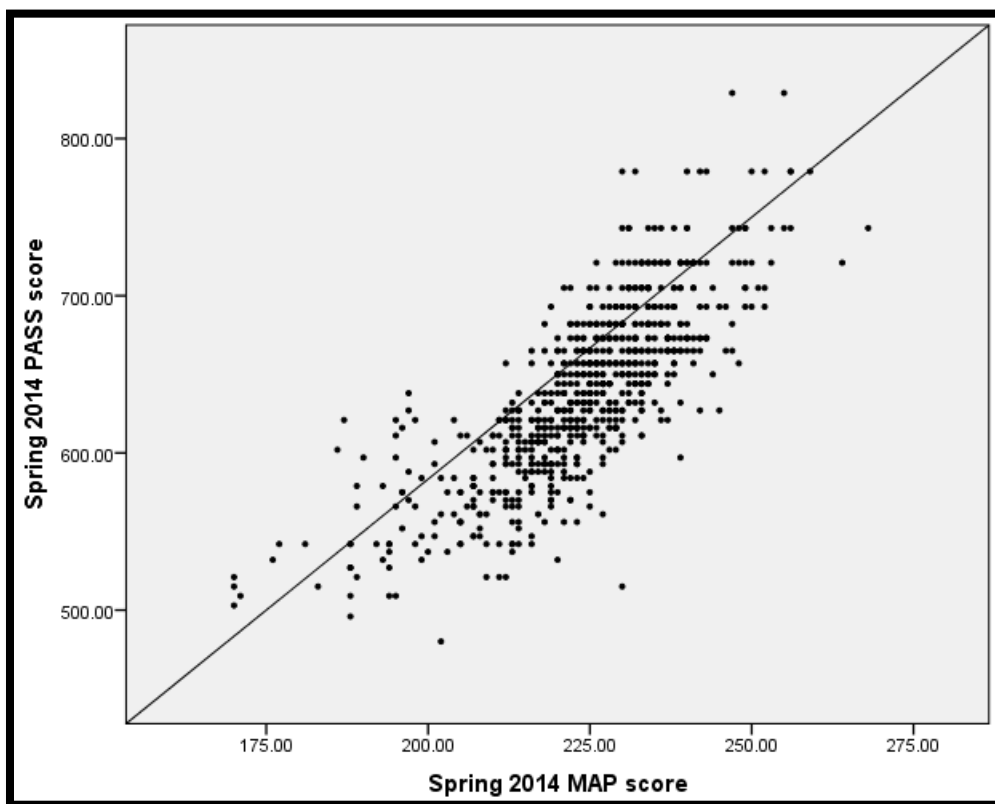


Figure 3 Scatter plot of Spring 2014 PASS scores and Fall 2013 MAP scores

For the final step of using research question one, how well a student's Spring 2014 MAP score predicted their Spring 2014 PASS score was investigated. There was a significant, positive relationship between Spring 2014 MAP scores and Spring 2014 PASS scores ( $r = .790, p < .00001$ ). PASS scores were regressed on spring MAP scores. True to our hypothesis, there was a significant relationship between a student's spring MAP score and their PASS score ( $F(1, 734) = 1216.473, p < .000001$ ). For every one point increase in an eighth grader's 2014 Spring MAP score, their 2014 PASS score was predicted to increase 3.11 points on average. 62.4% of the variation in PASS scores can be explained by the spring MAP score. A scatter plot representing the linear relationship

between Spring 2014 MAP scores and Spring 2014 PASS scores is displayed below in figure four.



*Figure 4.* Scatter plot of Spring 2014 PASS scores and Spring 2014 MAP score

### Summary

Overall, for both groups of eighth grade students MAP scores predicted PASS scores extremely well, with each set of MAP scores explaining well over 50% of the variance in corresponding PASS scores. For each group of eighth graders, MAP scores from the spring and fall were significantly related to spring PASS scores, as per each of the researcher's hypotheses. For the eighth graders in the 2012-2013 academic year and the 2013-2014 academic year, spring MAP scores predicted spring PASS scores slightly

better than fall MAP scores. For all the students, increasing their MAP score by one predicted about a 3-point increase in their later PASS score. A discussion of the implications of these results and how they may be used to identify a student's possible need for academic continues in section four.

### **Conclusion**

The correlation analysis and linear regression analysis helped me study the possible effects that the MAP scores can have on the PASS scores. Furthermore, the outcomes from this study will strengthen the request that each middle school in the North Central School District to hire reading specialist. Cassidy and Ortlieb (2013) stated that reading would help increase student knowledge, provide mental stimulation, and vocabulary expansion to help students prepare for assessments. If the students are not meeting state average in reading, the state will sanction the schools. That label is not significantly the worst thing in education, but the prejudgment of what teachers are doing come into question. If the predictions are made to be true, the students will perform well on the MAP assessments that will lead to teachers predicting achievement on state assessments.

### Section 3: The Project

#### **Introduction**

Eighth grade students in the North Central School District in South Carolina are not performing on the same level as their counterparts around the United States in reading. Students in 26 states within the United States are outperforming South Carolina eighth grade students in reading. During the course of the school year, the students take MAP assessment in reading and language arts. The MAP assessment is a national norm benchmark students take in the fall and spring in preparation for the PASS assessment that is administered in the spring. Educators can improve literacy skills that will produce reading scores that are above the national averages. The use of best practice in schools is common instructional delivery, and common strategic planning will be a starting point for literacy transformation in all students.

#### **Summary of the Results/Findings**

The results indicated that both groups of eighth-grade students' MAP scores had predicted PASS scores very well with the individual sets of MAP scores explaining over 50% of the variance in the students' corresponding PASS scores. The eighth-grade student's linear relationship between the MAP and PASS was tested by the correlations and linear regressions. Calculating the linear regressions predicted the change in outcome variables when the predictor variable increased or decreased (Galton, 1886). This was done to determine if the students' PASS scores could be predicted by their fall and spring MAP scores. The percentage variance in the outcome explained by the predictor between models (Judd, McClelland & Ryan, 2008), was accounted for by calculating the linear



regression and comparing the  $R^2$  values. The histograms presents the outcome and predictor variables that are to be observed for the normality and skew. The residuals for each scatter plots displayed both outliers to ensure the error variance is distributed normally.

Cook's D values was calculated to detect the presence of outliers; students with a Cook's D value over one was excluded from the analysis as an outlier (Judd et al. 2008). The benefits of this study would be two-fold; they would allow educators to predict future standardized test results and identify the areas in which a student's education may need more focus and intervention.

The predictive value tested reading scores from both MAP and PASS test of two cohorts of students from fall 2012 to spring 2014. This resulted in MAP scores from fall 2012, spring 2013, fall 2013 and spring 2013, in addition to PASS scores from spring 2013 and spring 2014. The scores used for both the MAP and PASS tests samples come from two eighth-grade classes from three middle schools in the North Central School District for a full academic year.

### **Research Question Explored**

In this section, the following question was explored, with their potential outcomes and the studies and their findings were categorized into four research processes as indicated below. Student archived data from fall 2012 – spring 2014 formed the basis for the research conducted.

RQ1: How well does student performance on the MAP predict student performance on the PASS?

H<sub>0</sub>1: There is no significant predictive relationship between student MAP scores and student PASS scores.

H<sub>a</sub>1: There is a significant predictive relationship between student MAP scores and student PASS scores.

**Research study process for fall 2012 – spring 2013.** The research question pertained to eighth grade students in the fall 2012 – spring 2013 academic year, I examined the relationship between the fall 2012 MAP scores and the 2013 spring PASS scores. The sample of eighth grade students who began in the fall of 2012 consisted of 741 students who had both MAP and PASS scores. The data showed a significant, strong, and positive relationship between the students' 2012 MAP scores and their subsequent 2013 PASS scores at the end of the year. In accordance with the hypothesis, the regression results indicated a compelling and strong relationship between fall 2012 MAP scores and the spring 2013 PASS scores. The students' predicted spring 2013 PASS scores increased by an average of 3.36 points for every one point increase on the fall 2012 MAP score with 59.7% of the variation in the student's spring 2013 PASS scores being explained by their previous fall 2012 MAP score.

**Research study process for spring 2013 MAP and PASS scores.** This process of the research, I examined the relationship between spring 2013 MAP scores and spring 2013 PASS scores. The correlation analysis indicated a strong, significant relationship between spring 2013 MAP and spring PASS scores. The linear regression calculated the student's MAP score as a predictor variable and a student's PASS score as the outcome variable. Results show the linear regression indicated a significant correlation between

spring 2013 MAP and PASS scores stated in the hypothesis. For every one point increase in a student's spring 2013 MAP score, their predicted spring 2013 PASS score increased by 3.45 points which was an average of 63.5% variance.

**Research study process for fall 2013 – spring 2014.** The research question pertained to eighth grade students in the fall 2013 – spring 2014 academic year. I examined the relationship between fall 2013 MAP scores and the PASS scores of spring of 2014. This sample showed a strong, positive, and significant correlation between the two. The hypothesis was once again proven to be true as the linear regression results also indicated a significant relationship between the student's fall 2013 MAP results and their subsequent spring 2014 PASS results. The results showed that for every one point increase in the student's MAP scores, their PASS score was predicted to increase by 2.84 points on average with a 59.3% variation in the spring 2014 PASS scores which was attributed to the fall 2013 MAP scores.

**Research study process for spring 2014 MAP and PASS scores.** The concluding process to using research question one covered how the students' spring 2014 MAP scores predicted their spring 2014 PASS scores. The investigation provided a significant and strong positive relationship between the spring 2014 MAP and spring 2014 PASS scores. The data from my study shows that PASS scores regressed on the spring MAP scores which was once more true to the hypothesis as there was a direct correlation between the student's spring MAP and PASS scores. For every one point increase in the eighth grader's spring 2014 MAP score their 2014 PASS score was

predicted to increase 3.11 points on average. 62.4% of the variation in the PASS scores could be explained by the spring MAP scores.

### **Rationale**

Professional development and goal setting have to be established for the academic setting in schools and effective communication amongst professionals will improve on the literacy progress for the students in each school. The biweekly in house professional development and intensive planning will improve the literacy of North Central School District students. This process will increase student performance on standardized tests and improve the literacy scores of eighth-grade students so that they are equivalent or exceeding standard of South Carolina Department of Education and the national average. The beginning of each professional development session will focus on the students' academic weaknesses based on test data. Analyzing the data and professional development will create strong professional learning communities through improving norms and daily purpose as an educator.

### **Review of the Literature**

#### **Addressing the Underachievement**

Husband (2012) states more needs to be done in schools to improve the reading deficiency of adolescent students. Adolescent students' deficiency in literacy development starts at an early age (Husband, 2012). Educators and mentors of eighth-grade students at North Central School District should receive training on instructional delivery and literacy strategies to assist with improving the literacy skills of the most reluctant readers. Through professional development, educators can be trained to

establish literacy goals by utilizing assessment data effectively to drive instructions (Van Kuijk, Deunk, Bosker, & Ritzema, 2016).

Training teachers to create an environment that helps students to improve their reading skills is an important strategy to increase reading scores of adolescent students (De Naeghel, Van Keer, Vansteenkiste, Haerens, & Aelterman, 2016). There is a strong correlation between students' attitudes toward reading and the ways in which they engage in reading activities in and out of school (Husband, 2012, p. 2). A positive experience with reading will generally help develop a positive outlook (De Naeghel, et al. 2016). The more adolescent students read, the more likely it is that they will change their approach to reading. Embracing students today with a positive demeanor and attitude toward reading will help develop less resistance when it comes time to reading benchmarks or state assessments (Husband, 2012).

Hulk (2011) stated educators providing a variety in terms of books to choose from will help dismiss levels of disconnection or discomfort when it comes to reading. Boys and girls like to read different novels (Hulk, 2012). For American adolescent students to learn more, educators and parents must provide reading options: action, violence, super heroes, sports, and video games (Husband, 2012). According to Husband (2012), girls believe there is value in reading but boys do not value reading. One factor educators must take into consideration is that if boys are not interested in reading at a younger age, that interest level will deteriorate over time. The value placed on reading and the interest shown toward reading will translate into positive scores on reading assessments.

### **Disengaged in Reading**

Disengagement for students, specifically for African American adolescent boys is because of the lack of achievement in reading. According to Pillay (2017) certain ethnicities are disengaged and shows a lack of motivation to reading. Training teachers to find that positive trigger in each student to encourage and support students in terms of literacy achievement is vital in terms of students making growth on literacy assessments each year (Rennie, 2011).

Teachers of the English content area focus on independent reading as the foundation of literacy improvement. Teenagers prefer reading for societal, practical, analytical, informational, and directional purposes (Husband, 2012). Educators and parents of students should engage the students with activities or define the student's interest that will help promote the need to read. Wagner states that learning and reading while performing a task keeps students engaged. Instructors who teach in ways that students prefer are likely to produce greater achievement outcomes (Wagner, 2008).

### **Teacher Perceptions and Development**

The way a teacher is perceived and the relationships they create with their students are valuable in terms of literacy. One suggestion for school districts today, hire more male educators (Royster, Reglin, & Losike-Sedimo, 2014). According to Graham and Erwin (2011), "male teachers are disproportionately represented in K-12 public schools. According to the National Center for Education Statistics in 2010, male teachers compose approximately 7.5 percent of all male teachers nationwide and make up approximately 2 percent of all teachers." With the lack of male educators, the perception

and training educators have to change in order to deal with some of the most challenging students (Bellibas, 2015). To be a great instructional leader, teachers must learn how to teach and deliver instruction. Principals must provide male teachers with training to become effective instructional leaders and to implement best practices for elementary and middle school levels (Bellibas, 2015).

The presence of highly qualified educators results in a stronger level of intensity in the classroom Royster (2014). The presence of male teachers and administrators is necessary. Schools and districts with a high population of male students require male educators. Graham and Erwin (2011) are confident and convinced that students will benefit from stimulating activities especially, when the content is presented from male educators with a positive and difference perspective into the classroom. The process of the professional development model established by affects how teachers develop their common assessments, stimulate change, and improve the attitudes of students (Royster et al. 2014).

The U.S. Department of Education and state legislation can increase interest in the teaching profession by raising the starting salary. College graduates and highly qualified professionals overlook the teaching profession because of the lack of compensation (Graham & Erwin, 2011). The education profession should be respected like physicians and lawyers; educators deserve respect as well as a fair, reasonable, unbiased compensation.

Hargrove and Seay (2011) conducted a study by questioning educators regarding student participation in gifted and talented programs. According to the educators who

participated in the study, both non-school and school-related issues created barriers limiting certain students from taking part in the gifted and talented programs. Hargrove and Seay (2011) stated that teachers suggest that on grade level students are disengaged from learning and excelling academically because there are no avenues for growth. With the help of good professional development and training will help educators improve on his or her craft as an effective instructional leader of the classroom.

### **Student Perception**

The perception students have on their teachers will affect their academic performance. The dislikes and likes affect the comfort of students' academic success (Eryilmaz, 2014). Schools today have stimulating atmospheres, modern day technology, and resources integrated into the curriculum to create opportunities for higher education. One concept that hasn't changed is the human structure. A teacher is in control of how their classroom operates, the scope, and sequence of information taught to their students. Students' perceptions will determine how the lessons will be received. Will the information be received to enhance their declarative and procedural knowledge or will the evidence limit the academic growth of the students Eryilmaz (2014). Students develop a perception of their teachers by analyzing personality traits, interactions, and how their teachers foster relationships. Eryilmaz (2014) states that students identify with teachers that care if they have a better academic success rate, no matter their ethnicity, conduct, or intellectual ability. A key factor for educators to help continue that internal drive is through professional training. The summer months are used every year for educators to receive new and innovative approaches to use in their classrooms to activate,



motivate, and encourage their students. Voight, Hanson, & Regional Educational Laboratory West (2017) help teachers to focus on student achievement as being their number one priority but also train teachers and other professionals the skills needed to help each students emotional, social, and substantial needs to in order to have them college and career ready. When the interaction between teacher and student is confident, students will acquire an educational experience that leads to a surge of positive emotions, resulting in success in school. Positive and negative energy affects people; however, if more educators familiarize themselves with Eryilmaz (2014) recommendations, schools will see active growth.

### **Female Readers**

According to Heinecken (2013), female readers consider the series and contextual meaning before selecting a book to interpret. For a deeper understanding, female students will examine the purpose for reading a selected text. To develop levels of comprehension and analytical skills for textual meaning; female students understand that a level of comfort will improve the reader's response. Heinecken (2013) identified the Phyllis Reynolds Naylor's "Alice" Series for a reference point to identify what engages female readers. Heinecken (2013) acknowledged with this serial publication because realistic novels assist female with recognizing their self-worth. Phyllis Reynolds Naylor's "Alice" Series establish realistic viewpoints to help female readers by making smarter choices, as life advances. Society presents both female and male readers with challenges, but reading can help each gender identify the challenges and solutions. Solutions will be present if the reader comprehends the text. Emotional realism provides

a personal connection for female readers; Heineken (2013) believed that is the reason the female reader's comprehension skills are far better than male readers. A personal connection with the text will help the reader understand the construction and the meaning of what is being read.

### **Reader's Choice**

In certain schools, the challenge with adolescent students' reading create parameters that limit the students to what they can and cannot read. Enriquez (2013) reveal the shortcomings during this educational era and the reform procedures, which limit the minds of male and female readers. Certain geographical regions across the United States have established robust instructions that narrows the literacy exploration of students. Enriquez (2013) believed that all pupils are not on the same literacy level; consequently, the schools have initiatives like one book one school, this limits the reader. Supplying developing readers with a broad array of texts that relates to their reading levels will help improve the reader's level of comprehension. As the reader improves, Enriquez (2013) thought that eliminating the restrictive values in schools will allow students to read a text of their choice, but it is required to follow the guidelines of the school's code of conduct. Schools are obligated to improve literacy, but should not place limitations on students on the topic of reading. Dutro and Selland (2012) stated that educators need to encourage students to access every vantage point as possible that will help improve test-driven reforms that states have placed on schools.

## **School Climate**

According to O'Malley, Voight, Renshaw, & Eklund (2015) school climate has been lauded as the catalyst for success through academics, relationships with parents, business partnership with local businesses, and community. In every school across America, the relationship between school and home is vital, and training educators on how to have inviting personality traits and characteristics is great to have in schools (Karwowski, Lebuda, Wisniewska, & Gralewski, 2013). Furthermore, an effective school climate is linked to academic success in math and reading on state standardized test scores (Kwong & Davis, 2015). Establishing a highly effective training environment for educators that in terms produce a decrease in negative interactions but bring about predictable positive variables, especially identified low performing or low socioeconomic schools. Schools identified as low socioeconomic schools are labeled as troubled or failing schools, but effective training and planning for educators can reverse the outcomes and perceptions of these schools (Reynolds, Lee, Turner, Bromhead, & Subasic, 2017).

## **Effective Planning**

Educators today have confidence in active learning and student engagement. “Furthermore, teachers can facilitate active learning by reflecting on how they are incorporating relevant, challenging, and integrative learning experiences and considering student needs as they implement the curriculum” (Lawrence & Jefferson, 2015). The social and academic identity is important for all educational environments. Professional Learning Communities (PLC) have redefined how teachers plan and prepare their lessons

and assessments. Effective collaboration and professional development assist teachers in planning effectively, specifically in English. Students today seem disenfranchised from old literacy practices. To engage readers, the ideal technique is to establish a broad range of literacy material for students to select from. What has hindered this process is standardized tests. Educators are challenged with identifying what students will need to know in preparation for high stakes assessment. According to DeMink-Carthew & Bishop (2017) the professional development needed to help educators deal with change is dynamic for educators. The professional development is identified in five phases: building rapport, no intimidation, anticipating issues, reflecting and analyzing, and communicating. Of these five phases, the purpose is for educators and students develop a system and cohesive partnership to forge an effective learning environment (DeMink-Carthew & Bishop, 2017).

Establishing effective planning goals for English language art teachers will help improve the literacy scores for African American, Caucasian American, and Hispanic American eighth graders. The criteria for effective planning is to first evaluate the assessment data. According to Lawrence and Jefferson (2015), the data results establishes the scope and sequence for ELA teachers. This assessment data can help identify enrichments, teaching, and re-teaching strategies that will take place throughout the year. The American Choice model can benefit all ELA teachers. It will be established that students are required to complete reader's workshops and writer's workshops that coincide with one another. In completion of each year using the American Choice model, all students should be critical readers that have a deep insight on multi-genre levels of

reading by forming meaningful information from the text (Lawrence, S. A., & Jefferson, 2015).

### **Implementation**

Implementing this project is planned for the upcoming year. The team leaders, professional learning department chair, and new teachers will be given the opportunity to use different reading strategies and other activities to help improve literacy. This preplanning will provide opportunities for teachers to bond and define the common academic language that will be spoken throughout the year; this will be systematized before the students first day. As the school year begins, the professional development sessions will have a component where teachers can critique each PD session and the opportunities to sign up for the sessions, which will occur biweekly. With providing this effective communication and positive interaction will set the standards that will drive student achievement and student motivation (Mikami, Gregory, Allen, Pianta, & Lun, 2011).

As a top priority, implementing this study creates the opportunity to address the challenge that is hindering the academic achievement of students reading scores in the North Central School District. Data will provide evidence for each middle school that has a high percentage of below basic readers; including in their definition, educators are determining the needs and trends to help re-establish the students' engagement with reading. Establishing engaging learning opportunities for eighth grade students will encourage a culture of literacy improvement. Additionally, allowing the students to implement their sense of purpose will innately create a sense of motivation and responsibility for

their own academic success. According to Pei-Wen & Der-Thanq (2011) allowing students to play an integral part of their education increases the self-efficacy of each student and the school will be rewarded by student success on the assessments.

### **Potential Resources and Existing Supports**

Completing this project requires a school that can facilitate teachers, students, and necessary data from 2013-2014. The use of computer labs and archival data is most appropriate in order to create the t-test and correlational analysis. Extra material including index cards, computer software, and retrieval activities will progress this study forward.

The library and district level literature will help improve the academic culture in the schools throughout the northcentral school district. Reading, language arts, and English teachers' past classroom data will be analyzed.

### **Potential Barriers**

Potential barriers include limited amount of resources from teachers. An additional barrier is that teachers from the selected middle schools in this study may have different reading initiatives. Gather the archival data from the two other middle schools during the window to collect research data might be challenging.

### **Proposal for Implementation and Timetable**

As soon as I can meet with the district office personnel and the district research department, a meeting was scheduled with the director of instruction and director of testing. The purpose and process of this meeting was to explain my study as well as asking for permission to access the data used to fulfill this study. This project layout will

not affect my responsibilities or my role as the eighth grade assistant principal.

Implementation for this study presents information to enhance the reading curriculum and explore the possibilities in assisting an increase in standardized reading test results.

Additionally, the data retrieved were used in the most confidential manner.

### **Roles and Responsibilities of Student and Others**

The responsibility was placed on myself. I will work with district personnel and school data clerks to access archival PASS and MAP data. Again, the data analyzed will help create t-test and correlational data, and regression analysis that will provide information to support increase in the academic achievement of students in the future.

Administrators and instructional coaches will be asked specific questions about previous PASS and MAP scores. Teachers and guidance counselors will not be used in this study.

### **Project Evaluation**

At the end of gathering data, the PASS and MAP statistics will be used to generate a correlation analysis and regression analysis for the assessments of students who take the MAP in the fall and the MAP assessment in the North Central School District. Additionally, after studying the data, the looking at the data from the spring MAP assessment will give educators an in-depth correction to if students taking the MAP in one of the semesters or both will help increase the PASS scores. The analysis of both MAP scores will help evaluators determine how the future standardized assessments results can be predicted.

## **Implications Including Social Change**

### **Local Community**

This project will affect the middle schools in the North Central School District setting by providing teachers and student's information on how to improve academic achievement and the increase reading standardized test scores. Creating an environment that inspires mandatory intensive reading stations in school for all students. The project will take place in the North Central School District in South Carolina. Identified by the theoretical framework, IRT will help extended an intensive culture for testing and will be completed using the internet, and along with providing more digital literacy alternatives for students. This project is necessary because all of the students in the North Central School District will be completing standardized testing using the computer labs or some modern day technology device in South Carolina.

### **Far-Reaching**

The main goal an educator should possess is to create best practices that will produce above national average results on standardized assessments (Zhang, Trussell, Gallegos, & Asam, 2015). Another goal is for educators to prepare students to progress to the next grade with successfully master the content that is required before promotion. Leaders in the schools are challenged with creating an atmosphere that is driven by instruction and positive citizenship. Additionally, leaders and teachers work together to fostering relationships with all stakeholders. According to Williams, Greenleaf, Albert, & Barnes (2014), empowering everyone to be resilient and bridging the gap between home and school is important. Also creating an environment where school and home can



connect by educators providing active lessons for parents and guardians on a weekly basis.

### **Conclusion**

This project has major implications on an effective procedure in increase the academic development and achievement in reading and all subjects. The primary goal is developing instructional strategies that will lead to increased results on standardized tests. A local project for the North Central School District has a concern with students scoring below state average on reading assessments. Creating courses and providing teachers with resources to help increase student performance on standardized test have driven teachers to master their teaching craft. Providing teachers with detailed data will affectively aid teachers in their approach, reaching advanced and at-risk students. Additionally, leaders and educators are informed, recognize there are external factors that hinder the academic performance of students. Creating instructional strategies and building relationships will assist in channeling the level of engagement of all students. Providing teachers with professional development and encouraging teachers to effectively plan will help bring positive data trends for each middle school. Creating this study inspire schools to develop climates of effective communication, collaboration, and instruction; that will increase academic achievement.

## Section 4: Reflections and Conclusions

### **Project Strengths and Limitations**

The problem being addressed in this study was that of students in middle schools in South Carolina are performing poorly in reading on the state assessment compared to their peers. The National Center for Education Statistics (2013) reported the national average for reading to be 268, while students in schools of South Carolina reported an average of 261. Students in the eighth-grade are struggling to meet the standards required to pass the PASS assessment.

The purpose of this study was to examine whether student performance on the MAP reading test taken in the fall will be able to predict the PASS scores of the students in the spring, in order for administrators to use this data to target student interventions. With reading support, reading interventionists will be able to extend classroom instruction and collaborate with teachers by providing a research-based reading program that will meet the needs of the identified students. This should lead to better understanding and alignment between MAP and PASS scores and will help schools, teachers, and students in preparation to perform well in the state assessment reading assignment.

### **Limitations of the Study**

This study was limited to three middle schools in a rural North Central School District in South Carolina. I used eighth-grade students who were administered both the MAP and PASS during the 2013-2014 school year. The findings are applicable only to eighth-grade students with similar demographic characteristics, achievement levels, and

learning abilities. Another limitation is the design of the study as there is no guarantee that the generalized results of the equally selected number of students from the three middle school sample apply to other students who have not met, met, or exceeded the national reading average.

The study may or may not be applicable to other locations with different demographics and different academic characteristics. Generalizations of results to other states should be understood in the context of the composition of the assessment scores among students. The study is further limited, the study focuses on verifying whether MAP assessment scores in the eighth grade are predictive of PASS assessment scores in the following spring. The outcome would therefore be to use the analytics of these assessments to enhance reading abilities through successfully addressing problem areas before these students undertake the PASS assessments. However, if the problem is already prevalent in the eighth grade, it means that the problem has been present before the eighth grade. This study is limited in that it only focuses on fixing the problem in the moment for students to fare better in their PASS assessments.

### **Interpreting the strengths/findings**

The MAP and PASS data strengthens the IRT as a framework for the study that improves the measuring accuracy and reliability of the results in similar fashion to the study conducted by Hambleton et al. 2013; Lord, 1980; Makransky et al. 2016, who found that they achieved this by applying IRT to Scholastic Aptitude Test (SAT) and Graduate Record Examination (GRE).

**IRT framework description.** The framework of this study was the IRT which is linked to this educational setting. IRT is a pedagogical approach that is also known as the strong test theory and latent theory. IRT is a theory of testing that is based on the relationship between the individual performances along a test item and the test takers' levels of functioning along an overall measure of the ability that item was designed to assess (Hambleton & Swaminathan, 2013; Lord, 1980; Makransky et al., 2016). This framework can be implemented in a computer lab or classroom environments that take place synchronously or asynchronously, which coincides with the manner in which the MAP and PASS assessment data used for the research questions was acquired. Using the IRT as the basis of analysis can also help in improving the MAP and PASS assessments and consequently enhance and improve student performance as the MAP and PASS scores discussed in the research questions are related to the IRT theory.

**Integrating the framework.** The research I conducted indicated that there was a clear correlation between MAP assessment scores and PASS assessment scores. Across the range from fall 2012 – spring 2014 the results were true to the hypothesis that MAP assessments are a good predictor of PASS assessment results. Applying this knowledge, I can see that this thinking correlates with a study conducted by Costly (2012), which encouraged educators to reassess and evolve their instructional strategies in order to challenge and motivate middle school eighth grade students who are struggling academically. If the IRT model was used to model the MAP test it could help educators address reading deficiencies and prepare students better for standardized testing through environmental repetition.

Results from research questions one indicated that fall 2012 MAP scores predicted the 2013 spring PASS scores, which would allow for student intervention where necessary. I expect that better preparation done for MAP will lead to students demonstrating increased personal confidence which may lead to greater success on the PASS exam (Costly, 2012). The research question data displays these tests were conducted on modern day technological devices. While the tests were being given using a technology device, the teachers identified certain student's reading deficiency after looking at the data. The data from the MAP developed through IRT is expected to provide a better benchmark to assist in the preparation of students for PASS in the spring (Costly, 2012).

The National Center for Education Statistics (2013) indicated a below national reading average for students in the South Carolina school district. McDonnell & Weatherford, 2013; Stillwell & Sable, 2013) also found this to be true as schools across South Carolina have been on a steady and continuous decline with regard to subject matter standardized test scores. The research I conducted indicated that a continuous decline in results was true as the results indicated from fall 2012 – fall 2013. In addition, there was roughly a 1% decline in results on the MAP assessment, and about a 1% decline in the PASS assessment scores between spring 2013 and spring 2014. McDonnell & Weatherford, 2013; Stillwell & Sable, 2013 conducted a non-experimental study by assessing the effects of exposure to the MAP assessment and the results from the PASS assessment on the students' critical thinking, interpretation, and composure in general educational classrooms. The study I conducted reviews the reading levels and

MAP scores on the concept of comprehension, writing, critical reasoning and advanced literacy skills to help the student prepare for PASS.

Duesbery and Justice (2015) believed that at the start and conclusion of the semester, teachers should be giving students pre- and post-measured assessments. Indicative of these findings it was seen in research question three that a significant relationship between the student's fall 2013 MAP assessment and spring 2014 PASS assessment scores was found. This would allow for time during the semester for student intervention to address any issues.

Research question one confirmed my study by indicating that the MAP assessments conducted in the fall and PASS assessments in the spring shared a direct and strong correlation in the MAP assessment predicting the PASS assessment results. Duesbery and Justice (2015) found the examination of syntactic reading fluency and a curriculum-based measure of the composition will help teachers make educated judgments on future performance in literacy development.

The importance to understand the differences between electronic reading assessments (ERA) and printed reading assessments (PRA). The process in understanding comprehension levels of students whilst students are also utilizing strategies to help think and navigate for themselves requires a different set of skills when comparing ERA to PRA. My research question set out to show the benefit to conducting electronic reading assessments as the data acquired regarding student reading levels from the MAP. Continuing with my research question, assessments could be used for student interventions, and assist in predicting PASS assessment scores in the spring. Wu (2014)

used participants from 19 of the PISA countries. Metacognitive strategies was used by teachers to prepare the students for the ERA or PRA with the goal of enhancing the learning experience. Wu (2014) stated that teachers' focused on reading strategies that involved planning, monitoring key terms, rereading, evaluating and correcting while taking the assessments.

Being in a technologically driven society, educators have labelled modern day technology as problematic or a device to help keep students engaged through the use of applications, web-based practice assessments, and websites with regards to meeting the academic essentials of diverse learners (Kimmons, 2014). The strong correlation between the MAP and PASS assessment scores allows teachers to predict and assist students in preparation for the PASS assessment in the fall. Wu 2014 found that these new technologies have integrated into schools and have amplified the interest level amongst teachers and students in regard to taking formative or high stakes tests online. MAP data will be beneficial to teachers for developing activities involving constant decision making and monitoring which resemble serious reading tasks and will be beneficial to reading comprehension for students. From the two assessments, the results provided data evaluations for educators with the initiative to phase in activities that will improve eighth grade students' literacy knowledge, literacy skill sets, attitude and their attraction to reading.

### **Implications Including Social Change**

**Local Community.** This project will affect middle schools in the North Central School District by providing teachers and students with information regarding how to

improve academic achievement and increase reading standardized test scores. The project will take place in North Central School District in South Carolina. All students in the North Central School District will be completing standardized testing using the computer labs or some form of modern day technology.

**Far-Reaching.** Educators should strive to create best practices that produce above national average results on standardized assessments (Zhang et al. 2015). Educators should prepare students to progress to the next grade with successfully mastery of the content. Leaders in the schools are challenged with creating an atmosphere that is driven by instruction and positive citizenship (Eryilmaz, 2014). Leaders and teachers work together to foster relationships with all stakeholders like administration, parents/guardians, teachers, and counselors. According to Williams, Greenleaf, Albert, and Barnes (2014), empowering everyone to be resilient and bridging the gap between home and school is important. Also creating an environment where school and home can connect with educators providing active lessons for parents and guardians on a weekly basis.

This project has major implications for an effective procedural increase in academic development and achievement in reading as well as a host of other subjects. The primary goal is to develop instructional strategies that will lead to an increase in the results on standardized tests.

The literacy issue in the North Central School District is that students are scoring below the state average on reading assessments. Creating courses and providing teachers with the resources needed to increase student performance on standardized testing has



driven teachers to master their teaching craft (Ciullo, et al. 2016). Providing teachers with detailed data will effectively aid teachers in their approach, assisting advanced students and at-risk students more effectively. The execution will assist leaders and educators who are now informed, and help them recognize that there are external factors that hinder the academic performance of students. Providing teachers with professional development and encouraging teachers to effectively plan will help bring positive data trends to each middle school.

**Methodological and theoretical implications.** With the change in technological advancements, having students partake periodically in the MAP assessment forces institutions to make investments in computers and/or modern technological devices. First-hand initiatives allow students to take the computer-adaptive assessments up to two times a year and gives teachers access to MAP resources whereby they can use the data to assist students in need and take intervening action. Both teachers and students will need to adapt and become accustomed to newer standards of learning.

**Implications of the findings.** The findings in the research can be seen relevant that student interventions and the MAP test is essential for helping increase success on the PASS. The findings from my research in Section 2 also coincide with my research displayed in Section 3 and seem to be in line with those findings. The MAP assessments go hand-in-hand with the IRT model and both educational institutions and students will greatly benefit from the implementation of both.

This study highlighted the importance of additional assessments and the study results indicated that reading comprehension is a problem throughout all educational

institutions. This poses the question as to why more schools have yet to adopt MAP assessments in preparation for the PASS assessment.

The data collected from this research project would be of great interest to educational institutions, administrators and state boards of education as it provides vital insight into a pertinent issue arising amongst young adolescent students.

### **Recommendation for Future Research**

Firstly, since the study's main outcome is to assist teachers in improving problem areas for eighth graders, one has to wonder whether enough time is allowed for this to occur. The study only focuses on MAP assessment scores done in the fall to predict PASS scores in the spring of the same year, this leaves only a limited amount of time for educators to assess the scores and analyze the data in order to assist with problem areas. Recommended research would be to assess whether this is in fact enough time to correct the underlying problems that these eighth graders are faced with. In order for the findings to be a true reflection of the situation, research should begin by assessing MAP scores in the fall, analyzing data in giving recommendations to teachers in order for them to change shortcomings and focus on problem areas, and then assessing the PASS scores of these students again in the spring, in order to verify whether enough time was allowed for any changes to occur and whether there was any improvement.

Secondly, further studies should include re-testing these same students after a year in order to assess whether the improvements done in the previous year, were lasting. Thirdly, the study focuses only on selected eighth graders from three middle schools in rural North Central School District in South Carolina. Further studies should be

conducted in other areas of the state and also the country to assess whether the same results are achieved. If a greater demographic area is used it will provide a much greater scope and sample size of the relevant educational standard levels and provide more concise data when making more impactful decisions regarding implementation of educational interventions. The same theoretical framework should be used in order to get a consistent result. Samples from three middle schools in a particular area should be used.

A fourth recommendation would be to assess whether the results obtained in this current studies are congruent with students from different background. As the current study utilizes only eighth graders from the same background, these tests could be done to assess whether students of the same age group but from a variety of cultures, races and socioeconomic backgrounds deliver the same results, in that their fall MAP scores are predictive of what their PASS scores in the spring of the same year, would be. Although there might not be as prevalent a problem in similar aged students from other socioeconomic, races and cultures, this would be necessary to prove the study accurate in its findings. A reiteration on expanding the demographic for this study would incorporate more opportunity for this.

A fifth recommendation would be to explore whether waiting for the eighth grade to intervene and properly assess problematic areas in reading for middle school students, is perhaps too late. The problem statement and the background to this study was that students in middle schools in South Carolina are performing poorly in reading on the state assessment. A further study should be conducted, similarly to the current study, but

which focuses on earlier grades in order to intervene sooner. If intervention takes place in even younger years of the adolescent, future problems may be addressed long before they even arise in the student. A sixth recommendation would be to conduct research into what steps are taken in these very same middle schools across rural South Carolina to get pupils on the satisfactory reading level and why these steps, if any, are not successful. The problem runs deeper than the current study and therefore research should be conducted to address the problem prior to the eighth grade.

### **Conclusion**

The findings from the study have indicated, whilst on a small scale, that the effectiveness of eighth grade students taking the Measurement of Academic Progress (MAP) assessments in the spring prior to them taking the Palmetto Assessment of State Standards (PASS) in the fall, is a good indicator for student mark expectations. The findings used for the study also showed that the linear relationship between eighth grade students' MAP and PASS scores correlated and linear regressions gave a consistent result when comparing the MAP and PASS scores. The MAP scores predicted the PASS scores extremely well, with each set of MAP scores explaining over 50% of the variance in the corresponding PASS scores. As per each of the researcher's hypotheses, these scores were significantly related and showed that the predictability in the study of MAP data will be most beneficial for students, teachers and administrators in addressing problems and intervening where needed in order to ensure greater success in the fall when PASS assessments are taken. With previous research being carried out in the past regarding the influence of MAP assessment data on PASS assessment score predictions it was expected

that the findings would yield similar results in proving their correlation to each other.

The findings should yield a greater awareness of the issue which is prevalent in not only schools in North Central School District in South Carolina but also a potential issue in schools across the country. Addressing the issue head on with interventions such as the Measurement of Academic Progress (MAP) assessment is becoming more and more evident and required as technology and the way students engage with educators is evolving at a rapid rate. It is hoped in conclusion of this study that this study will extend the knowledge on the subject and reach educational institutions and bring light to the subject so that action can be taken in improving the education of our young students.

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The *Publication Manual of the American Psychological Association, 6th Edition*, Chapter 7, includes numerous examples of reference list entries. For more information on references or APA style, consult the [APA website](#) or the Walden [Writing Center website](#).

## Appendix A: The Project

Insert appendix content here. Appendices are labeled with letters rather than numbers.

The appendices must adhere to the same margin specifications as the body of the project study. Photocopied or previously printed material may have to be shifted on the page or reduced in size to fit within the area bounded by the margins.

## Appendix B: Title of Appendix

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If the only thing in an appendix is a table, the table title serves as the title of the appendix; no label is needed for the table itself. If you have text in addition to a table or tables in an appendix, label the table with the letter of the appendix (e.g., Table A1, Table A2, Table B1, and so on). These tables would be listed in the List of Tables at the end of the Table of Contents.

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