USING EIGHTH GRADE GEORGIA CRITERION-REFERENCED COMPETENCY TESTS TO PREDICT STUDENT ACHIEVEMENT ON THE GEORGIA END OF COURSE TESTS

by

Janice Marie Darnell
Liberty University

A Dissertation Presented in Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

Liberty University
June 19, 2012

USING EIGHTH GRADE GEORGIA CRITERION-REFERENCED COMPETENCY TESTS TO PREDICT STUDENT ACHIEVEMENT ON THE GEORGIA END OF COURSE TESTS

by

Janice Marie Darnell

A Dissertation Presented in Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

Liberty University, Lynchburg, VA

June 19, 2012

APPROVED BY:

RICK BRAGG, Ed.D., Committee Chair

Lisa W. Schlabra, Ed.D., Committee Member

Yolanda Trahan-Dikowski, Ed.D., Committee Member

Scott B. Watson, Ph. D., Associate Dean, Advanced Programs

ABSTRACT

Janice S. Darnell. USING EIGHTH GRADE GEORGIA CRITERION-REFERENCED COMPETENCY TESTS TO PREDICT STUDENT ACHIEVEMENT ON THE GEORGIA END OF COURSE TESTS. (under the direction of Dr. Rick Bragg) School of Education, Liberty University, June 19, 2012.

The purpose of this correlational study was to examine Georgia's Criterion-Referenced Competency Test (CRCT) scores of 8th grade students and End of Course Test (EOCT) scores of the same students as 9th graders in the areas of language arts and mathematics to test the theory that a relationship exists between the two tests. The study also examined the 8th grade CRCT scores as being predictors of the 9th grade EOCT scores. Three cycles, or classes, of 8th grade CRCT scores and corresponding EOCT scores were used. The study used data from a small semi-rural school district in northeast Georgia. The findings indicate that there is a strong relationship between the 8th grade CRCTs and the 9th grade EOCTs. Further, the CRCTs may be used as a predictor for the EOCT.

DEDICATION

I dedicate this work to my Lord and Savior Jesus Christ. Without Him, I could do nothing and with Him I can do anything. His grace has sustained me through this process and His love has provided me with surprises I never expected. God is so good!

Lord, how are they increased that trouble me! Many are they that rise up against me. Many there be which say of my soul, There is no help for him in God. Selah. But thou, O Lord, art a shield for me; my glory, and the lifter up of mine head. I cried unto the Lord with my voice, and he heard me out of his holy hill. Selah. I laid me down and slept; I awaked; for the Lord sustained me. Psalm 3: 1 – 5 (KJV)

ACKNOWLEDGEMENTS

Thank you to the participating school district, faculty and staff of Liberty University, my committee members, and my committee chair. Your help with this research is greatly appreciated and it is my hope that it will be beneficial to teachers and students.

Thank you Dr. Scott Watson for your patience and most helpful feedback. Also, a special thank you to Kirsten Hoegh who came to my rescue and helped me see this process through to completion.

A thank you straight from my heart goes to my family, dear friends, and church family who have prayed and supported me through this entire process. Without you, I would not have had the courage to even begin this work. I love you all!

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE: INTRODUCTION

Background

Public school systems across the United States were plunged into the era of accountability via a data yielding assessment driven process when the *No Child Left Behind Act of 2001 (NCLB)* was signed into law. The purpose of the law was to increase the accountability level of schools by making sure students are meeting the minimum proficiency performance on state standards at each grade level, regardless of their gender, race, economic status, or special needs. NCLB stated that by the year 2014, 100% of all students, and all students within each sub-category, would meet or exceed the minimum state standard proficiency requirements.

To monitor the progress of schools as they worked toward meeting the 100% proficiency NCLB requirement, annual measurement goals were established in the areas of language arts, mathematics, and high school graduation rate. If a school met the annual measurable goals, it would be identified as making adequate yearly progress (AYP) toward the 100% proficiency. Consequences were established for those schools not making AYP for two or more consecutive years. Those consequences could possibly increase to the level of total school reform, including the replacement of the current governing board of the school. Thus, schools and school systems have been highly motivated to work diligently toward making AYP each year.

NCLB required each state to implement an assessment system to measure student and school performance. In Georgia, the Criterion-Referenced Competency Test (CRCT) was determined to be the assessment measure for grades one through eight. Most recently, the state has administered the assessment in grades three through eight only.

Annual standardized assessments in grades one and two have been eliminated by the state due to financial limitations in funding at the state level.

The Georgia High School Graduation Test (GHSGT) was determined to be the assessment measure at the high school level. In March of 2011, the Georgia State Board of Education made the decision to replace the GHSGT with the End of Course Tests (EOCT) to be used in tandem with academic course work as the state accountability measure for high schools and for students to meet graduation requirements. The student would have to take and successfully pass an EOCT in each academic content area. Some students may meet all of these requirements by the end of the 11th grade, while others may not. Both the CRCT and EOCT are criterion-based measures, which means the assessment questions are designed to measure student progress toward mastery of the Georgia Performance Standards (GPS) in each academic content area.

Recognizing the importance of student performance in the 8th through 12th grades, as the key preparation years for students toward post-secondary education, schools must make use of all available data. It is necessary for schools to implement appropriate interventions and instructional strategies as middle school students prepare for and enter high school so they may pass the EOCTs, meet course requirements, and graduate from high school on time.

Schools receive summary and disaggregated data results of these formal standardized assessments. This information is used to set school and individual student improvement goals, which guides the work within the school. With the new graduation requirements in place, it will be critical for schools to change their intervention strategies

from a focus on the previous cumulative 11th grade exam, the GHSGT, to a greater focus on the end of course tests as soon as students arrive to the high school as 9th graders.

Many times there are students whose assessment scores place them into a category where they are referred to as "bubble students". These students are those who are very close to meeting proficiency levels on the assessment or who barely met the proficiency level. Had the student bubbled in one or two more answers correctly he may have received a passing score. Likewise, had he bubbled in one or two more answers incorrectly, he may have received a passing score. Instructional interventions are quite difficult to plan for this specific group of students. Because they are on the borderline of pass/fail, it is often difficult to identify the specific area(s) of weakness. These students do not consistently demonstrate learning difficulties.

Although school administrators and teachers notice trends in student data and make their own predictions about student performance based on previous experience in working with students in this bubble, or borderline category, having solid prediction data would open a new avenue for helping students achieve success. The data could help teachers better determine how to design and use formative assessments in preparation for the EOCT. The key is planning and using formative assessments that will provide the teacher with standard-specific data in regard to what the student has mastered. This information is critical in assisting the teacher with plans of what to do next instructionally. Clear and focused formative assessments where the student knows the target ahead of time could be expected to "raise the typical achievement outcome 0.9 standard deviation" units. (Fuchs & Fuchs, 1986, p. 205).

Problem Statement

The increase in accountability has heightened the stress experienced by students, parents, teachers, and administrators. Spring standardized tests drive the work of the school throughout the entire school year. Accountability standards have forced schools to review any and all data available more than ever before. The key for effectiveness, though, is not found in the review of the data, but in the use of it. Data used as a tool to guide instruction can be very valuable to students, teachers, and schools. Understanding the data results and the implications thereof serves as the impetus for increased differentiation of instructional activities, formative assessments, and quality feedback.

Purpose Statement

The purpose of this quantitative correlational study is twofold. First, the study will determine if a relationship exists between the 8th grade student scores on the CRCT in the areas of language arts and mathematics and the scores on the Ninth Grade Literature and Math I EOCTs for the same students. Secondly, if a relationship does exist between the CRCTs and the EOCTs, the study will determine if the 8th grade student scores on the CRCT in the areas of language arts and mathematics are predictors of student scores on the Ninth Grade Literature and Math I EOCTs, the EOCTs that students first take when they move on to the high school level as 9th grade students.

Significance of the Study

If the CRCT scores are found to be strong predictors of EOCT scores, there will be immediate data to use for instructional intervention and planning opportunities at the high school level. Decisions about appropriate instructional interventions may be made based solely upon the CRCT scores. This eliminates using the first half of the grading

period as a time of observation and monitoring student progress before identifying that a student may need to be served through the Response to Intervention (RTI) process. Having solid predictive data prior to the start of school, interventions may be implemented and measured from the first day of instruction and the student should be able experience academic growth and success. Through the RTI process, there will be team planning and data collection for the alternative instructional strategies and assessment methods with individual ninth and tenth grade students to prepare them for the next high-stakes test.

However, should it be determined that a relationship does not exist between the CRCT and EOCT such that the CRCT scores are not strong predictors of student EOCT scores, it will be imperative that the school use a series of multiple criteria to make decisions in regard to the scheduling of students and the interventions they may receive. To use one set of data as determining factors for immediate scheduling and support services is fast and easier to accommodate than multiple data pieces. However, if the one set of data will not provide the information to make effective instructional decisions, and then other multiple data points must be considered (Shriberg, 2006). Multiple data must be used to monitor the student's progress to aide in the required scheduling and support decisions.

Through a multiple criteria selection, additional opportunities to measure student progress on the state standards would have to be provided. The student may take the state online benchmark assessments through the Georgia Online Assessment System (OAS) prior to the end of each grading period, especially in the 8th grade. Effective formative assessments, though, would provide immediate and continuous information

about student understanding so instruction could be modified quickly and throughout the year. Effective summative assessments would provide cumulative information in regard to the student's mastery of standards. The student specific information could be used to help students set goals that would affect their future performance on the EOCT. Learners who succeed set personal learning goals and self-assess their work. Teachers may help to emphasize this practice by modeling self-assessment, requiring the student to set goals, and then hold the students to the expectation of practicing these habits regularly (McTighe, 2006).

These criteria, and more, could be used during end of year progress meetings with the results discussed through vertical teaming sessions with teachers and administrators at the high school. In preparation for the new 9th grade class, the high school might also be able to offer additional or alternative support classes, remediation, or enrichment opportunities during the school day, as well as before or after school.

Although NCLB has expired, Georgia and other states are diligently working toward the implementation of common core standards and a nation-wide assessment to meet accountability requirements under the guidelines of the Elementary and Secondary Education Act (ESEA). Flexibility has been given to Georgia beginning with the 2011 – 2012 school year and continuing through the next three school years in determining how to measure student, school, and school district progress. The new College and Careers Ready Performance Index (CCRPI) will replace AYP; however, both the CRCT and EOCT will continue to be the required state standardized assessments used in measuring accountability.

Students who enter 9th grade for the first time on or after July 1, 2011 will no longer have to take and pass the Georgia High School Graduation Test (GHSGT) or the End-of-Course Test (EOCT) in all content areas in order to meet graduation requirements. The new Georgia rule for this group of students, states that the EOCT will now count as 20% of the final grade for each EOCT course. As students will still be required to meet the set number of credit hours in all academic content areas, student achievement on the EOCT continues to be of great importance for Georgia high school students.

Research Questions

The research questions guiding the work of this study are as follows:

Research Question 1: Is there a relationship between the 8th grade CRCT scores on the language arts section and EOCT scores in the same academic areas?

Research Question 2: Is there a relationship between the 8th grade CRCT scores on the mathematics section and EOCT scores in the same academic areas?

Research Question 3: If a relationship exists with the CRCT and the EOCT in the area of language arts, is the relationship strong enough that one may be used as a predictor of the other?

Research Question 4: If a relationship exists with the CRCT and the EOCT in the area of mathematics, is the relationship strong enough that one may be used as a predictor of the other?

Research Hypotheses

The following null hypotheses will guide the work to make the determination if an accurate prediction exists between these sets of student scores:

H_{01}: There is no relationship between the 8th Grade CRCT scores and the EOCT scores in the area of language arts.

H_{02}: There is no relationship between the 8th Grade CRCT scores and the EOCT scores in the area of mathematics.

H_{03}: The 8th Grade CRCT language arts scores do not significantly predict student achievement on the EOCT in the area of language arts.

H_{04}: The 8th Grade CRCT math scores do not significantly predict student achievement on the EOCT in the area of mathematics.

Identification of Variables

The independent variables of this study will be the 8th grade student scores for the CRCT in the areas of language arts and mathematics. The scores to be used for the CRCT will be the scale scores. A scale score below 800 indicates the student did not score at the minimum level of proficiency. Scale scores of 800 or greater indicate the student met the minimum proficiency level. Scale scores of 850 or greater indicate the student exceeded the minimum proficiency level.

The dependent variables for the study will be the EOCT student scores in the areas of language arts and mathematics. Specifically, the Ninth Grade Literature EOCT and the Math I EOCT as these are the required language arts and mathematics standardized assessments for 9th graders. The scores to be used for the EOCT will be the grade conversion scores. A conversion score below 70 indicates the student did not score

at the minimum level of proficiency. Conversion scores of 70 or greater indicate the student met or exceeded the minimum proficiency levels. A conversion score of 90 or greater indicates the student exceeded the minimum level of proficiency.

Assumptions and Limitations

Assumptions.

It is assumed that a relationship will be found between the CRCT and EOCT because the Georgia Performance Standards (GPS) is a vertically aligned curriculum model. This curriculum is used in all Georgia public schools, which makes it possible to review and compare school and district scores to the overall state scores. It is further assumed that both the CRCT and EOCT have been tested for reliability and validity through a process that has been described by the Georgia Department of Education Office of Accountability. It is uncertain if the relationship between the two assessments will be strong. It is also uncertain if either the CRCT in language arts or mathematics may be used as predictor of the EOCT in the same academic content areas.

Limitations.

There will be approximately six hundred students in the sample for language arts and approximately six hundred students in the sample for mathematics. The language arts and mathematics samples may or may not include the same students. Although the sample size is large, it is limited because the sample represents three cycles, or classes, of students. The sample is limited to these three cycles due to the implementation schedule of the Georgia Performance Standards (GPS) curriculum.

It is important to ensure that the students in this sample will have had the GPS curriculum in both language arts and mathematics beginning in the 6th grade and

continuing into high school. Students in prior classes would have had mathematics instruction under split curricular models. They would have had either all mathematics instruction under the Quality Core Curriculum (QCC) model or possibly a split curriculum model. Students in a split curriculum model would have had some mathematics instruction under the QCC and some under the GPS. Students in this category would likely be students who had previously been retained in a grade. Summer administrations of CRCTs and EOCTs were not used in this study as those test scores would be retests, or second time test takers.

Another limitation is that the results of this correlational study may not be inferred as a causation study. Should the data indicate that a relationship exists between CRCT and EOCT scores, this study will not imply that scores on the first assessment cause the scores on the second assessment.

Table 1 shows the implementation schedule for testing as the classes of students transitioned from the QCC to the GPS. It should be noted that although students took the Math I EOCT during the 2008 – 2009 school year, those scores were not used. The Georgia Department of Education made the decision to dismiss those scores. It was the first administration of the new math curriculum test at the high school level and it is speculated that the results were not favorable. Neither the school district nor the student received any performance information about the Math I test for that school year.

Table 1

Test Administration Schedule as Georgia Transitioned from QCC to GPS.

	CRCT – ELA	9th Grade Lit	CRCT – MA	Math I
Spring 2008	GPS	GPS	GPS	N/A
Winter 2008	GPS	GPS	GPS	GPS (No Score)
Spring 2009	GPS	GPS	GPS	GPS (No Score)
Winter 2009	GPS	GPS	GPS	GPS
Spring 2010	GPS	GPS	GPS	GPS
Winter 2010	GPS	GPS	GPS	GPS
Spring 2011	GPS	GPS	GPS	GPS
Winter 2011	GPS	GPS	GPS	GPS

Research Plan

This study will be conducted upon obtaining all required permissions from the Department of Education at Liberty University, its Internal Review Board, and the Local Educational Agency School Superintendent. The student test scores will be obtained through the Director of Student Support's office and placed into a spreadsheet for sorting and descriptive statistical calculations. Initially, the student state testing number will be used as the common variable for merging the scores together into one document. Once merged, the student test numbers will be assigned alternative numbers for organizational purposes. This will eliminate any identification connections between the student and his or her individual test scores (Appendices A and B).

Next, correlational tests will be conducted using the student test score data set. The Pearson's Correlation Coefficient will be used to determine if a relationship exists between the sets of data. A linear regression test will be used to determine the predictability of the data. The researcher will conduct the correlational tests for the study and determine the results. The formulas for the statistical tests will be entered into the spreadsheet for calculation.

Because the researcher is not a statistician, an expert statistician will verify the correlational calculations and results of the researcher. The expert statistician will conduct the linear regression test and assist the researcher with the interpretation of those results. The researcher understands that accurate statistical calculations are required for the study to have strength and merit.

Definition of Key Terms

Terms, and their respective abbreviations, that will appear throughout this study are defined as follows:

AMO – Annual Measurable Objective. The proficiency level standard that students must meet or exceed to demonstrate and be designated as making Adequate Yearly Progress.

AYP – Adequate Yearly Progress. AYP is the progress-monitoring unit established by the *No Child Left Behind Act*.

Bubble Students – Students whose test scores are just above, below, or at the minimum proficiency level score on high-stakes tests. One or two more "bubbles" on the answer document either correct or incorrect could change the score from pass to fail or vice versa.

CCGPS – Common Core Georgia Performance Standards. This is the new curriculum model of performance standards that will begin implementation in Georgia beginning with the 2012 – 2013 school year.

CCRPI – The College and Careers Ready Performance Index. This is Georgia's new ESEA flexibility waiver measure to support comprehensive school improvement and accountability.

CRCT – The Georgia Criterion-Referenced Competency Test. This is the required standardized assessment used in Georgia to measure student performance in grades three through eight in the areas of reading, language arts, mathematics, science and social studies.

EOCT – The Georgia End of Course Test. This is the newly required standardized assessment used in Georgia to measure student performance in select academic classes. Although the EOCT has been in place for several years, it will become the new benchmark assessment that must be met in order to meet eligibility requirements for graduation beginning with the 2011 – 2012 school year. The EOCT is administered in the content areas of Ninth Grade Literature, American Literature, Math I, Math II, Biology, Physics, U.S. History, and Economics.

ESEA – The Elementary and Secondary Education Act of 1965. This is the federal legislation with emphasis placed on equal access to education and high performance standards and accountability.

GHSGT – Georgia High School Graduation Test. This is the former standardized assessment used for AYP accountability purposes in Georgia at the high school level. The test was administered to students for the first time during the spring of the eleventh

grade year. The test was a cumulative measure of standards studied in the areas of language arts, mathematics, social studies, and science.

GPS – Georgia Performance Standards. This is the curriculum model that was implemented in Georgia with the authorization of *No Child Left Behind*. It was implemented in phases by content area and grade level. The first phase of implementation began in 2002.

High Stakes Tests – Tests that have major consequences on the basis of the outcome. In education, high stakes tests are accountability measures used to determine the performance status of schools and school districts. With students, the results may mean promotion on to the next grade level or not.

IDEA – Individuals with Disabilities Education Act. This is a United States federal law that mandates how states will provide early intervention, special education, and other related services to students with disabilities.

IEP – Individual Education Plan. Mandated by the federal Individuals with Disabilities Education Act, this plan outlines the instructional strategies and assessment goals for a student with disabilities.

NI – Needs Improvement. This is the term used to designate a school that has not met Adequate Yearly Progress for two or more consecutive years.

NCLB – The *No Child Left Behind Act* of 2001. This is the federal legislative requirement that all schools should have 100% of its students meeting or exceeding proficiency requirements on state standards by the year 2014.

PARCC – Partnership for Assessment of Readiness for Colleges and Careers. The national achievement assessment that will be implemented in the spring of 2015.

QCC – Quality Core Curriculum. This is the curriculum model that was in place for Georgia prior to the implementation of NCLB. In this model, the curriculum was comprised of objectives rather than performance standards.

RTI – Response to Intervention. A process by which a diagnostic assessment is administered to a student and interventions implemented with results recorded to determine the most appropriate intervention to ensure student success.

SWD – Students With Disabilities. These are students who have been identified as eligible for special education services under the Individuals with Disabilities Education Act (IDEA).

SMART – Specific-Measureable-Attainable-Relevant-Timely. The terms associated with the qualities that must be present when a school or school district writes goals. The goal(s) must be specific as to what the end target is, measureable as to allow for monitoring of progress, attainable as to be something that is realistic, relevant in regard to the need of the school, and timely in regard to the amount of time needed to attain the goal.

CHAPTER TWO: LITERATURE REVIEW

Introduction

The research topic of high-stakes testing and accountability is one of great debate among educators at all levels. There are various studies in the areas of test taking skills, the importance of passing the test, and the effects of high stakes testing on schools and students. With such great emphasis on high-stakes testing and accountability, schools seek to learn more about how to better use the results of high-stakes tests. This study will provide information that will be very valuable to middle and high school teachers and school administrators in Georgia.

In Georgia, the Criterion Referenced Competency Test (CRCT) is the high-stakes test used as the required accountability measure for grades 1 through 8. Most recently, grades 1 and 2 have been exempted from the CRCT administration due to budgetary constraints at the state level. The CRCT is administered in the spring of the school year after most every performance standard has been taught. The CRCT is comprised of separate assessments in the following five academic content areas:

1) Reading
2) Language Arts
3) Mathematics
4) Science
5) Social Studies

The End-of-Course Test (EOCT) is the required accountability measure for high school students. It is administered at the completion of two different courses in each academic content area. The most common administration schedule for EOCTs is as

follows:

1) Mathematics
    a. Math I – 9th grade
    b. Math II – 10th grade
2) Language Arts
    a. Ninth Grade Literature – 9th grade
    b. American Literature – 11th grade
3) Science
    a. Physics – 9th grade
    b. Biology – 10th grade
4) Social Studies
    a. U.S. History – 11th grade
    b. Economics – 12th grade

For schools to have confirmation that the CRCT for 8th graders in the areas of language arts and mathematics is an authenticated predictive value of student performance on the 9th grade End-of-Course Test (EOCT) in the same content areas would enable schools to better prepare instructionally and to remediate students accordingly. Although the CRCTs and EOCTs have been examined for reliability and validity by the state department of education, to have additional data supporting the predictability of performance on the EOCT from performance on the CRCT would add a level of authenticity from the student, teacher, and administrator perspective. Knowing that performance on one assessment will provide information about how to plan and remediate for the next high-stakes test is both powerful and reassuring.

Conceptual or Theoretical Framework

The guiding theory of this study is that a relationship exists between the state required standardized 8th grade CRCT and 9th grade EOCT assessments in the content areas of language arts and mathematics, which are administered annually. Both assessments are based on and developed around the Georgia Performance Standards (GPS), which is the state curriculum model. The GPS is a vertically aligned curriculum. If the curriculum is truly vertical and the assessments are based on the curriculum, then it should follow that a relationship will exist between performance on one assessment and the other.

Further, it is expected that a relationship will exist such that the CRCT student assessment results may be used as predictors of student performance on the EOCT in the same content area. Either a discovery of predictability or no predictability among both or just one content area score will be valuable information to middle and high school teachers and administrators in Georgia. School systems will have support, or lack of support, for the great emphasis that is currently placed on the 8th grade CRCT and use of that assessment information in preparation for providing instructional intervention strategies, appropriate course scheduling, curriculum pacing, and student support.

Review of the Literature

The Test.

A 1983 publication called *A Nation at Risk* provided the impetus for the standardized high-stakes testing movement. In this report, the American public was presented with information that its students were not performing as well as students in foreign competitor nations in the areas of language arts and mathematics. This report

initiated the work of states developing their own standards and developing a standardized assessment program to measure student progress in meeting those standards (Vyrostek, 2009).

With the authorization of *No Child Left Behind* (NCLB) in 2001, states were allowed to develop their own curriculum standards, assessments, and Adequate Yearly Progress (AYP) performance targets with approval from the United States Department of Education (USEd) ("No child left," n.d.). With the increase in accountability, schools not meeting AYP performance targets were faced with consequences that would increase in levels of severity with every subsequent year of not meeting AYP. A school not meeting AYP for two consecutive years would have to make the option of school choice available to parents. School choice gives parents the right to transfer their child to another school within the system that is meeting AYP performance targets. If there is not another school within the system at the same grade span grouping that is meeting the AYP performance target or perhaps the failing school is the only school in the system at that grade span grouping, then the school district must make substantial effort to try and partner with a neighboring school system to make the choice option available.

If a school did not meet AYP requirements at the end of a third year, this would mean the school would have to also offer Supplemental Educational Services (SES) to its students, in addition to school choice. SES consists of an after-school tutoring program made available to students through the use of a state approved tutorial service (Vyrostek, 2009). For schools required to offer SES, the schools must allow the tutorial service vendor to have space in the school building to provide the tutorial service or the district would have to provide transportation of the student(s) to the service provider.

The consequences for schools not meeting AYP continue to increase in severity for every additional year of not meeting AYP. In addition to school choice and SES, the school must submit a school improvement plan for corrective action. The school could experience replacement of staff members who have demonstrated their performance has contributed to the school not meeting AYP. Outside experts may be brought in as consultants to work with the school and the consequences continue until the point of total school reform.

With high stakes testing having the potential to set the stage for in depth school improvement initiatives and or complete school reform and restructuring, it was essential for states to ensure that their accountability instruments being used were reliable and valid.

Plake (2002) identifies six areas as quality criteria for evaluating the technical quality of a high-stakes test.

a) Alignment to test specifications - In reviewing alignment, the review of the test must include whether or not the questions will measure the standards being addressed.

b) Opportunity to learn - The student must have had the opportunity to learn the standard for which he is being assessed for mastery.

c) Freedom from bias and sensitive situations – The questions must not include any wording that would place a student at a disadvantage due to "gender, culture, ethnicity, religion, or other personal factors" (Plake, 2002, p. 149).

d) Developmental appropriateness – The readability and level of understanding for the questions must be aligned to the cognitive development level for the age and grade-level of the student being assessed.

e) Score consistency and reliability – The test must be reliable and valid.

f) Appropriateness of mastery level cut points – There questions must have gone through the standards setting process to determine appropriate cut scores for the level of rigor of the questions.

Popham (2007) describes the additional importance of making sure that the assessments used for accountability purposes are instructionally sensitive. He states, "A test's *instructional sensitivity* represents the degree to which students' performances on that test accurately reflect the quality of the instruction that was provided specifically to promote students' mastery of whatever is being assessed." (Popham, 2007, p. 147). This means that the student performance scores would be a reflection of either quality or non-quality instruction for the standards being measured. He further argues that the student performance scores on the majority of accountability tests used by states are more influenced by the student socioeconomic status than the quality of instruction.

The testing requirements established by NCLB have been a costly investment to states. As one author referenced, "the cost for developing, administering, scoring, and reporting all components of the state testing program in Florida is about $42 million per year" (Jones, 2007, p. 74). "The Connecticut State Department of Education estimated that the costs of NCLB to the State Department of Education would be about $112.2 million in staff time and actual dollar outlay from 2002 through 2008" (Jones, 2007, p.

74). Although federal dollars help to pay for some of the expenses in regard to testing, it does not cover the full cost. This requires states to fund the remaining expenses associated with testing. This money could be targeted for other purposes if it weren't for the testing requirements.

Jaekyung (2008) states that the cost of testing and accountability is relatively small in comparison to other educational strategies such as teacher salaries for class size reduction positions. "Paying for tests, publishing results, and writing and publishing the standards on which the tests are graded is about $5 per student on average" (Jaekyung, 2008, p. 631). This estimate, though, was for the most basic assessment.

In 2004, ShudongWang created a report for Pearson Education, Inc. in regard to assessments being administered online verses paper and whether or not the mode of delivery affected the student results. With the rising costs associated with testing in the traditional paper and pencil model, states and schools are examining the increased use of online testing to administer required high-stakes assessments. There are many advantages of assessments delivered via online. Advantages would include a lower overall cost in printing, shipping, and handling to start. With online testing, there is also greater test security, flexible administration schedules, and faster turnaround times for scoring (Wang, 2004).

Test Taking Skills.

Prior to the 2011 – 2012 school year, Georgia public schools faced the possibility of not meeting the Annual Measurable Objectives (AMO) for the year and also faced the reality of being placed on Needs Improvement (NI) status. NI status adds additional levels of accountability to schools to support student achievement.

> This intervention might take on a relatively mild form such as requiring a school to submit an improvement plan or might be quite drastic, such as replacement of school administrators or removing the responsibility of the school's governance from the district school board (Judson, 2007, p. 15).

As Georgia schools transition to the use of the College and Career Ready Performance Index (CCRPI) as it's measure of school and school district progress for the next three years, the reality still exists that some schools may be labeled as either an Alert, Priority, or Focus school.

The new school labels, or categories, come as a result of the Elementary and Secondary Education Act (ESEA) waiver that was submitted by Georgia and approved by the United States Department of Education. This labeling, much like the previously used needs improvement (NI) rating, requires extensive school improvement efforts. However, unlike the requirements of No Child Left Behind (NCLB), the schools will have a more realistic opportunity to demonstrate progress rather than face the punitive measures that come along with an NI status. The goal is to give schools hope at demonstrating their progress rather than becoming desperate for a new program or strategy that will make notable difference at an expedited rate.

> NCLB was a punitive law based on erroneous assumptions about how to improve schools. It assumed that reporting test scores to the public would be an effective lever for school reform. It assumed that changes in governance would lead to school improvement. It assumed that shaming schools that were unable to lift test scores every year – and the people who work in them – would lead to higher scores. It assumed that low scores are caused by lazy teachers and lazy principals,

> who need to be threatened with the loss of their jobs. Perhaps most naively, it assumed that higher test scores on standardized tests of basic skills are synonymous with good education. Its assumptions were wrong. Testing is not a substitute for curriculum and instruction. (Ravitch, 2010, p. 110-111).

As the overarching goal of accountability and use of high-stakes tests is to show high levels of student achievement or progress toward increasing student achievement, the focus quickly turns to those students whose scores are very close to or just above passing. These students are commonly referred to as bubble students. If these students had filled in one or two more bubbles correctly, they would have had passing scores. Had the students filled in one or two more bubbles incorrectly, they would have had a failing score.

Samson (1985) references research indicating that individuals at all age levels has varying degrees or levels of test sophistication or test-wiseness. Test-wiseness is the ability to use characteristics and formats of the test questions in order to make decisions about the answers to the questions. Individuals who are test-wise tend to have higher scores. Samson's research indicated that providing instruction in test-taking skills did attribute to achievement gains in student scores; however, there was not a noticeable distinction between student gains due to receipt of instruction in sophisticated test-wiseness strategies and general test taking skills. Test-wiseness strategies would include strategies such as "deductive reasoning, author's intent, and cue-using" (Samson, 1985, p. 264).

One common strategy is to provide instruction in test taking skills (Carter, 2005). Students are taught about the structure of various question types, how to make good

guesses, and how to play odds against using time wisely and possibly leaving some questions blank. Several studies have been conducted in regard to the use of test-taking skills as a strategy for improvement and results have been favorable; however, Carter explored the strategy a step further in 2005 reviewing the frequency and duration of test-taking instruction. Although positive results were found in regard to the strategy, it was also determined that the results were short term and did not contribute to sustained learning. To summarize, instruction in test-taking strategies cannot replace content knowledge (Carter, 2005). This research contradicts Samson's research of 1985, which concluded that training students in test taking skills and strategies result in improvement on student achievement test scores. He further concluded that by extending test taking skills instruction over a period of five or more weeks would result in significantly higher score results.

Diamond (2007) reported of teachers who felt their pedagogy was positively influenced by high-stakes tests. Teachers stated they pushed their students into situations where higher order thinking skills were required, solutions to problems in Mathematics class must be explainable in narrative format, and experiences of cooperative team learning were increased. This contradicts Wiggins (2010) who states that a review of the most common problematic areas for students on high-stakes tests are the questions involving interpretation and transfer, not the ones requiring recall or rote learning. This finding concurs with a second scenario found by Diamond (2007) that there were other teachers who reported an increase on basic skills. Emphasis on memorization of facts was utilized as a test taking strategy (Diamond, 2007).

Schools who have seen an increase in positive performance by their students on retest assessments have discovered the use of first round test data to make focused decisions about providing instructional interventions to improve student scores. The higher performing retest scores occurred in schools where the teachers and leadership teams met collaboratively to review student data and develop a plan of improvement. Schools where the improvement plan was dictated by school or district leadership may show a positive increase in student scores; however, it was not as significant as the schools where there was shared decision making and a commitment to improve the student knowledge base rather than test taking skills (Judson, 2007).

Another reaction to improve student test scores and test taking skills is to provide additional practice opportunities for students to take tests similar to the standardized tests. Although there are many programs available through textbook companies and other online resources, many schools and districts consider creating their own version of a standardized test based on the required standards of their state. The important thing that must be remembered in these instances is that the quality of a standardized assessment lies in the rigorous process involved in determining the reliability and validity of the assessment (Conyers, 2001). It is important for schools and school districts to understand that there is a difference between a common summative assessment and a standardized criterion assessment.

Turner (2009) proposed five high-stakes test preparation strategies for increased student performance scores.

1) Teaching to the curriculum and integrating test content. Teachers should follow the curriculum plan closely and design instructional strategies that are

aligned with the knowledge and skills required of the standards that will be tested. This is not the same practice of teaching the test or teaching how to practice answering test questions. It is teaching the curriculum standards and ensuring students have the required knowledge and skills to demonstrate mastery of those standards.

2) Integrating assessment approaches and item format. Students need varied opportunities to demonstrate mastery of content standards. The high-stakes tests are typically comprised of multiple-choice questions. However, the student needs practice is not only answering multiple-choice questions, but short answer, extended response, vocabulary, computational, and open ended as well.
3) Reviewing test-taking strategies. Teaching test-taking strategies involves more than teaching the student to choose answer C. Strategies such as making sure the answer bubble is completely filled in, erasing completely, managing time during test, going back to check answers, and skipping the most difficult questions to come back to later.
4) Judicious timing of test preparation. Teachers should prepare students for the test administration throughout the year by helping them to practice their concentration skills in endurance-type, extended period timed test situations. Also, teachers must provide assessments throughout the year that are formatted similar to the high-stakes tests.
5) Engaging student motivation. By establishing individualized student goals at the beginning of the year, students will be motivated to demonstrate their

> progress toward meeting the goal(s) on test day. Teachers should always display a positive outlook and tone when discussing high-stakes tests with students. It is important to make students believe that they can reach their goal(s). (Turner, 2009).

Influencing Factors.

Demographics.

In the discussion of student performance on standardized assessments, there will always be found questions surrounding the accuracy of the measurement of the student's performance. Extenuating factors are believed to be, and have been proven through research to be, serious considerations when reviewing student and school performance data. Demographic factors such as race, ethnicity, gender, socioeconomic status, and special education needs have been shown to have effects on student test performance. The question becomes are these demographic factors more influential on student test performance rather than on the preparation a student receives through his or her enrollment in a course (Shriberg, 2006). Shriberg (2006) further recommends the administration of needs assessment to the students to help identify factors that may contribute to limitations and difficulties in a student's ability to learn and possible perform well on standardized assessments.

School Administrator.

Another element to consider when determining extenuating influencing factors on student performance on standardized assessments is the educational level and number of years of experience held by the school principal. As the role of the principal has changed over the years from that of a building manager to instructional leader, it would be

suspected that the principal's influence over teachers and students would affect student performance. Siegrist (2009) found that neither the longevity of a principal in a school building nor the total years of experience as a principal had any meaningful effect on student performance on standardized assessments. However, he did find that a relationship existed between the principal's efficacy, or belief that he has the ability to influence student achievement, and actual student achievement.

The Siegrist (2009) study further found the average longevity of a Georgia high school principal to be 3.91 years. It was referenced that research supports meaningful organization change takes three to five years. With a small longevity rate, it would be very difficult for schools to make significant changes to support improvement in instruction and student performance. Thus, if a school were already not meeting AYP, it would be a very difficult task to change that status from not meeting AYP to meeting AYP without consistent leadership.

Siegrist (2009) speculated that the pressures of high-stakes testing on high school administrators would be a likely reason for the frequent change in leadership. Because principals at the high school level were the only administrators included in the Seigrist study, the question of whether or not the results would be similar for elementary and middle school principals is one that would bear additional research. Hollingworth, et al, (2010) quoted the federal Department of Education in their program evaluation of NCLB as reporting "Appointment of a new principal, although not specified as a restructuring intervention under NCLB, was reported by 20 percent of schools in restructuring status, as well as by 20 to 21 percent of schools in other stages of school improvement status" (Hollingworth, et al, 2010, p. 462 – 463). This finding would lead one to assume that the

possible change in leadership at the school level is most likely due to factors other than school reform due to AYP status.

Teachers believe their school administrators receive pressure for their schools to perform well from the central office administration. This pressure is transferred to the teacher level and then to the student level (Moon, et al, 2007).

> Most teachers seemed to feel that their administrators were increasingly under test-related pressure from the district and state levels; however, they did not, for the most part, feel that there was pressure placed on them related to the standardized test. Principals appeared to be reacting to the student performance expectations placed on them by district and state authorities (Moon, et al, 2007, p. 96).

The way in which a principal responds to the demands of NCLB requirements is varied. Factors such as years and level of experience as well as personal philosophy of education and testing affect the actions a principal will take to bring about school improvement. Some school leaders look for new curriculum and instructional support tools to assist teachers instructionally with providing enrichment and tutorial support. Others seek the assistance of teachers in making decisions about how to increase student achievement. Through collaborative professional development communities, the teachers and building leaders work together to analyze data and look for ways to improve, or change, instructional and assessment strategies. Finally, there are some who leaders who believe in the extrinsic motivation philosophy and offer rewards and incentives to students (Hollingworth, et al, 2010).

Special Needs.

Students with identified special needs are allowed accommodations during the administration of standardized assessments, as well as during the administration of non-standardized classroom assessments. "Testing accommodations are provided to students with disabilities as assistance in overcoming the effects of disabilities that are extraneous to the intent of the test (Cohen, 2005, p. 225)". The intent of an accommodation is not to give an unfair advantage, but rather to provide a level playing field for which the student may be assessed in comparison to the general education students. With the requirements of the Individuals with Disabilities and Education Act (IDEA) to allow accommodations for student testing, it is questioned whether or not the test results for those students are valid. Cohen (2005) states that an accommodation does not take the place of knowledge. The accommodation gives the student the opportunity to demonstrate his knowledge.

There are concerns that continually arise about the use of accommodations for students with disabilities (SWDs) such as the provision of the appropriate accommodation(s) and the implementation of the accommodation with integrity, meaning providing the accommodation correctly. For an accommodation to be allowed during testing, it must be a part of the student's Individual Education Plan (IEP). The development of the IEP occurs through a collaborative team meeting where all data surrounding the student is brought into the discussion. Before an accommodation can be added to the student's IEP, a demonstration of evidence must be present to indicate that the accommodation truly assists the student in being able to access the curriculum or to access the test.

The most common accommodations used for SWDs include extending the time available for the student to complete the assessment and reading a section(s) of the test aloud. It is also common for SWDs to have multiple accommodations for one assessment. It is speculated that it may be difficult to determine which accommodation, if there is only one, is most appropriate to level the playing field for the SWD for participation in the high stakes test. In this case, students may end up with a "bundle" of accommodations. There are conflicting studies of whether or not student accommodation bundles truly support an increase in achievement on high-stakes tests (Fletcher, et al, 2009).

One area of intended improvement for students with disabilities, as well as regular education students, through the NCLB legislation was improved instruction through curricular alignment. Ysseldyke, et al, (2004) noted that data to support change in this area was beginning to surface. Changes such as the alignment of the IEP to curricular standards, narrowing the curriculum, providing more access to the general curriculum, and aligning assessments with the curriculum began to occur. Often, changes occurred due to a realization that the teacher perception about alignment was incorrect. When teachers and administrators began to have a better understanding of what alignment of curricular standards to the IEP and assessment truly was, positive changes began to occur (Ysseldyke, et al, 2004).

Schools have continued to struggle with meeting AYP requirements in the SWD subgroup category. Even with high performing school wide scores, a low performing SWD subgroup can prevent a school from meeting AYP. Thus, the consideration of more appropriate and more total accommodations is brought to the table for discussion.

Schools and parents struggle with the poor performance of their SWDs because they know that the students are doing the very best under the given circumstance. A child may make great progress during the course of the school year, but when he or she is already behind several grade levels and is assessed on the current grade level, not the IEP goals, then a poor performance score is likely to continue to be a reality (Fletcher, et al, 2009).

Emotions.

Test anxiety is an emotion experienced by students that affects their performance on standardized assessments. Putwain (2007) found that there were many influencing factors that may contribute to a student experiencing test anxiety. Student demographics, such as age, gender, ethnicity, and socio-economic status "accounted for only 9% of variance" (Putwain, 2007, p. 139). Putwain (2007) further found that factors such as the influence of the teacher and parent in regard to attitude, pressure, and encouragement had greater impact on student test anxiety.

Hollingworth, et al, (2010) referenced three types of students who experience test anxiety. The first type is termed the true perceiver. This form of test anxiety exists when the student realizes that he is not truly prepared, does not possess the content knowledge, or does not have the skills required to be able to perform well on the assessment. The second type of test anxiety is the unfocused. This form of test anxiety occurs when the student is not able to maintain concentration on the task at hand, which is to take the test. The student is easily distracted and loses concentration and time. The last type of test anxiety is the misapprehender. This form of test anxiety exists when the student believes

he is adequately prepared for the assessment and then realizes during the assessment that he is performing poorly (Hollingworth, et al, 2010).

Moon, et al, (2007) found in their study of the effects of standardized testing on teachers and students that high school students who believe retention or inability to graduate may be a possibility due to repeated poor performances on high-stakes test experience increased anxiety. The students begin frequently missing days at school and become disengaged as they see no reason to continue trying with a history of poor test scores. It is an all to frequent scenario where the student is headed for dropping out of school (Moon, et al, 2007). It is not only high school students who are affected in this way. Frey (2008) referenced a 1995 study by Rumberger where it was determined that "in-grade retention (an indicator of either poor academic performance or poor attendance) is the single strongest school-related predictor of dropping out in middle school" (Frey, 2008, p. 9). Neild (2007) found that a 6th grader with one of four indicators had a 75% chance of dropping out of high school. The indicators include

1) A final grade of *F* in mathematics.
2) A final grade of *F* in English.
3) An attendance rate of less than 80% for the school year.
4) A final "unsatisfactory" behavior mark in at least one class.

(Neild, 2007, p. 29).

If a student had more than one indicator, the probably of dropping out of high school increased even more. When the same indicators were reviewed for 8th grade students, the results were similar. As high school students, more than 50% of the dropouts had one or

more indicator as an 8th grade student. This means that the dropouts could be identified before their first day of high school (Neild, 2007).

Frey (2008) further examined the role humiliation plays in the high-stakes test arena. Her report studied humiliation of students at the middle school level and found that the types of humiliation could be placed into the categories of bullying, teacher behavior, and remedial reading and mathematics. Remedial reading and mathematics courses are those support courses that are designed to provide failing, or students at-risk of failing, in those content areas additional instruction. Students enrolled in these classes were quick to point out that by just being in the class, one is automatically singled out as being a failure. "Everyone knows who the dumb kids are" (Frey, 2008, p. 8). When students are humiliated, they shut down and other problems tend to creep in such as poor attendance, drug and alcohol use, dropping out, pregnancy, and even suicide (Frey, 2008).

Teachers expressed concern in regard to the strategy of double dosing in content area instruction. Some teachers believe they are assigned the remedial class because they are new, which goes against the logic of placing the best teachers with the students in greatest need. Other teachers observe the effects on the students, as there are visible physical changes when it is time for the students to go to remedial class. Facial expression, posture, and attitude all reflect one of negativity. There is the additional concern that limiting a student's opportunities to participate in elective courses to take an additional reading or math class instead is detrimental to the student's overall education and growth. There is nothing fun about their school day (Frey, 2008).

Physical Fitness.

As the academic content achievement accountability requirements imposed by *No Child Left Behind* increased from its 2001 implementation, schools began to diligently seek ways to provide additional time during the school day devoted to content area instruction. In order to provide more core academic content instruction, time had to be taken from other non-core content areas during the school day. This began the slow decrease in fine arts, technology, and physical education classes. "In 1991, 41.6% of high school students participated in daily PE compared with 28.4% in 2003 (Chomitz, 2009, p. 31)."

In a 2009 research study by Chomitz, et al, it was determined that a student's level of physical fitness was directly associated with standardized student achievement scores in language arts and mathematics. More specifically, students who were determined to be more physically fit performed better on the mathematics assessment than they did on the language arts assessment. The results did not indicate why fitness was linked to student achievement on the high stakes tests, but it was speculated that students who are more fit tend to be more alert, have better nutrition, and are generally more healthy all around.

Similarly, Blom (2011) found that students who are physically fit are more likely to have good school attendance and perform better on standardized tests than those who are not. Students with good attendance do not miss content instruction, as do those students with poor attendance. Attendance is one contributor to the better performance on standardized tests. The study further confirmed that students who are more physically fit are three to four times more likely to have higher performance scores in language arts

and mathematics than those students who have very low levels of physical fitness. Although this study did not seek to find causal or physiological reasons behind the correlation between physical fitness and achievement, it did reference a 2009 study by Hillman, Buck, and Themanson in which the results indicated that physical activity "can increase cognitive functioning in reaction time and response accuracy as well as students' ability to concentrate (Blom, 2011, p. 18)."

Motivation.

"This will be on the test!" has become a modern-day mantra. But such an appeal does not work with students who do not fear failing grades" (Baines, 2009, p. 97). The testing requirements established by *No Child Left Behind* (NCLB) has forced schools, especially at the elementary levels, to reduce the amount of time allocated to the areas of art, music, technology, physical education, and recess. Some schools have eliminated those programs completely. Baines (2009) further referenced that play has been researched and found to be an essential human development component. Play influences a student's creativity, curiosity, cooperative learning, and intelligence.

Reducing the opportunities for a student to experience play during the school day has contributed to the decline of children's social and psychological development. When learning activities are turned from the traditional note-taking and lecture format to one where students are actively engaged, students perform better. Students no longer dread the task before them, but welcome the learning opportunity because it feels like play. The need to coerce, bribe, or threaten students to get them perform disappears as they become intrinsically motivated to learn and do on their own (Baines, 2009).

> Even in challenging economic times, when high-stakes testing appears to be calling the shots, educators realize that having students show up is only part of the equation. Like adults, students want a significant reason to turn off the alarm clock in the morning, get out of bed, go to work or school, and learn. They crave purpose to their lives like everyone else. And they want relevance-they want to know that what they are studying, practicing, re- searching, and remembering can be put to use (Kaye, 2010, p. 19).

Eklof (2010) concluded that knowledge and motivation are theoretical constructs affecting a student's performance on a particular test. He argued that two students may have an equal amount of knowledge on a particular topic, but the student who is intrinsically motivated by performing well on tests will score better than the student who does not place as much significance on the outcome score. For the first student, the motivation to take the test is really a motivation to demonstrate achievement.

Stiggins (2004) states that the belief that high-stakes tests are good for all students because it motivates them to learn is a mistaken belief. In the accountability movement, the high-stakes tests were supposed to instill pressure on teachers to teach more effectively; however, that pressure is being transferred from the teacher to the student. The key word in the mistaken belief is that tests are good for *all* students. Those students who have a good performance record with tests do not have the same issues as students with a poor performance record. For the poor performer, as the level of performance bar is raised the realization that it will be more difficult to succeed becomes painfully clear. This is not a motivating factor for the student. The student views the increased performance bar as another opportunity to demonstrate failure. It seems an impossible

task and hopelessness overcomes the student. The student often gives up before instruction begins. This is why dropout rates increase as the performance bar measures increase (Stiggins, 2004).

In a 2010 study conducted by Hollingworth, et al, high school principals were interviewed about the different strategies they have used to increase student motivation with the hope of improving test scores. A variety of responses were provided from the principals such as pizza parties, pep rallies, days off from school, gas cards, remediation software packages, and practice tests. From the study, it was reported that 37% of the principals who had used practice tests in their schools did not believe the strategy to be helpful. Further, 39% of the principals indicated that they did not believe any of the motivational strategies that were beings used in their buildings had any effect on improving test scores. This study would indicate that the perception of extrinsic rewards and incentives from the principal's perspective is one that is not working; however, rewards continue to be used frequently at all grade-span groupings (Hollingworth, et al, 2010).

In Texas, a challenge was made to the use of parties and rewards for student achievement on high-stakes tests, as it could possibly be a violation of the Family Educational Rights and Protections Act (FERPA). FERPA prohibits the disclosure of confidential student information, which includes test scores. To recognize a group of students with pizza party, for example, because they passed the test is an inadvertent disclosure of the student test score. Just as attendance at the pizza party indicates that the student passed the test, non-attendance recognizes the students that did not pass (Hollingworth, et al, 2010).

Instruction.

From one school year to the next, the school staff is the only factor in student achievement that doesn't change, relatively speaking. The students *do* change from year to year. If a school staff wishes to have different student achievement results, it will have to change its instructional practices and strategies. To paraphrase Albert Einstein, a school cannot do the same thing over and over again and expect different results. "Learning is driven by what teachers and pupils do in classrooms" (Black, 1998, p. 139)

> Many educators believe that more than 50 percent of student achievement results can be explained by other factors than what goes on in school. With educators believing this, if we want to change the results we are getting, we have to understand why we are getting the results we are getting. Then we need to change what we do in order to get different results. (Bernhardt, 2009, p. 10).

To meet the needs of the students in the school building now and the ones who will attend in the future, it is necessary for schools to be able to predict what they must do to provide a differentiated instructional curriculum to provide a better learning experience for all students. In regard to a review of student achievement data,

> The intent of this component is to support schools in moving from a fire-fighting approach, to one of systemic prevention of school failure; from teachers who provide information to facilitators who understand and can predict the impact of their actions on student achievement; and students from recipients of knowledge delivery, to goal-setting self-assessors who produce independent, quality work. (Bernhardt, 2009, p. 21).

Black and Wiliam (1998) organized the greatest difficulties surrounding assessment into three categories.

1) Effective Learning – The tests used emphasis recall and rote learning. The test questions are not shared with other teachers. There is no collaboration.
2) Negative Impact – Giving students grades or marks is overused whereas feedback for improved performance is underused.
3) Managerial Role – The feedback to students does not provide the student with the information needed to make improvements. Individual student data in regard to their learning needs is not available or not used.

The ineffective use of formative and summative assessments in the classroom during the time for instruction does not lend support to an increase in student performance on the high-stakes tests (Black, 1998).

Importance of Passing the Test.

Although poor student performance on state standardized assessments can result in major reform actions within a school or school district, the greater concern is the resulting effects the performance may have on students.

> My disagreement with many of the advocates of high standards and high-stakes testing is that they really have very little to say about what educators should do when their school or their school system fails to meet standards, and what they do have to say is often punitive and potentially harmful....The assumption seems to be that in schools where student performance is down, teachers and administrators

> really know how to do better – they just are not doing so. (Schlecty, 1997, p. 189-190).

Students who do not pass graduation test requirements are not eligible to receive a diploma from high school, even if they have met all course requirements. A student without a diploma is at a greater risk for unemployment, incarceration, and limited advancement (Carter, 2005). Lee (2008) reported that high school graduation exams, in one study, increased the probability of dropout among lower performing students. The students who already face academic challenges now have another barrier placed in their path. To use the fear of failure as a motivational strategy for students is questionable (Guskey, 2000).

Klein (2006) found that high expectations in achievement and accountability in education are held by all stakeholder groups, especially parents, community members, and legislators. It is common, though, for each of these groups to voice their disdain for standardized assessments. The teacher stakeholder group felt that standardized testing largely drives classroom instruction.

Feeling pressure in regard to the importance of performing well on high-stakes tests educators, students, and parents lament and stress about the preparation for and administration of the assessments. Wiggins (2010) presents a different perspective in the examination of high-stakes testing. Rather than focusing on what the tests show about performance, educators should consider the greater realization that the test may provide valuable information of what the students are not learning. Data that indicates the weak areas of student performance toward meeting state standards is powerful information when making decisions about adjusting and improving instruction.

Effects of High-Stakes Testing on Schools.

To have a greater impact on student test performance and long-term learning, the issue of gaps in learning the standards must be addressed. If students experience success with knowledge and understanding of the standards, it should not be difficult to score a minimum proficiency score (Carter, 2005). The question is often asked if high-stakes testing has an effect on the curriculum and curricular standards. The effects of testing do not change the curriculum in the immediate sense. The standards remain consistent; however, the tests do affect how the curriculum is presented through instruction (Wayne, 2007).

Diamond (2007) argues:

> Most prior work has suggested that high stakes policies exert a major influence on instruction for better or for worse. Some research has found that these policies improve students' outcomes by motivating educators to emphasize more rigorous content and by leading teachers to use pedagogical approaches that enhance students' learning outcomes. Other work has indicated that accountability policies exacerbate inequalities by leading teachers to narrow the content they teach; marginalize low-performing students; or emphasize didactic pedagogy, characterized by lecture, seat work, memorization, and recitation-particularly in the lowest-performing schools (Diamond, 2007, p. 285).

Certo (2006) found that one of the greatest instructional challenges for new teachers in regard to standardized testing is pacing. Beginning teachers commonly feel that they are rushed throughout the school year to cover all of the standards that will be

on the standardized assessment. Unsure of what correct pacing should be, their learning targets are skewed, which translates to vague learning targets for the students.

In a 2009 study, Scot, et al, determined that high-stakes tests have barrier effects on the students who are determined to be gifted and talented. The requirements of standardized testing force schools to comply with set curriculum maps and pacing guides. In doing so, the highest performing students in the school are limited in their educational advancement opportunities. To maintain the rigid pace, teachers feel they are unable to "be creative and use innovative practices in their teaching" (Scot, 2009, 47). The teachers further believe that these students who are the most creative and bright are often overlooked within the school where priorities are always placed on the students who require remediation in order to be able to perform well on the annual standardized assessments.

The quality of the instruction provided to students is one of the single greatest influencing factors on student achievement. Research indicates when instruction includes an assessment of a students' current understanding, then provides continuous support through effective, timely, and quality feedback, increases in student learning occur (Sato, 2008). Wiggins (2010, p. 52) states, "Better teaching and (especially) better local testing would raise state test scores. Teaching for greater understanding would improve results, not threaten them – as both common sense and the research indicate." This seems to confirm the idea of concentration on acquisition and application of knowledge, measuring progress, and then providing meaningful feedback to the student.

Black and Wiliam (1998) indicate that feedback should focus on the quality of the student's work, and provide direction of what he or she can do to improve. "Opponents

of measurement-driven reform assert that high-stakes assessment creates negative side effects such as dumbing down the curriculum, de-skilling teachers, pushing students out of school, and generally inciting fear and anxiety among both students and educators" (Vogler, 2002, p. 39). By giving students and teachers feedback that can be used for improvement, anxiety levels are reduced and self-worth is brought back into the picture. Wiggins (2010) suggest that the states provide better feedback on the high-stakes assessments. This would include a release of all or most all of the tests with "item-by-item or school-by school analyses" (Wiggins, 2010, p. 52). Included with this should be the percentage of answers chosen for each question, not just the correct answer.

Vyrostek (2009) would agree with Sato and Wiggins in that the teacher is a great influencing factor in the success a student may experience with test taking. Within the classroom walls is where the teacher has the opportunity to first establish a positive and supportive relationship with the student. Quality and effective instruction combined with the personal connection will create the capacity for the student to fully master the content standards, which assists with higher achievement scores on the standardized tests. Ravitch (2010) further agrees that an increased focus on quality curriculum and effective instruction along with a positive school culture have greater effect on the achievement of schools and students rather than a focus on how a school is managed, governed, or controlled.

Teachers feel that the comparison of student test scores from school to school and across the state is not a fair or accurate representation of the progress that is being made by students. In a 2007 study conducted by Moon, et al, one teacher made the point that

> The biggest pressure is when the district or state tries to compare apples to oranges. Students at our school compared to students at an inner school and we are not the same. We are not the same demographics. We are not the same cultures. Everything is different and you cannot do that. (Moon, et al, 2007, p. 216).

This teacher's comment was further supported in the Moon 2007 study as it was noted that some schools have a very high second language population and others have a high poverty rate. The teachers did not think it is fair to compare those types of schools with others who do not have the same challenges (Moon, et al, 2007).

With so much research devoted to effective and quality instruction and the importance of the role of the teacher in the classroom, there is argument of the amount of instructional time that lost due to testing. Not only the actual administration of the high-stakes tests, but in preparation for the tests. Simon (2010) cited a case that was brought to light in Florida in 2009 where a 10th grade high school student questioned the amount of time she was missing in an honors level language arts class due to preparation for the upcoming standardized assessment. During the investigation of the incident, it was revealed that in addition to the six hours of instructional time that was missed during the actual administration of the high stakes test, the student(s) also missed approximately ninety additional instructional hours due to emphasis placed on test preparation. That is the equivalent of almost one-tenth of the instruction that should have been provided. As a result, the state of Florida implemented a ruling that prohibits the suspension of the regular education program for the purposes of test preparation. Schools who score poorly

on the required annual assessments would have to find another way to prepare and remediate students for the next assessment administration (Simon, 2010).

Most school systems operate under a mission and/or vision of graduation for all its students. It, then, seems impracticable that so much emphasis would be placed on merely helping the student to pass a test for accountability purposes rather than use the test for its intended purpose of helping the student to master the standards and graduate from high school on time. "High school completion is probably a more important variable than test scores by which the educational system is gauged" (Carnoy, 2005, p. 30).

Summary

A consistency throughout the review of literature has been the feelings of pressure to perform well that exist at every stakeholder level. There is a trickle down effect from the state level to the school district, from the school district to the individual school, from the individual school to the individual classroom teacher, and from the individual classroom teacher to the individual student (Moon, et al, 2007). The feelings of pressure affect each stakeholder group differently; however, feelings of inadequacy and vulnerability seem consistent throughout the review with students, teachers, and school administrators. Students question whether or not they will be promoted to the next grade level or graduate from school. Teachers and administrators question their effectiveness in working with students and whether or not they will have a job the next school year based on the results of the most recent test.

As schools review their student performance data and face the possibility of becoming a Needs Improvement (NI) school, they "must diagnose whether or not they

are actually doing what they want to be doing and whether their actions match their words" (Chance, 2009, p. 4). The realization that assessment data should be used to guide instruction is an important breakthrough. Use of the assessment data at the local level before the high-stakes administration is essential to seeing improved standardized results.

Wiggins (2010) argues that local assessments are most often a much weaker link in the big picture of accountability changes and large-scale increase in student achievement. "Many of us have seen firsthand how invalid and low-level many local tests are. And studies have shown for years that in terms of Bloom's taxonomy, most teacher questions only hit the first two levels (knowledge and comprehension) instead of the higher levels (application, analysis, synthesis, and evaluation)" (Wiggins, 2010, p. 52).

> Where I do have a quarrel is with the idea that measures of student learning are useful tools for directing efforts to reform schools, or worse, that measures of student learning in school are also measures of school quality. Neither proposition holds up under scrutiny. Measures of student learning may indicate that something needs to change in schools. Such measures can even give some indication as to the general areas where change needs to occur; for example, measures of learning in science may be unsatisfactory, whereas measures in history meet desired standards, thereby indicating a need to work to improve science instruction. (Schlecty, 1997, p. 187).

Becoming familiar with the data is important, but knowing how to use the data and discuss it collaboratively for sustained school and student improvement makes the

difference toward meeting AMOs (Chance, 2009).

> The focus on national and state testing of student achievement generally serves three functions. First, it provides a vehicle to inform the public about the effectiveness of schools. Second, it qualifies districts for rewards and triggers state intervention in the education program. Third, districts and schools use test results as part of accreditation and school improvement process (Griswold, 2005, p. 65)."

Through the accountability process, schools face the possibility of consequences resulting in major reform and possibly total restructuring. "There simply cannot be genuine accountability unless state assessments provide such transparent feedback" (Wiggins, 2010, p. 52).

The literature supports the consistent question of why schools do not receive reward or recognition for the progress that they do make (Griswold, 2005). Students with disabilities who make substantial levels of progress, but are still not on grade level are classified as failures. This is a confusing message to the student as he has been provided feedback of success and then receives a test score of failure. The same is true with second language learners. The students may be very proficient in mathematics but are classified as failures because the language barriers prevent them from being able to read the story problems. Although current Georgia State Rule 160-3-1-.07 allows deferment of the language arts and social studies assessments for students who have been enrolled in the country for the first time for less than one year, the deferment rule does not apply to EOCTs. Regular education students may make content area gains as well, but if they do not make the AYP target, they are classified as failures (Moon, et al, 2007).

The emotional impact of high-stakes testing on students is manifested in the form of test anxiety and humiliation. The two concepts are closely linked. As test anxiety affects a student's performance on the actual test, a poor performance can lead to humiliation. Humiliation, being a completely emotional concept, is one that can have long-term consequences and is an area bearing great consideration for the students who may experience it (Frey, 2008). Finding opportunities for students to feel good about the feedback received from high-stakes tests can affect their performance on the next major assessment.

CHAPTER THREE: METHODOLOGY

Introduction

The purpose of this quantitative correlational study is to determine if a relationship exists between the 8th Grade Georgia Criterion-Referenced Competency Test (CRCT) scores and the high school End-of-Course Tests (EOCT) in the academic content areas of language arts and mathematics. Further, the study will seek to determine if the CRCT scores may be used as predictors of student achievement on the EOCTs in the same academic content areas. This chapter will describe the sample of the study, the instruments used for data collection, the method(s) of data collection, and the statistical measures used to analyze the data.

Research Design

This study followed a correlational research design to determine if a relationship exists between the 8th grade CRCT and high school EOCT scores. In correlational research, the question is asked if one variable is related to another. The Pearson product-moment correlation coefficient was calculated using an independent variable (or the predictor variable) and the dependent variable (or the criterion variable). The correlation coefficient value range is -1 to 1. The closer the coefficient is to 1, the stronger the correlation of variables. Conversely, the closer the coefficient is to -1, the weaker the correlation of variables. A limitation of correlational research is that predictability does not indicate causation. One variable does not necessarily cause the other or vice versa (Howell, 2008).

The 8th grade CRCT language arts and mathematics scores were used as the independent, or predictor variables. The Ninth Grade Literature EOCT and Math I EOCT scores were used as the dependent, or criterion variables. These EOCTs are the primary language arts and mathematics assessments for 9th graders. Data was collected over a time span of three school years. The 8th Grade CRCT scores from 2008 – 2011 and the high school EOCT scores from 2008 – 2011 were used, as this would allow for three classes of students transitioning from grades 8 through 11. Additionally, these students would have had the Georgia Performance Standards (GPS) as their instructional curriculum in both areas of language arts and mathematics beginning in the 6th grade.

Research Questions

The first research question for this study is as follows: Is there a relationship between the 8th grade CRCT scores on the language arts section and EOCT scores in the same academic areas? The data used for this research question was loaded into an Excel spreadsheet. The data consisted of the 8th grade CRCT language arts scores for first-time test takers from 2008 – 2011. These scores were paired with the first-time test taker scores for the same students on the 9th Grade Literature EOCT. The Pearson Correlation Coefficient formula was entered into the spreadsheet to calculate the correlation between the two variables. The value of the coefficient indicates the strength or weakness of the correlation of the data.

The second research question of the study is as follows: Is there a relationship between the 8th grade CRCT scores on the mathematics section and EOCT scores in the same academic areas? The data used for this research question was also loaded into an Excel spreadsheet and followed the same calculation procedures as with the language arts

scores. The data consisted of the 8th grade CRCT mathematics scores for first-time test takers from 2008 – 2011. These scores were paired with the first-time test taker scores for the same students on the Math I EOCT. The Pearson Correlation Coefficient formula was entered into the spreadsheet to calculate the correlation between the two variables. The value of the coefficient indicates the strength or weakness of the correlation of the data.

The third research question is as follows: If a relationship exists with the CRCT and the EOCT in the area of language arts, is the relationship strong enough that one may be used as a predictor of the other? A hired professional statistician loaded the data used for this research question into SPSS, a statistical software program. The data consisted of the 8th grade CRCT language arts scores for first-time test takers from 2008 – 2011. These scores were paired with the first-time test taker scores for the same students on the 9th Grade Literature EOCT. A linear regression test was performed to determine the predictability of the EOCT scores based on the CRCT scores.

The last research question for the study is as follows: If a relationship exists with the CRCT and the EOCT in the area of mathematics, is the relationship strong enough that one may be used as a predictor of the other? A hired professional statistician loaded the data used for this research question into SPSS, a statistical software program. The data consisted of the 8th grade CRCT mathematics scores for first-time test takers from 2008 – 2011. These scores were paired with the first-time test taker scores for the same students on the Math I EOCT. A linear regression test was performed to determine the predictability of the EOCT scores based on the CRCT scores.

Hypotheses

H_{01}: There is no relationship between the 8th Grade CRCT scores and the EOCT scores in the area of language arts.

H_{02}: There is no relationship between the 8th Grade CRCT scores and the EOCT scores in the area of mathematics.

H_{03}: The 8th Grade CRCT language arts scores do not significantly predict student achievement on the EOCT in the area of language arts.

H_{02}: The 8th Grade CRCT math scores do not significantly predict student achievement on the EOCT in the area of Mathematics.

Participants

The subjects of this study were the 8th grade CRCT scores for students located in a small semi-rural school district north of Atlanta for the school years 2008 – 2011. The EOCT scores for the same students located in the same school district for the school years 2008 – 2011 are included. The assessment scores used for the purpose of this study were in the academic content areas of language arts and mathematics. Only those students, who had first time test scores for both the CRCT and EOCT pairings, were accepted for the sample.

Given the number of students involved and the three-year time frame, there were approximately 600 scores as members of the sample data for each academic content area. The students involved in the study were predominantly white with very little diversity in race or ethnicity. During the school years 2008 – 2011, the white population of students changed slightly from 94% to 92% whereas the free and reduced lunch rate has grown

significantly from 35% to 48%. For the purposes of this study, race, ethnicity, and economic status were not used as factors.

Setting

This study encompassed a review of the test scores of students in a semi-rural small school district. This school district is located in the Northeast Georgia area, approximately 50 miles north of Atlanta. The district has been historically categorized as rural; however, due to recent growth of the metro Atlanta area, it is now considered to be a semi-rural setting.

The 2010 U.S. Census data reports that the county in which the school district is located has a population of 22,330. This number reflects a 96% white population. The median household income for the county is $51,127.

The enrollment of the school district is approximately 3,400 students. Of those students, the subgroups currently include 92% white, 5% Hispanic, and 2% or less Black/African-American, Asian, and Multi-Racial populations. There are four elementary schools, two middle schools, one high school, and one alternative school.

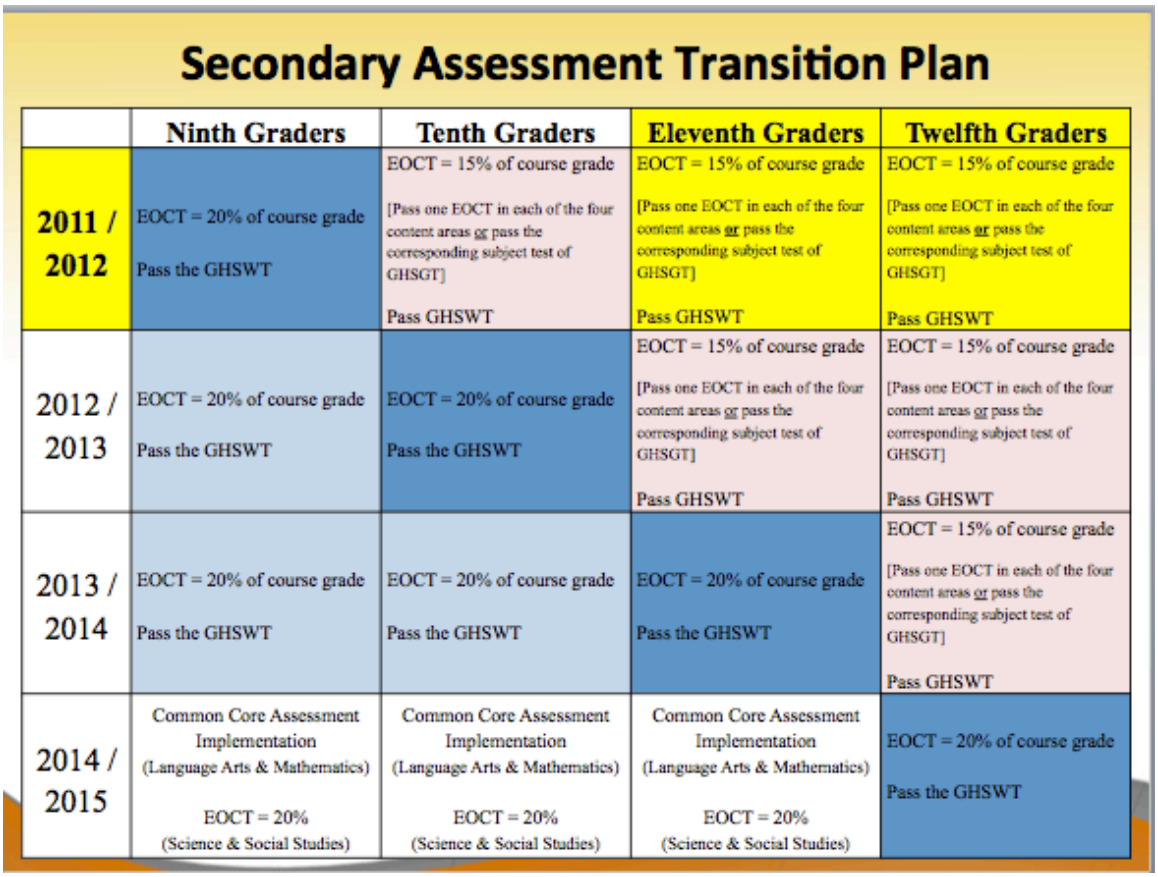
Instrumentation

The instruments used for this study are the 8th Grade Georgia Criterion-Referenced Competency Test (CRCT) and the high school Georgia End-of-Course Tests (EOCT), all in the areas of language arts and mathematics. Specifically, the high school assessments used in the study are the Ninth Grade Literature and Math I EOCTs as these two assessments are the primary EOCTs for 9th graders in language arts and mathematics.

The CRCT has been Georgia's mandated annual reporting instrument used for the determination of schools and school districts meeting Adequate Yearly Progress toward

reaching the Annual Measurable Objectives as was outlined in the *No Child Left Behind* legislation for grades 1 through 8 since 2002. More recently the CRCT has been used in grades 3 through 8 only. The elimination of the CRCT for grades 1 and 2 is due to state reduction in funds for the office of student assessment. Target benchmark years have been identified for Georgia students in grades 3, 5, and 8. At these grade levels, students must pass the reading and mathematics sections of the test in order to be eligible for promotion to the next grade level. If the student does not pass the required benchmark assessments, retention is a possibility.

The high school reporting instrument has recently changed from the Georgia High School Graduation Test (GHSGT) to the Georgia End-of-Course Tests (EOCT). Students who entered the 9th grade for the first time on or after July 1, 2008 may use passing EOCT component scores in lieu of the GHSGT for meeting graduation requirements. Students who entered 9th grade for the first time on or after July 1, 2011, the EOCT will count as 20% of their final course grade. This group of students is no longer required to take and pass the GHSGT or the EOCT, but must pass the EOCT course with the increased percentage weight of the formal assessment counting toward the final course grade. The implementation plan for this change in percentage weighting can be seen in Figures 1 and 2 as was presented by the Georgia Department of Education's Testing Division.



Secondary Assessment Transition Plan

	Ninth Graders	Tenth Graders	Eleventh Graders	Twelfth Graders
2011 / 2012	EOCT = 20% of course grade Pass the GHSWT	EOCT = 15% of course grade [Pass one EOCT in each of the four content areas or pass the corresponding subject test of GHSGT] Pass GHSWT	EOCT = 15% of course grade [Pass one EOCT in each of the four content areas or pass the corresponding subject test of GHSGT] Pass GHSWT	EOCT = 15% of course grade [Pass one EOCT in each of the four content areas or pass the corresponding subject test of GHSGT] Pass GHSWT
2012 / 2013	EOCT = 20% of course grade Pass the GHSWT	EOCT = 20% of course grade Pass the GHSWT	EOCT = 15% of course grade [Pass one EOCT in each of the four content areas or pass the corresponding subject test of GHSGT] Pass GHSWT	EOCT = 15% of course grade [Pass one EOCT in each of the four content areas or pass the corresponding subject test of GHSGT] Pass GHSWT
2013 / 2014	EOCT = 20% of course grade Pass the GHSWT	EOCT = 20% of course grade Pass the GHSWT	EOCT = 20% of course grade Pass the GHSWT	EOCT = 15% of course grade [Pass one EOCT in each of the four content areas or pass the corresponding subject test of GHSGT] Pass GHSWT
2014 / 2015	Common Core Assessment Implementation (Language Arts & Mathematics) EOCT = 20% (Science & Social Studies)	Common Core Assessment Implementation (Language Arts & Mathematics) EOCT = 20% (Science & Social Studies)	Common Core Assessment Implementation (Language Arts & Mathematics) EOCT = 20% (Science & Social Studies)	EOCT = 20% of course grade Pass the GHSWT

Figure 1. Secondary Assessment Transition Plan

Adapted from "Spring 2012 Pre-Administration Webinar Georgia High School Graduation Test" PowerPoint Slides, by the Georgia Department of Education 2012.

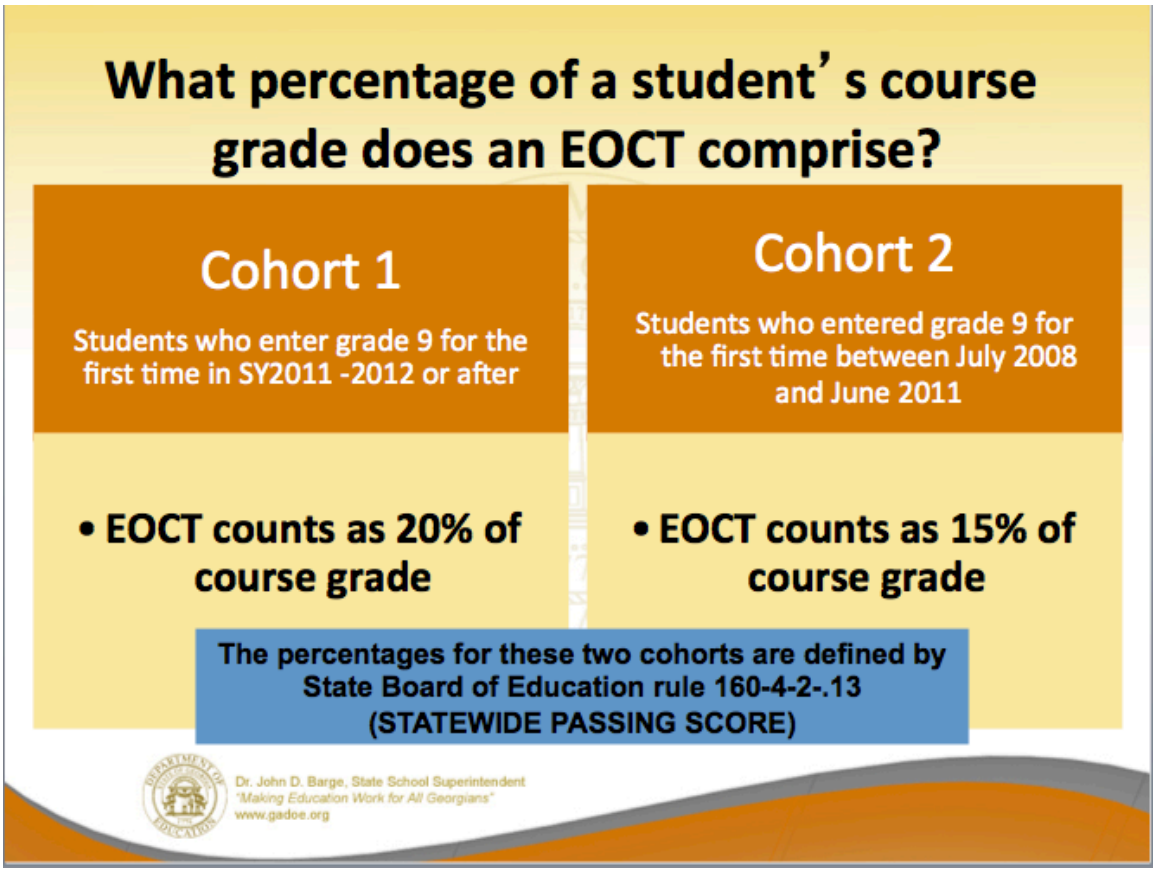


Figure 2. EOCT Percentage Change Phase-In Plan

Adapted from "End of Course Tests (EOCT) Pre-Administration Webinar Spring 2012" PowerPoint Slides, by the Georgia Department of Education 2012.

A criterion-referenced test measures student achievement in mastering a specific set of standards. In Georgia, for example, the CRCT and EOCT measure student performance on the Georgia Performance Standards (GPS), which is the state curriculum model for grades K through 12. Summary reports are provided at the student, class, school, system, and state levels for analysis and review. Additionally, the school district used in this study enlists the expertise of its local Regional Educational Support Agency (RESA) to produce reports in greater detail to measure student growth from year to year.

This information is also available at the teacher to level to assist with consideration of teacher effectiveness and professional development needs.

For accountability purposes, the state of Georgia was granted a federal flexibility waiver by the United States Department of Education (USEd) in November 2011. The waiver applies to the requirements of the Elementary and Secondary Education Act (ESEA). This waiver allows Georgia to create it's own model for measuring school and school district progress for the next three school years. The state will transition to the College and Career Ready Performance Index (CCRPI) beginning with the FY12 student data. This document, still in draft form, will present a substantial change from AYP in measuring accountability and progress; however, the CRCT and EOCTs will continue to be the core instruments for measuring student achievement toward mastery of the Georgia Performance Standards (GPS).

The CRCT and EOCT have both been examined for validity and reliability. An assessment would be considered reliable if the results were consistent over multiple administrations of the assessment to the same students. An assessment would be considered valid if the results measure the intended topic of measure. (socialresearchmethods.net, n.d.).

Each test follows the same process for development and implementation. The Georgia State Department of Education receives bids from testing companies to determine who will be the contracted test developer. Once a test company has been secured, a team of professional writers of test items prepares questions for each academic area to be tested. The questions are reviewed by a select team of educators from all over the state and then returned to the test contractor for field-testing. The returned questions

are field-tested with students but do not count toward a student's final assessment score. Upon approval of the field-tested questions, the team of educators meet again to determine how many questions a student must answer correctly for each testing domain in order to receive a "Meets" or "Exceeds" score for the area. This is called the "standards setting" process.

The standards are submitted to the state School Superintendent for review, and he or she will either approve or reject the team recommendation. Once the approval by the State Superintendent is received, the test items and standards will be ready for authentic administration. The test contractor and the Georgia Technical Advisory Committee (TAC) conduct statistical analysis on the test development and implementation continually to ensure the tests used by Georgia for accountability purposes are both valid and reliable. (Georgia Department of Education, 2008).

Each year the Georgia Department of Education produces a report detailing the validity and reliability for it's required standardized assessments. The thorough test for validity and reliability provides the state with the data necessary to demonstrate that it's students are being assessed using and authentic assessment and that the results of the tests may be considered accurate and a fair representation of the student and school performance. For the purposes of this study, those reports have been used for the CRCT and EOCT to gather information about the internal consistency measures of the assessments ("Validity and reliability," 2008, 2009, 2010, 2011).

For both the CRCT and EOCTs, Cronbach's alpha reliability coefficient is used to measure internal consistency. Internal consistency is how closely a set of items is related as a group. The value of the alpha coefficient may range from 0 to 1. The closer the

coefficient is to 1, the more reliable the test. Table 1 shows the alpha coefficient for the 8th grade language arts CRCT to be 0.89 for the 2008 administration of the assessment. This means that the assessment is reliable 89% of the time (Choudhury, 2010). Additional reliability coefficients for the CRCT administrations of both language arts and mathematics for the school years used in this study are shown in Table 1 as well.

The reliability coefficients for the EOCT administrations of the Ninth Grade Literature and Math I assessments for the years used in this study are shown in Table 2. For Math I, reliability numbers are not displayed for the Winter 2008 and Spring 2009 administrations. During these administrations of the EOCT, Math I test questions were being field tested, as this was the first class of students to take the Math I EOCT.

Both Tables 1 and 2 also list the Standard Error of Measurement (SEM) scores for each of the CRCT and EOCT administrations. The SEM is an estimate measure of a hypothetical situation. If a student were to take the same test multiple times without any additional preparation or study, it is likely that the student would score higher or lower on repeat administrations of the test than on the first administration. This variation in scores is called the SEM ("Standard error of," 2011). The higher the reliability of an assessment, the lower the SEM. The SEM for the 8th grade CRCT in language arts for 2008 is 2.72. This means that the student score for this assessment is within 2.72 points of the highest and lowest hypothetical score.

Table 1

Reliability Coefficients (Cronbach's α) and Raw Score SEM for 8th Grade CRCT in the areas of Language Arts and Mathematics

CRCT Year	Language Arts		Mathematics	
	Alpha	SEM	Alpha	SEM
2008	.89	2.72	.91	3.22
2009	.89	2.73	.92	3.20
2010	.89	2.70	.92	3.22
2011	.89	2.67	.91	3.16

Note.

Alpha = Cronbach's α reliability coefficient

SEM = Standard Error of Measure

Adapted from Georgia Department of Education, (2008). *Validity and reliability for the 2008 Criterion-Referenced Competency Tests,* Georgia Department of Education, (2009). *Validity and reliability for the 2009 Criterion-Referenced Competency Tests,* Georgia Department of Education, (2010). *Validity and reliability for the 2010 Criterion-Referenced Competency Tests,* Georgia Department of Education, (2011). *Validity and reliability for the 2011 Criterion-Referenced Competency Tests.*

Table 2

Reliability Coefficients (Cronbach's α) and Raw Score SEM for Ninth Grade Literature and Math I EOCTs

EOCT Year	Ninth Grade Literature		Math I	
	Alpha	SEM Form 1/Form 2	Alpha	SEM Form 1/Form 2
Winter 2008	.93	3.37/3.39	N/A	N/A
Spring 2009	.93	3.37/3.38	N/A	N/A
Winter 2009	.92	3.41/3.40	.86	3.32
Spring 2010	.93	3.28/3.35	.87	3.30
Winter 2010	.93	3.32/3.39	.90	3.26/3.29
Spring 2011	.93	3.25/3.25	.90	3.27/3.26

Note.
Alpha = Cronbach's α reliability coefficient
SEM = Standard Error of Measure
Adapted from Georgia Department of Education, (2009). *Validity and reliability for the 2008-2009 Georgia End-of-Course tests,* Georgia Department of Education, (2010). *Validity and reliability for the 2009-2010 Georgia End-of-Course tests,* Georgia Department of Education, (2011). *Validity and reliability for the 2010-2011 Georgia End-of-Course tests.*

Procedures

A thorough review of the literature was conducted prior to the data collection stage. The literature review included the topics of accountability legislation, high-stakes testing, predictability of tests, and use of assessment data.

The proposal for study was presented to the Liberty University Internal Review Board (IRB) for permission to proceed with the study. The IRB granted permission to proceed with the study. Next, the Superintendent of the small school district was

contacted for approval to use its students test data for the purposes of this study. Permission was granted to use student data for the purpose of this study.

The school district maintains electronic records of student scores in spreadsheet format. Use of these spreadsheets provided the most practical way to collect the data needed for this study. Permission to use the student data was granted by the school superintendent with the understanding that the results of the study would be shared with the school district officials. Permission for the release of district test data to be used for the purpose of this study was required by the Superintendent of Schools for the district.

The test data from each assessment was merged into one Excel document using the student Georgia Test Identification number (GTID) as the common factor for grouping. Upon completion of the data merge, the GTID numbers were removed and alternative numbers were assigned to the student scores to remove any possibility of connecting a set of test scores with an individual student.

The researcher serves as the Director of Testing for the school district to be examined. There were no confidentiality violations as the Director has accessibility rights to all test scores for students in the district; however, the Superintendent of Schools still provided permission for the use of student data for purposes outside of the normal work setting. Because no personal identifiers were associated with the data, parental permission was not required. The scores included the scale scores and performance levels for the 8th grade CRCT in the areas of language arts and mathematics and the grade conversion scores and performance levels for the 9th grade EOCTS in the areas of Ninth Grade Literature and Math I.

Data Analysis

The data were collected using Microsoft Excel. Analysis of the data included the use of descriptive statistics. Means, frequencies, percentages, pass/fail ratios, and standard deviations were used to provide a summary representation of the data. The Pearson's Correlation Coefficient was used to determine if a relationship exists between the sets of data and if so, the strength of that relationship. A logistic regression test was used to determine if the CRCT scores were predictive of EOCT scores. The logistic regression examined the Beta co-efficient, the standard error of measure, the statistical significance, and the exponential variable of predictability. The 8th grade CRCT scores were used as an independent predictor variable for the EOCT used as a dependent variable.

Should a positive relationship be found with the analysis of the data and predictability established, this would be valuable information to school districts, their building leaders, and classroom teachers. Being able to determine predictability of failure or success on the 9th grade End-of-Course Test at the 8th grade level would allow the high school time to vertically plan with the middle school teachers to review student data, adjust the master schedule to provide appropriate course scheduling and support time, and to review curriculum maps and pacing guides to meet the needs of the upcoming 9th grade students. The high school student will need to earn course credit to meet graduation requirements and with the change of the EOCT weight to count 20% of the student's final course grade, failure to recognize and plan for the instructional support needs of students has the potential to severely limit a student in graduating on time.

Summary

This chapter has explained the methods and procedures used to conduct this study. The study is an attempt to determine whether or not a relationship exists between the 8th grade CRCT language arts and mathematics scores and the 9th grade EOCTs, specifically Ninth Grade Literature and Math I EOCTs. The study further seeks to determine if the student CRCT scores in language arts and mathematics are predictive of performance on the Ninth Grade Literature and Math I EOCTs. The results of the study are presented in the next chapter.

CHAPTER FOUR: RESULTS

This study was designed to determine if a relationship exists between student performance on the 8th grade Georgia Criterion Referenced Competency Test (CRCT) and the corresponding Ninth Grade Literature and Math I End-of-Course Test (EOCT). Further, the study was designed to determine if the 8th grade CRCT in the areas of mathematics and language arts could predict the student's performance in the same academic content areas on the EOCT.

The 8th grade CRCT scores in mathematics and language arts from 2008 – 2011 were used in this study. The EOCT scores in Math I and Ninth Grade Literature from 2009 – 2011 were used in this study. Only those students with both first time CRCT and EOCT scores were used.

There were four research questions guiding the work of this study. They are as follows:

Research Question 1: Is there a relationship between the 8th grade CRCT scores on the language arts section and EOCT scores in the same academic areas?

Research Question 2: Is there a relationship between the 8th grade CRCT scores on the mathematics section and EOCT scores in the same academic areas?

Research Question 3: If a relationship exists with the CRCT and the EOCT in the area of language arts, is the relationship strong enough that one may be used as a predictor of the other?

Research Question 4: If a relationship exists with the CRCT and the EOCT in the area of mathematics, is the relationship strong enough that one may be used as a predictor of the other?

The null hypotheses that were developed for each research question are as follows:

H_{01}: There is no relationship between the 8th Grade CRCT scores and the EOCT scores in the area of language arts.

H_{02}: There is no relationship between the 8th Grade CRCT scores and the EOCT scores in the area of mathematics.

H_{03}: The 8th Grade CRCT language arts scores do not significantly predict student achievement on the EOCT in the area of language arts.

H_{04}: The 8th Grade CRCT math scores do not significantly predict student achievement on the EOCT in the area of mathematics.

Data Analysis

The data for this study were recorded into an Excel spreadsheet and also loaded into SPSS. Descriptive statistics were gathered on the student demographic data to determine the student representation within the sample. Frequency and percentages were used for nominal (categorical) data. Range, means, and standard deviations were used on the discrete data. The standard deviation measures the statistical dispersion, or variation, from the mean in a set of numbers. The closer the data points are to the mean, the closer the standard deviation will be to zero. The arithmetic mean of the data is calculated by dividing the sum of the scores by the number of scores.

Descriptive Data

The means, standard deviations and ranges for the 2008 – 2011 CRCT and EOCT math and language arts data are shown in Table 1 by assessment and content area.

Table 1

Means, Standard Deviations and Ranges for CRCT Scores by Content Area From 2008 – 2011

2008 – 2011	Min	Max	M	SD
CRCT – MA	724	990	819	32.20
EOCT – MA1	53	95	76	10.18
CRCT – ELA	762	950	845	32.61
EOCT – 9th Lit	45	96	83	9.68

Note.
Min = lowest score
Max = highest score
M = arithmetic mean
SD = standard deviation

The frequencies and percentages for passing verses failing scores by assessment and content area are shown in Table 2.

Table 2

Frequencies and Percentages for Pass verses Fail by Content Area From 2008 – 2011

2008 – 2011	Pass		Fail	
	Frequency	Percentage	Frequency	Percentage
CRCT – MA	438	75%	143	25%
EOCT – MA1	418	72%	163	28%
CRCT – ELA	558	93%	42	7%
EOCT – 9th Lit	532	89%	68	11%

The frequencies and percentages for passing both the CRCT and EOCT verses failing both the CRCT and EOCT by gender for the content area of language arts are shown in Table 3.

Table 3

Frequencies and Percentages for Pass Both CRCT and EOCT verses Fail Both CRCT and EOCT in Language Arts by Gender From 2008 – 2011

2008 – 2011	Pass Both CRCT & EOCT		Fail Both CRCT & EOCT	
	Frequency	Percentage	Frequency	Percentage
Male	253	80%	19	7%
Female	261	83%	5	2%

The frequencies and percentages for passing both the CRCT and EOCT verses failing both the CRCT and EOCT by gender for the content area of mathematics are shown in Table 4.

Table 4

Frequencies and Percentages for Pass Both CRCT and EOCT verses Fail Both CRCT and EOCT in Mathematics by Gender From 2008 – 2011

2008 – 2011	Pass Both CRCT & EOCT		Fail Both CRCT & EOCT	
	Frequency	Percentage	Frequency	Percentage
Male	191	63%	55	18%
Female	180	65%	41	15%

Table 5 contains a breakdown of CRCT mathematics score ranges for students who failed the MA1 EOCT.

Table 5

Frequencies and Percentages for MA CRCT Scale Scores with Paired Fail MA1 EOCT Scores by From 2008 – 2011

2008 – 2011 MA I EOCT Fails	Frequency	Percentage
	163	28%
MA CRCT Score $\geq$ 850	1	1%
850 > MA CRCT Score $\geq$ 825	7	4%
825 > MA CRCT Score $\geq$ 800	59	36%
MA CRCT Score < 800	96	59%

Table 6 contains a breakdown of CRCT language arts score ranges for students who failed the Ninth Grade Literature EOCT.

Table 6

Frequencies and Percentages for ELA CRCT Scale Scores with Paired Fail 9th Grade Lit. EOCT Scores by From 2008 – 2011

2008 – 2011 9th Grade Lit. EOCT Fails	Frequency	Percentage
	68	11%
ELA CRCT Score ≥ 850	1	1%
850 > ELA CRCT Score ≥ 825	13	19%
825 > ELA CRCT Score ≥ 800	30	44%
ELA CRCT Score < 800	24	35%

Table 7 contains a breakdown of CRCT mathematics score ranges for students who exceeded the MA1 EOCT.

Table 7

Frequencies and Percentages for MA CRCT Scale Scores with Paired Exceeds MA1 EOCT Scores by From 2008 – 2011

2008 – 2011 MA I EOCT Exceeds	Frequency	Percentage
	106	18%
MA CRCT Score $\geq$ 850	77	73%
850 > MA CRCT Score $\geq$ 825	24	23%
825 > MA CRCT Score $\geq$ 800	5	5%
MA CRCT Score < 800	0	0%

Table 8 contains a breakdown of CRCT mathematics score ranges for students who exceeded the Ninth Grade Literature EOCT.

Table 8

Frequencies and Percentages for ELA CRCT Scale Scores with Paired Exceeds 9th Grade Lit. EOCT Scores by From 2008 – 2011

2008 – 2011 9th Grade Lit. EOCT Exceeds	Frequency	Percentage
	227	38%
ELA CRCT Score ≥ 850	182	80%
850 > ELA CRCT Score ≥ 825	41	18%
825 > ELA CRCT Score ≥ 800	4	2%
ELA CRCT Score < 800	0	0%

Research Question 1

Is there a relationship between the 8th grade CRCT scores on the language arts section and EOCT scores in the same academic areas?

To assess research question one, a Pearson correlation was conducted to assess if there exists a relationship between 8th grade CRCT score on the language arts section and the Ninth Grade Literature EOCT score. The results of the Pearson correlation were significant, $r\,(600) = .68$, $p < .001$, suggesting that a strong positive relationship exists between 8th grade CRCT score on the language arts section and the Ninth Grade Literature EOCT score. The correlation indicates as 8th grade CRCT language arts scores

increase, Ninth Grade Literature EOCT scores also increase. This can be seen in the visual representation of the data in Figure 1. The line of best fit for the data would be a straight line. The null hypothesis – there is no relationship between the 8th grade CRCT score on the language arts section and the EOCT score in the same academic area can be rejected. The results of the Pearson correlation are presented in Table 9.

Table 9

Pearson Correlation for 8th Grade CRCT and EOCT for Language Arts

Tests Compared	Score Correlation
CRCT with EOCT – ELA	0.68**

Note. * $p < 0.05$. ** $p < 0.01$.

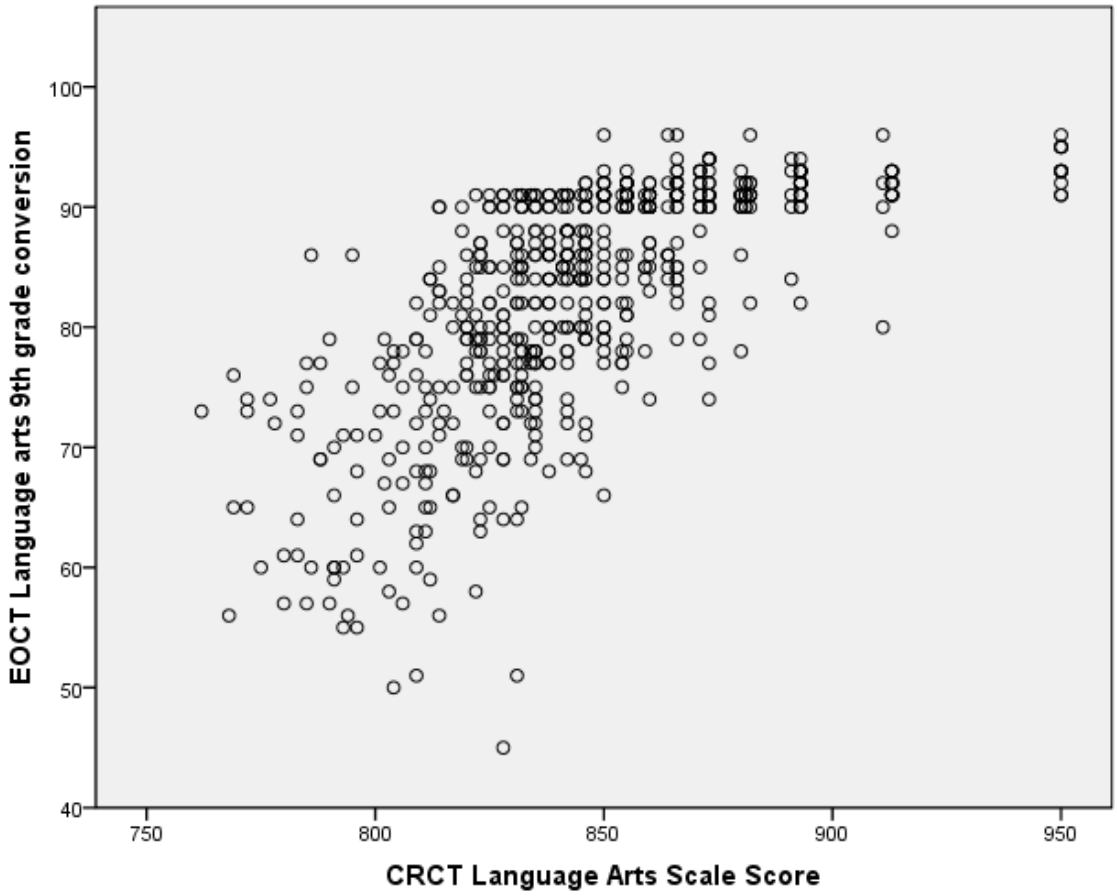


Figure 1. Scatterplot of CRCT Language Arts Scale Score by EOCT Language Arts Conversion Score

Research Question 2

Is there a relationship between the 8th grade CRCT scores on the mathematics section and the EOCT scores in the same academic area?

To assess research question two, a Pearson correlation was conducted to assess if there exists a relationship between 8th grade CRCT score on the mathematics section and the Math I EOCT score. The results of the Pearson correlation were significant, r (581) = .75, $p < .001$, suggesting that a strong positive relationship exists between 8th grade CRCT score on the mathematics section and the Math I EOCT score. As the 8th grade

CRCT mathematics scores increase, the Math I EOCT scores also increase. This correlation is represented visually in Figure 2. The line of best fit would, again, be a straight line, just as in the case of the language arts assessments. The null hypothesis – there is no relationship between the 8th grade CRCT scores on the mathematics section and the Math I EOCT scores can be rejected. The results of the Pearson correlation are presented in Table 10.

Table 10

Pearson Correlation for 8th Grade CRCT and EOCT for Mathematics

Tests Compared	Score Correlation
CRCT with EOCT – MA	0.75**

Note. * $p < 0.05$. ** $p < 0.01$

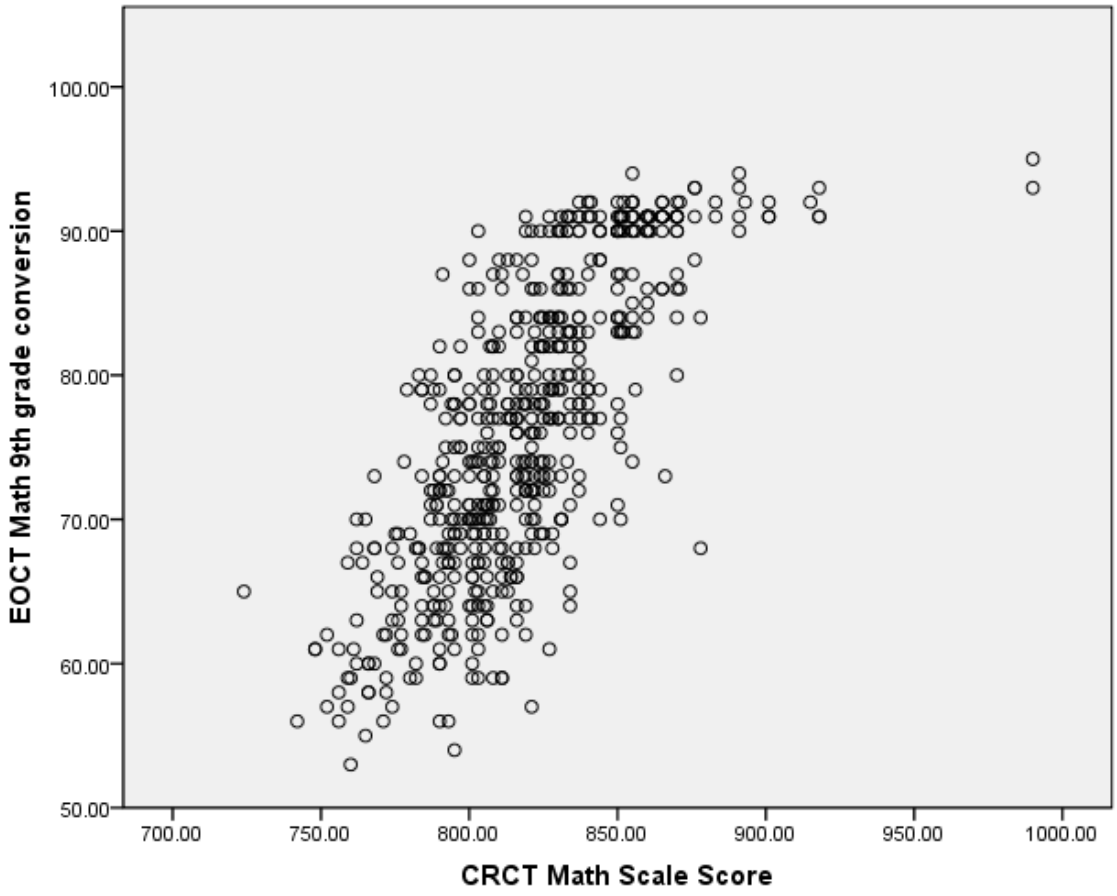


Figure 2. Scatterplot of CRCT Mathematics Scale Score by EOCT Mathematics Conversion Score

Research Question 3

If a relationship exists with the CRCT and the EOCT in the area of language arts, is the relationship strong enough that one may be used as a predictor of the other?

To assess research question three, a linear regression was conducted to determine if a strong enough relationships exists between the 8th grade CRCT and the Ninth Grade Literature EOCT so that one may be used as a predictor of the other, specifically focusing on whether or not the CRCT may be used as a predictor of the EOCT. Prior to analysis, normality and homoscedasticity were assessed. Normality was assessed by viewing P-P

plots. The data deviated very little from normality and the assumption was met. Homoscedasticity was assessed with residuals plots. The scatterplot showed little signs of heteroscedasticity and the assumption was met.

The linear regression with 8th grade CRCT language arts scores predicting Ninth Grade Literature EOCT scores was statistically significant, F (1, 598) = 519.42, $p < .001$, $R^2 = .47$, indicating that the model of 8th grade CRCT language arts scores effectively predicts Ninth Grade Literature EOCT scores. The model accounted for (R^2) 47% of the variance in EOCT language arts scores, where CRCT language arts scores ($B = 0.20$, $p < .001$) significantly contributed to the prediction of EOCT language arts scores. This suggests that as 8th grade CRCT language arts scores increased by one unit, Ninth Grade Literature EOCT scores increased by 0.20 units. The null hypothesis – there are no (strong enough) relationships that exist between CRCT and the EOCT in the area of language arts so that one may be used as a predictor of the other – can be rejected. The results of the simple linear regression are presented in Table 11.

Table 11

Simple Linear Regression with CRCT Language Arts Scores Predicting EOCT Language Arts Scores

Model	*B*	*SE*	*β*	*t*	*p*
CRCT Language Arts scores	0.20	0.01	.68	22.79	.001

Note.
B = Slope of the Line of Regression
SE = Standard Error of Estimate
β = Standardized Regression Coefficient
t = t-value
p = Level of Significance

Research Question 4

If a relationship exists with the CRCT and the EOCT in the area of mathematics, is the relationship strong enough that one may be used as a predictor of the other?

To assess research question four, a linear regression was conducted to determine if a strong enough relationships exists between the 8th grade CRCT in mathematics and the Math I EOCT so that one may be used as a predictor of the other, specifically focusing on if the 8th grade mathematics CRCT may be used as a predictor of the Math I EOCT. Prior to analysis, normality and homoscedasticity were assessed. Normality was assessed by viewing P-P plots. The data deviated very little from normality and the assumption was met. Homoscedasticity was assessed with residuals plots. The scatterplot showed little signs of heteroscedasticity and the assumption was met.

The linear regression with 8th grade mathematics CRCT scores predicting Math I EOCT scores was statistically significant, F (1, 579) = 741.62, $p < .001$, $R^2 = .56$, indicating that the model of 8th grade CRCT mathematics scores effectively predicts Math I EOCT scores. The model accounted for (R^2) 56% of the variance in predicting Math I EOCT scores, where 8th grade CRCT mathematics scores ($B = 0.24$, $p < .001$) significantly contributed to the prediction of Math I EOCT scores. This suggests that as 8th grade CRCT mathematics scores increased by one unit, Math I EOCT scores increased by 0.24 units. The null hypothesis – there are no (strong enough) relationships that exist between CRCT and the EOCT in the area of mathematics so that one may be used as a predictor of the other – can be rejected. The results of the simple linear regression are presented in Table 12.

Table 12

Simple Linear Regression with CRCT Mathematics Scores Predicting EOCT Mathematics Scores

Model	*B*	*SE*	*β*	*t*	*p*
CRCT Mathematics scores	0.24	0.01	.75	27.23	.001

Note.
B = Slope of the Line of Regression
SE = Standard Error of Estimate
β = Standardized Regression Coefficient
t = t-value
p = Level of Significance

CHAPTER FIVE: SUMMARY AND DISCUSSION

Whether or not the reauthorization of *No Child Left Behind (NCLB)* occurs, high-stakes testing will continue to be a part of school accountability measures for the foreseeable future. Even with Georgia's recent Elementary and Secondary Education Act (ESEA) waiver approval, high-stakes testing will be a great influencing factor of how school districts, schools, and students are measured. The performance scores will contribute to the determination of what services students receive, how funds are allocated to districts and schools, and how communities perceive the quality of educational services being provided to its students.

In Georgia, the Criterion Referenced Competency Test (CRCT) has been used as the accountability measure for students in grades one through eight since the initial administration in the spring of 2000. The Georgia High School Graduation Test (GHSGT) has been used as the accountability measure for high schools since the initial administration in the spring of 1993. The GHSGT is administered during the spring of the 11th grade year; however, beginning with the 2011 – 2012 school year, the state announced the phase out of the GHSGT as the accountability measure for Georgia high schools and the phase in of the End-of-Course Tests (EOCT) as the replacement measure.

As these high-stakes tests have been administered over the years, changes have occurred such as the addition of the academic content areas of science and social studies and also the change from the Quality Core Curriculum (QCC) objective based curriculum to the Georgia Performance Standards (GPS) standards-based measures. Beginning with the 2012 – 2013 school year, the CRCTs and EOCTs will again be modified to reflect the

implementation of the Common Core Georgia Performance Standards (CCGPS), which is an update of the current curriculum to a national curriculum.

The implementation schedule for the graduation accountability changes in Georgia not only affect the performance rating of the school, but also the terms of graduation for individual students. Georgia students will no longer have to take and pass the GHSGT nor will they have to pass the EOCT. However, with the increase in percentage weighting of the EOCT from 15% to 20% of the student's final end of course grade, performing well on the EOCT is of great importance. This is especially true for those students with borderline passing or failing course averages prior to the administration of the EOCT. An overall passing course average of 70 is required to earn credit for the course. Without credit for the course, the student risks not being able to graduate on time.

In addition to fulfilling the requirements of the law in regard to testing, there were other factors to consider to better understand the full scope of what the administration of high-stakes testing entails and how it affects schools and students. The review of literature for this study focused on the following areas in relation to high-stakes testing and accountability:

1) The Test – a brief history
2) Test Taking Skills
3) Influencing Factors
4) Importance of Taking the Test
5) Effects of High-Stakes Tests on Schools

A summary of the conclusions and a discussion of the findings as related to this study are provided in this chapter. Recommendations are provided for interpretation and use of this study. Further, recommendations for additional research to be conducted in this area are included. Four research questions guided the work of this study.

Research Question 1: Is there a relationship between the 8th grade CRCT scores on the language arts section and EOCT scores in the same academic areas?

Research Question 2: Is there a relationship between the 8th grade CRCT scores on the mathematics section and EOCT scores in the same academic areas?

Research Question 3: If a relationship exists with the CRCT and the EOCT in the area of language arts, is the relationship strong enough that one may be used as a predictor of the other?

Research Question 4: If a relationship exists with the CRCT and the EOCT in the area of mathematics, is the relationship strong enough that one may be used as a predictor of the other?

Additionally, null hypothesis were developed for each research question.

H_{01}: There is no relationship between the 8th Grade CRCT scores and the EOCT scores in the area of language arts.

H_{02}: There is no relationship between the 8th Grade CRCT scores and the EOCT scores in the area of mathematics.

H_{03}: The 8th Grade CRCT language arts scores do not significantly predict student achievement on the EOCT in the area of language arts.

H_{04}: The 8th Grade CRCT math scores do not significantly predict student achievement on the EOCT in the area of mathematics.

Conclusions

The purpose of this quantitative study was to examine the relationships between the 8th grade CRCT mathematics test and the 9th grade Math I EOCT, as well as, the 8th grade CRCT language arts test and the Ninth Grade Literature EOCT. Further, the study sought to determine the predictability of CRCT scores as an indicator of student performance on the 9th grade EOCT in the same content area. Only students with both CRCT and EOCT scores from years 2008 – 2011 were used in this study. Only students with first-time test taker scores were used.

There were four guiding research questions to examine the predictability over two content areas and three years of student data. Likewise, four null hypotheses were used to attempt to negate a significant relationship and predictability of CRCT scores in relation to EOCT scores in the areas of mathematics and language arts. It was concluded that a strong relationship exists between the 8th grade CRCT scores in language arts and mathematics and their corresponding content area tests in the 9th grade. It was further concluded that the 8th grade CRCT scores in mathematics and language arts may be used as predictors of student performance on the corresponding content area 9th grade EOCT. Additionally, this research concludes that the group of students that is commonly referred to as bubble students must be expanded in both areas of language arts and math in order to effectively prepare the student for the 9th grade exam.

Summary of Results

A Pearson correlation was used to determine a relationship between the 8th grade CRCT language arts scores and the Ninth Grade Literature EOCT scores. The resulting coefficient of determination, $r^2 = .47$, indicates that a student performance score on the EOCT can be directly accounted for through the performance on the CRCT 47% of the time. The relationship indicated that as student scores increase on the CRCT, they also increase on the EOCT. Said another way, students who pass the 8th grade CRCT in language arts are more likely to pass the Ninth Grade Literature EOCT. The linear regression test in regard to the predictability of the EOCT based on CRCT scores was statistically significant. This test indicates that the 8th grade language arts CRCT score may be used as a predictor for the Ninth Grade Literature EOCT.

A Pearson correlation was used to determine a relationship between the 8th Grade CRCT mathematics scores and the 9th Grade Math I EOCT scores. The resulting coefficient of determination, $r^2 = 56$, indicates that a student performance score on the EOCT can be directly accounted for through the performance on the CRCT 56% of the time. The relationship indicated that as student scores increase on the CRCT, they also increase on the EOCT. Said another way, students who pass the 8th grade CRCT in mathematics are more likely to pass the 9th Grade Math I EOCT. The linear regression test in regard to the predictability of the EOCT based on CRCT scores was statistically significant. This test indicates that the 8th grade mathematics CRCT score may be used as a predictor for the 9th Grade Math I EOCT.

The descriptive information in regard to gender for the CRCT and EOCTs provided an interesting note in addition to the statistical significance of the study. For

students who either passed or failed both the CRCT and the EOCT in the area of language arts, the percentages of male verses female held relatively close together. For males, 80% of the students who passed the CRCT also passed the EOCT and 7% of the male students who failed the CRCT also failed the EOCT. For females, 83% of the students who passed the CRCT also passed the EOCT and 2% of the female students who failed the CRCT also failed the EOCT. Another way to interpret this data is that of the students in the sample, 86% of the male CRCT scores and 94% of the female CRCT scores were predictive of their respective EOCT scores in the content area of language arts. That is an overall prediction of 90% for both males and females in the sample study.

Likewise in the area of mathematics, the percentages were very close. For males, 63% of the students who passed the CRCT also passed the EOCT and 18% of the students who failed the CRCT also failed the EOCT. For females, 65% of the students who passed the CRCT also passed the EOCT and 15% of the students who failed the CRCT also failed the EOCT. Another way to interpret this data is that of the students in the sample, 81% of the male CRCT scores and 80% of the female CRCT scores were predictive of their respective EOCT scores in the content area of mathematics. That is an overall prediction of 80% for both males and females in the sample study.

Although a statistical analysis by gender was not conducted for the purposes of this study, one may conclude that these descriptive statistics further support the results of the study in that a student's performance score on the CRCT may be used as a predictor of performance on the EOCT. The close ranges for passing the 8th grade CRCTs and the 9th grade EOCTs in both academic content areas indicate that both males and females are performing at the same levels of achievement. With performance ranges within 3% of

one another in both language arts and mathematics, one may conclude that appropriate differentiation is occurring in the classroom in regard to gender. There is no support to indicate that females outperform the males, and vice versa. The largest range of difference was in the area of language arts. There was a 5% difference between the number of females who failed the 8th grade language arts CRCT and also the Ninth Grade Literature EOCT and the number of males who performed similarly. This number reflects the gender gap research through the years of female students outperforming males in language skills. Wiens, 2005, states

> For example, the temporal lobe of the brain, which is responsible for auditory processing, speech, comprehension, naming, verbal memory, and other language functions, matures six years earlier in girls. Scientists believe that this difference could cause girls to perform language-based tasks with greater ease, especially those with verbal cues and stimuli (Wiens, 2005, p. 21).

A closer look at the CRCT mathematics scores for students who had failing Math I EOCT scores, revealed information that is important to schools when making scheduling and remediation decisions for those students. 59% of the students who failed the Math I EOCT had a score less than the cut score of 800, which is a failing score, on the mathematics CRCT. 36% of the students who failed the MA1 EOCT had a passing score ranging from 800 to 824 on the mathematics CRCT. Finally, 5% of the students who failed the Math I EOCT had a passing score of 825 or greater on the mathematics CRCT.

There is an expectation and the data strongly reinforces that students who fail the 8th grade CRCT in mathematics are likely to fail the Math I EOCT; however, the

realization that more than 40% of the students who failed the Math I EOCT had passing scores for the 8th grade mathematics CRCT is disturbing. School administrators are trained to watch those students with scores just below and just above the passing cut score of 800. Typically, scores ranging from 800 to 810 would be considered bubble students. Bubble students are those who are just a few questions away from a passing score, so they are considered in the planning for remediation support. In this sample, 14 students had 8th grade mathematics CRCT scores between 815 and 825 and also failed the Math I EOCT. Another way to think about it would be in a classroom of 28 students, half the class would pass the pre-test and fail the end test.

It is likely that this group of students would have been overlooked in the planning of remediation support services. The findings of this research indicate that schools must expand what is considered to be the range for bubble students in regard to planning for support in mathematics. The type of support required for this group of students must be different as well. These students will not likely show obvious deficiencies in their math performance nor will they require the same type of intense remediation services as would be needed by students who have more standards to master. Well-planned, effective, and continual formative assessments will give the teacher critical information in making adjustments to instruction to assist the student in preparation for the Math I EOCT. The teacher will need to have a clear understanding of the purpose and implementation of formative assessments and use of student data in order to assist these students with achieving mastery level performance on the next high-stakes test.

A review of the highest achievement scores also provides teachers and administrators with information about how to plan for those students who exceed the

standards. In this sample, of the students with an "exceeds" score on the Math I EOCT, 73% of those students also exceeded the standard on the 8th grade mathematics CRCT. 23% of those students scored between 825 and 849 on the 8th grade mathematics CRCT, and finally 5% scored between 800 and 824 on the 8th grade mathematics CRCT. This data supports the strong correlation value of the math data in that students who perform at high levels on the 8th grade assessment are very likely to perform at high levels on the 9th grade assessment. A point of emphasis should be made with the group whose scores were between 825 and 849. Because 23% of the Math I EOCT exceeds scores came from students who performed averagely on the 8th grade mathematics CRCT, this would lead one to believe that if the group of students scoring in this range were targeted with opportunities for enrichment and advanced differentiated learning activities, there may be a significant increase in the number of Math I EOCT scores that exceed the standard.

A review of the CRCT language arts scores for students who had failing scores on the Ninth Grade Literature EOCT also revealed information that is important when making scheduling and remediation decisions for those students. Of the students who failed the Ninth Grade Literature EOCT, 35% of those students had a cut score less than 800, which is a failing score on the language arts CRCT. 44% of the students who failed the Ninth Grade Literature EOCT had a score between 800 and 824 on the language arts CRCT. 19% of the students who failed the Ninth Grade Literature EOCT had a score between 825 and 849 on the language arts CRCT. Finally, only 1% of the students who failed the Ninth Grade Literature EOCT had an exceeding score, a score of 850 or higher, on the language arts CRCT.

There is an expectation and the data strongly reinforces that students who fail the 8th grade CRCT in language arts are likely to fail the Ninth Grade Literature EOCT; however, the realization that more than 60% of the students who failed the Ninth Grade Literature EOCT had passing scores for the 8th grade language arts CRCT is one to make schools stop and reexamine the students who are considered for remediation support. As with mathematics, school administrators are trained to watch those students with scores just below and just above the passing cut score of 800. Typically, scores ranging from 800 to 810 would be considered bubble students in language arts as well. In this sample, 23 students had 8th grade language arts CRCT scores between 815 and 850 and also failed the Ninth Grade Literature EOCT. Another way to think about it would be in a classroom of 28 students, 82% of the class would pass the pre-test and fail the end test.

It is likely that this group of students would have been overlooked in the planning of remediation support services. The findings of this research indicate that schools must expand what is considered to be the range for bubble students in regard to planning for support in language arts. The type of support required for this group of students must be different as well. These students will not likely show obvious deficiencies in their language arts performance nor will they require the same type of intense remediation services as would be needed by students who have more standards to master. Well-planned, effective, and continual formative assessments will give the teacher critical information in making adjustments to instruction to assist the student in preparation for the Ninth Grade Literature EOCT. The teacher will need to have a clear understanding of the purpose and implementation of formative assessments and use of student data in order to assist these students with achieving mastery on the next high-stakes test.

A review of the highest achievement scores in language arts also provides teachers and administrators with information about how to plan for those students who exceed the standards. In this sample, of the students with an "exceeds" score on the Ninth Grade Literature EOCT, 80% of those students also exceeded the standard on the 8th grade language arts CRCT. 18% of those students scored between 825 and 849 on the 8th grade language arts CRCT, and finally 2% scored between 800 and 824 on the 8th grade mathematics CRCT. These percentages support the strong correlation value of the language arts data in that students who perform at high levels on the 8th grade assessment are very likely to perform at high levels on the 9th grade assessment. As in the review of mathematics scores, a point of emphasis should be made with the group whose scores were between 825 and 849. With 18% of the Ninth Grade Literature EOCT exceeds scores coming from students who performed averagely on the 8th grade language arts CRCT, one is again led to believe that if the group of students scoring in this range were targeted with opportunities for enrichment and advanced differentiated learning activities, there may be a significant increase in the number of Ninth Grade Literature EOCT scores that exceed the standard.

The 8th Grade CRCT is administered at the end of the 8th grade year. This is a benchmark year, meaning that the student must past the CRCT in both areas of reading and mathematics in addition to meeting 8th grade course requirements to be promoted to the 9th grade. Students who do not pass the first administration of the CRCT must retest. Students without passing scores must participate in a mandatory conference with the school principal, a teacher, and the parent to determine whether or not the student indeed possesses enough skills in the area of deficiency to be *placed* at the 9th grade level. The

decision must be unanimous among all members of the deciding committee. The seriousness of the testing process at the 8th grade level sets the tone for continuation of testing at the 9th grade level.

Students who entered 9th grade for the first time on or after July 1, 2011 became exempt from having to take the Georgia High School Graduation Test (GHSGT) to meet graduation requirements. Further, those students do not have to pass the EOCTs to meet graduation requirements. However, the students do have a new requirement set for them that previous classes did not have. The EOCT scores for the students will count as 20% of the final grade for the EOCT course and all students must meet the required number of course credits to also meet graduation requirements. For these students, if a passing course grade is not met, the student will have to retake the entire class rather than just a component test. This could lead to the student not being able to graduate on time.

Discussion

The results of this study have indicated that a strong correlation exists between student performance scores on the 8th grade CRCT in the areas of language arts and mathematics and the 9th grade EOCTs in the areas of Ninth Grade Literature and Math I. Further, the study indicates that in both content areas, the CRCT scores may be used as predictors of student performance scores on the EOCTs. Venita Bruton found similar results in her 2011 dissertation study of 8th grade CRCT reading and language arts scores as predictors of the Ninth Grade Literature EOCT scores.

In Bruton's study, the average correlational coefficient for 8th grade CRCT language arts scores and Ninth Grade Literature EOCT scores was 0.75 over the 2008 – 2011 assessment period. This is a difference of 0.07 from the calculated coefficient of

0.68 found in this study. However, the results remain consistent in that both studies show a strong correlation between the 8th grade CRCT in language arts and Ninth Grade Literature EOCT. Further, Bruton found through the check for predictive value that 8th grade CRCT language arts scores increased by one unit, the Ninth Grade Literature EOCT scores increased an average of 1.06 units over the 2008 – 2011 assessment period. This is a significantly higher ratio than the increase of 0.2 units found in this study. A possible reason for the difference may be that the student test scores in language arts for this study have been more consistent in average scores over the 2008 – 2011 assessment period than those used in the Bruton study.

Implications

For the school district used in this study, CRCT scores are the basis for which the majority of instructional decisions are made for grades three through five. The scores are used to determine scheduling of students into appropriate classes for enrichment and support in these grades, with preparation beginning as early as kindergarten. The CRCT domain and subdomain scores are reviewed to look at more specific areas where students may need remediation support. Student progress scores from one year to the next are examined at teacher level to help determine the effectiveness of the teacher in raising student achievement.

The CRCT scores for the individual schools and the school district as a whole are used as a planning tool for the SMART (Specific-Measureable-Attainable-Relevant-Timely) goals that are set for the next school year. Administrators review the data from the instructional perspective and make determinations about where additional

professional development may be needed. Further, they use the data to work toward planning more collaboratively as a district in the instruction and assessment of students.

Prior to the 2011 – 2012 school year, the CRCT scores have been used to determine the effectiveness of a school and the school district in meeting Adequately Yearly Progress (AYP) as defined by the *No Child Left Behind* act. As Georgia transitions to the College and Careers Readiness Performance Index (CCRPI) as it's annual accountability measure, CRCT scores will continue to dominate instructional decisions made at the elementary and middle school levels until the implementation of the Partnership for Assessment of Readiness for College and Careers (PARCC) assessment in 2015. The results of this study demonstrate that focused and purposeful concentration on the results of the CRCT should be continued in preparation for students to transition to the high school level and the end-of-course tests that they will face when they enter 9th grade.

Limitations

A limitation of any correlational study is that the demonstration that a correlation exists between two sets of data is not the same as demonstrating causation. Though two variables may be related, it cannot be inferred that one caused the other (Howell, 2008). In this study, it is not implied that failing scores on either the language arts or math 8th grade CRCT causes a student to have a failing score on the corresponding EOCT. Further, it is not implied that a passing score on the CRCT would cause a student to achieve another passing score on the EOCT. The evidence does point strongly toward the occurrence of each of the two scenarios, but it cannot be said that the score of one *causes* the score of another.

A second limitation of the study was an influencing factor that was not identified as a variable for the study. This limitation was the existence of extenuating circumstances that may have been present on the day of, or prior to, the test administration. These extenuating circumstances could include situations such as follows:

1) The student was ill, or unable to perform at 100% on one of the test administration days.
2) The student received tutorial support in some variety between test administrations.
3) The student had new or different motivational reasons to increase or decrease effort on the test.
4) The student may have experienced a significant life change between test administrations.

Extenuating circumstances are difficult to pinpoint and label as a variable in a straightforward correlational study such as this.

The results of this study cannot be compared to similar studies of norm-referenced or other criterion referenced tests, as both the CRCT and EOCT are specific to Georgia. Only students from the sample school district were used in this study. Only first time test taker scores were used, as the ultimate goal would be to have all students pass on the first administration of either test. Students with both a first time 8th grade CRCT language arts and math score and first time EOCT Ninth Grade Literature and Math I score were used in the study, which limited the date range from fall 2008 to winter 2011. This sample represented three graduation classes of data and a generously sized sample;

however, the demographics of the school system restrict the data to a 90+ percent all-white sample. The results may not be generalized to other systems with a more diverse population.

Recommendations

The overarching purpose of this study was to determine if CRCT results in language arts and mathematics could accurately predict student scores on the EOCT in the same academic content areas. Because the data resulted in a statistical significance in both academic content areas, the school district should continue to place great emphasis on the preparation for the CRCT instructionally. Additionally, the school district should provide additional focus on the analysis and use of the data from the professional perspective. Formal correlational studies and linear regressions are not practical for systems to run on their school data without the presence of a person in a statistical-type position. However, the descriptive statistics used in this study provide equally powerful information to schools and could be provided to schools, along with professional development, through the district's testing office with appropriate time allocated for personnel to conduct and prepare for such tests and presentations.

Having research to support the CRCT as an indicator of performance on the EOCT will provide support and reliable information to the high school level in making decisions to best prepare for the instructional needs of the incoming 9th grade students. The high school will better be able to schedule support classes, implement pre assessments to adjust curricular maps and pacing guides, and use formative assessments in preparation for the final EOCT. The results of this study provide validation to the assessment data that transfers with the students from the middle to the high school level.

With the CRCT being an instrument that is unfamiliar to high school staff, it is possible that it may not be regarded with the same intensity in instructional decision-making, as are the assessments that are more familiar at that grade span level.

The researcher further recommends that the high school teachers and administrators begin vertical teaming sessions with the middle school teachers and administrators when reviewing the CRCT data of upcoming 9th grade students. The middle school teachers are very comfortable and confident in CRCT data analysis. This conversation between both groups would assist the high school teachers with making decisions about how to use the data to plan support and possibly enrichment as well. Now that it has been determined that the performance on one assessment directly affects the outcome of the next level assessment, it should be easier to tie the two levels together in discussion of what is best for helping students to succeed rather than thinking of each grade-span level as an island unto itself.

Recommendations for Future Research

The current study is significant because it reviewed the relationship between the 8th grade CRCT and 9th grade EOCT in the areas of language arts and mathematics and the predictability of student success at a key transitional grade-span level. The conclusions of the study indicate that student achievement on the EOCT can be accurately predicted when one considers the student's achievement on the CRCT. However, further research in this area is still needed.

Additional research should include the evaluation of students in a more demographically diverse population. It should also include the previous benchmark and grade-span transitional level of elementary to middle school, the 5th grade to 6th grade

transition. Bringing in additional factors to review such as subgroups, which may include students with disabilities, economically disadvantaged, and second language learners would broaden the scope of the study.

Additional research should also include the academic areas of science and social studies. Prior to the 2011 – 2012 school year, these two content areas were not considered in accountability measures. There were no Annual measureable Objectives (AMOs) for these subjects and they did not have an impact on whether or not the school or school district met AYP. With the implementation of the College and Careers Readiness Performance Index (CCRPI) as the measure of accountability for Georgia, science and social studies will be included in those final scorings. Although Georgia schools review their performance data in these two areas, it has not had the same attention as reading, language arts, and mathematics. Science and social studies will not only be used in the CCRPI calculations at the elementary and middle school levels, but it will be used at the high school level as well. Formal EOCTs in social studies are not typically administered in Georgia until the 11th grade year; however, 9th graders take the Physics EOCT. Thus, there is another transitional assessment for consideration for those rising 9th graders.

Georgia educators are well trained in the academic content curriculum standards, unit planning, and administration of high-stakes tests. The weakness they face is in the area of test score interpretation and how the scores of one assessment may influence the scores on the next assessment to follow. Trend performance data is reviewed in schools across the state, but training is not provided nor is statewide correlational information provided that gives educators the broader view of how the tests work together.

The comparisons made in this study are reflective of a small sample when compared to all the tests that are administered annually across the state. Although, the results will prove beneficial for the sample school system, and they may be used in a generalized format, it would be helpful for the state to conduct such a comparison test on the large scale, which would include all the various demographic and special populations. This would open up the opportunity for greater discussion on the state level in regard to review of the tests, pockets of performance verses non-performance across the state, and training sessions that may be needed at both the administrator and teacher level.

Qualitative factors may be brought into a future study to examine the effects of student motivation, course performance, teacher effectiveness, tutorial support, and school leadership on the outcomes of overall student performance. Student learning styles, interests, and discipline history may also provide insight into student performance on the assessments measured in this study. The missing third variable of extenuating circumstances could be addressed in the format of such a qualitative study.

When looking at standardized testing, there are many factors that contribute to student achievement. For schools and school districts looking for bottom-line data that is supported by research to make immediate instructional decisions, this study is appropriate and beneficial. The results are indicative of the need for data review and collaboration between the middle and high school levels, specifically between the 8th and 9th grade teachers. Following an aligned curriculum that has been reviewed from kindergarten through the senior year is not in itself enough to ensure the students make the achievement progressions that are necessary in the transition from one grade to the next. Grade level transitions must be viewed as a collaborative team effort to keep the students

moving in a forward direction and to close any gaps with standards that may exist at the end of the current school year.

As Georgia, in addition to many other states, transitions into the world of common core standards and national achievement tests, it is easy to lose sight of the work that is before educators today, which is continuing to monitor and help prepare students for the CRCT and EOCT as they will both continue to be requirements for Georgia students for the next three standardized assessment periods. Until that time has passed, educators are bound by the code of ethics for educators to make the best decisions possible for the advancement of student achievement with the assessments and data that is available now. Hoping that students will do well is not an option for the educator who is committed to children and their academic growth. The data is available along with the research to support the predictability of using one assessment to prepare for the next so all students may experience success. For the teachers and administrators of the school district used in this study, this information will aide in reaching their number one commitment to students, which is graduation for all.

REFERENCES

Baines, L. A., & Slutsky, R. (2009). Developing the sixth sense: Play. *Educational Horizons, 87*(2), 97-101.

Bernhardt, V. (2009). *Data, data everywhere*. Larchmont, NY: Eye on Education.

Black, P., & William, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice*, *5*(1), 7-71.

Black, P., & William, D. (1998). Inside the black box. *Phi Delta Kappan, 80*(2), 139-148.

Blom, L. C., Alvarez, J., Zhang, L., & Kolbo, J. (2011). Associations between Health-Related Physical Fitness, Academic Achievement and Selected Academic Behaviors of Elementary and Middle School Students in the State of Mississippi. ICHPER-SD Journal Of Research, 6(1), 13-19.

Brookhart, S. (2009). The many meanings of "multiple measures". *Educational Leadership, 67*(3), 6-12.

Bruton, V. (2011). *Georgia high-stakes testing: The correlation between eighth grade and ninth grade achievement*. (Doctoral dissertation, Liberty University) Retrieved from http://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1512&context=doctoral&sei-redir=1&referer=http://www.google.com/url?sa=t&rct=j&q=georgia%20high-stakes%20testing%3A%20the%20correlation%20between%20eighth%20grade%20and%20ninth%20grade%20achievement&source=web&cd=2&ved=0CCkQFjAB&url=http%3A%2F%2Fdigitalcommons.liberty.edu%2Fcgi%2Fviewcontent.c

gi%3Farticle%3D1512%26context%3Ddoctoral&ei=b22IT8GpJYak8gTt1vzVCQ&usg=AFQjCNE6qzpCevSWDeyo1EeLP2MF4oFQTA.

Carnoy, M. (2005). Have state accountability and high-stakes tests influenced student progression rates in high school? *Educational Measurement: Issues and Practice, 24*(4), 19-31.

Carter, E., Wehby, J. et al. (2005). Preparing adolescents with high-incidence disabilities for high-stakes testing with strategy instruction. *Preventing School Failure, 49*(2), 55-72.

Certo, J. (2006). Beginning teacher concerns in an accountability-based testing environment. *Journal of Research in Childhood Education, 20*(4), 331-349.

Chance, P. & Segura, S. (2009). A rural high school's collaborative approach to school improvement. *Journal of Research in Rural Education (Online), 24*(5), 1-12.

Chomitz, V., Slining, M. et al. (2009). Is there a relationship between physical fitness and academic achievement? Positive results from public school children in the northeastern United States. *Journal of School Health, 79*(1), 30-37.

Choudhury, A. (2010). *Cronbach*. Retrieved from http://www.experiment-resources.com/cronbachs-alpha.html

Cohen, A., Gregg, N., & Deng, M. (2005). The role of extended time and item content on a high-stakes Mathematics test. *Learning Disabilities Research & Practice, 20*(4). 225-233.

Conyers, J., Andrews, K., & Marzano, R. (2001). Developing district made criterion referenced tests: A standard excellence for effective schools. *Education, 106*(2), 141-149.

Diamond, J. (2007). Where the rubber meets the road: Rethinking the connection between high-stakes testing policy and classroom instruction. *Sociology of Education, 80*(4), 285-303.

Eklof, H. (2010). Skill and will: test-taking motivation and assessment quality. *Assessment in Education: Principals, Policy & Practice*, *17*(4), 345-356.

Elementary and Secondary Education Act (n.d.). Retrieved from http://www2.ed.gov/policy/elsec/leg/esea02/beginning.html

Fletcher, J. M., Francis, D. J., O'Malley, K., Copeland, K., Mehta, P., Caldwell, C. J., & ... Vaughn, S. (2009). Effects of a bundled accommodations package on high-stakes testing for middle school students with reading disabilities. *Exceptional Children, 75*(4), 447-463.

Frey, N., & Fisher, D. (2008). The under-appreciated role of humiliation in the middle school. *Middle School Journal, 39*(3), 4-12.

Fuchs, L. & Fuchs, D. (1986). Effects of systematic formative evaluation: A meta-analysis. *Exceptional Children*, *53*(3), 199-208.

Gallagher, C., & Ratzlaff, S. (2007). The road less traveled. *Educational Leadership, 65*(4), 48-53.

Georgia Department of Education. (2008). *Validity and reliability for the 2008 Criterion-Referenced Competency Tests.*

Georgia Department of Education. (2009). *Validity and reliability for the 2009 Criterion-Referenced Competency Tests.*

Georgia Department of Education. (2009). *Validity and reliability for the 2008-2009 Georgia End-of-Course tests.*

Georgia Department of Education. (2010). *Validity and reliability for the 2010 Criterion-Referenced Competency Tests.*

Georgia Department of Education. (2010). *Validity and reliability for the 2009-2010 Georgia End-of-Course tests.*

Georgia Department of Education. (2011). *Validity and reliability for the 2011 Criterion-Referenced Competency Tests.*

Georgia Department of Education. (2011). *Validity and reliability for the 2010-2011 Georgia End-of-Course tests.*

Georgia Department of Education. (2012). *End of course tests (EOCT) pre-administration webinar spring 2012* [PowerPoint Slides]. Retrieved from Georgia Department of Education website: *http://www.gadoe.org/Curriculum-Instruction-and-Assessment/Assessment/Pages/EOCT-Presentations.aspx.*

Georgia Department of Education. (2012). *Spring 2012 Pre-Administration Webinar Georgia High School Graduation Test* [PowerPoint Slides,]. Retrieved from Georgia Department of Education Website: *http://www.gadoe.org/Curriculum-Instruction-and-Assessment/Assessment/Pages/GHSGT.aspx.*

Georgia Department of Education. (2008). What Georgia educators need to know about Georgia's testing program. Retrieved from *http://public.doe.k12.ga.us/DMGetDocument.aspx/Testing%20Newsletter%202008.pdf?p=6CC6799F8C1371F61271B77DDF680FCDA8482E4F53A88A0F940B5CD46CDF40B7&Type=D*

Griswold, P. (2005). Relating academic data from the elementary grades to state test results in high school: Implications for school improvement through professional development. *Journal of Research in Childhood Education, 20*(2), 65-74.

Guskey, T. (2000). Grading policies that work against standards…and how to fix them. *NASSP Bulletin, 84*(620), 20-29.

Guskey, T. (2003). How classroom assessments improve learning. *Using Data to Improve Student Achievement,* (60)5, 6-11.

Guskey, T. (2007). The rest of the story. *Educational Leadership, 65*(4), 28-35.

Hess, F. (2008). The new stupid. *Educational Leadership, 66*(4), 12-17.

Hollingworth, L., Dude, D. J., & Shepherd, J. K. (2010). Pizza parties, pep rallies, and practice tests: Strategies used by high school principals to raise percent proficient. *Leadership And Policy In Schools, 9*(4), 462-478.

Howell, D. (2008). *Fundamental statistics for the behavioral sciences 6th edition.* Belmont, CA: Thomson Wadsworth.

Jaekyung, L. (2008). Is test-driven external accountability effective? Synthesizing the evidence from cross-state causal-comparative and correlational studies. *Review of Educational Research, 78*(3), 608 – 645.

Jones, B. (2007). The unintended outcomes of high-stakes testing. *Journal Of Applied School Psychology, 23*(2), 65-86.

Judson, E. (2007). Retaking a high stakes Mathematics test: Examination of school interventions and environments. *American Secondary Education, 36*(1), 15-30.

Kaye, C. (2010). Work that is real. *Principal Leadership, 10*(6), 18-24.

Klein, A., Zevenbergen, A. & Brown, N. (2006). Managing standardized testing in today's schools. *The Journal of Educational Thought*, *40*(2), 145-157.

Lee, J. (2008). Is test-driven external accountability effective? Synthesizing the evidence from cross-state causal-comparative and correlational studies. *Review of Educational Research*, *78*(3), 608-645.

McTighe, J., & O'Connor, K. (2006). Seven practices for effective learning. *Educational Leadership,63*(none), 13-19.

Moon, T. R., Brighton, C. M., Jarvis, J. M., Hall, C. J., & National Research Center on the Gifted and, T. (2007). State standardized testing programs: Their effects on teachers and students. *National Research Center On The Gifted And Talented.*

Neild, R., Balfanz, R., & Herzog, L. (2007). An early warning system. *Educational Leadership, 65*(2), 28-33.

No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425 (2002).

No child left behind: Action briefs. (n.d.). Retrieved from http://www.ncpie.org/nclbaction/standards_assessment.html.

Plake, B. S. (2002). Evaluating the technical quality of educational tests used for high-stakes decisions. *Measurement And Evaluation In Counseling And Development, 35*(3), 144-52.

Popham, W. (2007). Instructional insensitivity of tests: Accountability's dire drawback. *Phi Delta Kappan, 89*(2), 146-150.

Putwain, D., Woods, K., & Symes, W. (2010). Personal and situational predictors of test

anxiety of students in post-compulsory education. *British Journal of Educational Psychology, 80*(none), 137-160.

Ravitch, D. (2010). *Death and life of the great American school system – How testing and choice are undermining education.* New York, NY: Basic Books.

Samson, G. (1985). Effects of training in test-taking skills on achievement test performance: A quantitative synthesis. *Journal of Educational Research, 78*(5), 261-266.

Sato, M., Wei, R. & Darling-Hammond, L. (2008). Improving teachers' assessment practices through professional development: The case of national board certification. *American Educational Research Journal, 45*(3), 669-700.

Schlecty, P. (1997). *Inventing better schools – An action plan for educational reform.* San Francisco, California: Jossey-Bass, Inc.

Scot, T., Callahan, C. M., & Urquhart, J. (2009). Paint-by-number teachers and cookie-cutter students: the unintended effects of high-stakes testing on the education of gifted students. *Roeper Review, 31*(1), 40-52.

Shriberg, D. (2006). The role of demographics and opportunities to learn in predicting performance on a high-stakes test. *Journal of Applied School Psychology, 23*(1), 59 – 75.

Siegrist, G., Weeks, W., Pate, J., & Monetti, D. (2009). Principals' experience, educational level, and leadership practices as predictors of Georgia High School Graduation Test results. *Journal of Philosophy and History of Education 59*(none), 174-179.

Simon, M. (2010). Assessment versus achievement: Winner takes all! *Florida Journal Of Educational Administration & Policy, 3*(2), 73-85.

Social Research Methods, (n.d.). Retrieved from http://www.socialresearchmethods.net

Standard error of measurement. (2011). Retrieved from http://www.doe.virginia.gov/testing/scoring/standard_error_measurement/index.shtml.

Stiggins, R. (2004). New assessment beliefs for a new school mission. *Phi Delta Kappan, 86*(1), 22-27.

Stiggins, R., & DuFour, R. (2009). Maximizing the power of formative assessments. *Phi Delta Kappan, 90*(9), 640-644.

Turner, S. L. (2009). Ethical and appropriate high-stakes test preparation in middle school: Five methods that matter. *Middle School Journal, 41*(1), 36-45.

U.S. Census Bureau. (2010). Retrieved from http://www.census.gov

Vogler, K. (2002). The impact of high-stakes, state-mandated student performance assessment on teachers' instructional practices. *Education, 123*(1), 39-55.

Vyrostek, S. (2009). Accountability the individual way. *Educational Horizons, 87*(2), 128-134.

Wang, S. (2004). *Online or paper: Does delivery affect results? Administration mode comparability study for Stanford diagnostic reading and mathematics tests.* San Antonio, TX: Pearson Education. Retrieved from http://www.pearsonassessments.com/NR/rdonlyres/D381C2EA-18A6-4B52-A5DC-DD0CEC3B0D40/0/OnlineorPaper.pdf.

Wayne, A. (2007). High-stakes testing and curricular control: A qualitative metasynthesis. *Educational Researcher, 36*(5), 258-267.

Wiens, K. (2005). The new gender gap: What went wrong? *Journal Of Education, 186*(3), 11-27.

Wiggins, G. (2010). Bashing state tests. *Educational Leadership, 67*(6), 49-52.

Wiliam, D. (2007). Changing classroom practice. *Educational Leadership, 65*(4), 36-42.

Ysseldyke, J., Nelson, J., Christenson, S., Johnson, D. R., Dennison, A., Triezenberg, H., & ... Hawes, M. (2004). What we know and need to know about the consequences of high-stakes testing for students with disabilities. *Exceptional Children, 71*(1), 75-95.

Appendix A

Language Arts Data

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
1	3	855	3	90
2	2	811	2	75
3	1	785	1	57
4	3	880	3	93
5	2	828	2	79
6	2	846	3	90
7	3	855	3	91
8	2	835	2	71
9	2	831	2	88
10	2	825	2	82
11	3	855	2	79
12	3	855	3	91
13	3	855	3	90
14	2	809	2	76
15	3	871	2	88
16	2	831	2	79
17	2	831	2	75
18	3	881	3	90
19	3	871	3	91
20	2	832	2	78
21	3	864	3	90
22	2	809	1	63
23	3	880	3	90
24	3	893	3	92
25	1	769	1	65
26	3	950	3	95
27	3	881	3	90
28	3	864	2	86
29	2	801	1	60
30	3	911	3	90
31	2	835	2	82
32	3	866	3	91
33	3	866	3	94
34	3	866	3	93
35	2	842	2	78
36	2	801	2	77
37	3	893	3	93
38	2	834	3	91

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
39	2	823	2	86
40	3	855	3	92
41	2	846	2	82
42	3	850	2	85
43	2	820	2	70
44	2	811	1	68
45	2	814	2	71
46	3	881	3	92
47	3	871	3	93
48	2	842	2	73
49	3	950	3	93
50	2	806	2	75
51	2	838	1	68
52	3	854	2	78
53	3	873	3	91
54	2	842	2	88
55	2	820	2	79
56	3	850	2	78
57	2	823	1	64
58	3	866	3	91
59	2	846	2	79
60	3	893	3	92
61	3	913	3	93
62	1	783	1	61
63	1	783	2	73
64	2	804	2	73
65	3	855	2	78
66	3	860	3	90
67	2	845	2	84
68	2	835	3	91
69	2	846	2	71
70	3	871	3	93
71	2	803	2	76
72	2	831	1	64
73	3	893	3	92
74	3	873	3	90
75	3	871	3	93
76	1	791	1	60
77	3	880	3	91
78	3	850	2	88
79	2	835	2	88
80	2	831	1	51

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
81	2	828	2	85
82	2	803	1	58
83	2	823	2	80
84	2	820	2	76
85	2	832	2	85
86	2	820	2	79
87	3	850	3	90
88	3	913	3	91
89	2	842	1	69
90	3	866	3	91
91	2	835	2	78
92	2	834	2	78
93	2	822	3	91
94	3	893	3	92
95	2	820	2	76
96	2	823	1	63
97	2	838	3	90
98	1	788	1	69
99	2	846	3	91
100	3	873	3	91
101	3	860	3	90
102	3	855	3	92
103	2	846	2	88
104	2	814	2	85
105	2	842	2	88
106	2	811	2	73
107	3	913	3	92
108	3	854	3	90
109	2	838	2	84
110	3	860	3	90
111	3	854	2	84
112	3	873	2	77
113	2	814	3	90
114	2	817	2	75
115	3	913	3	91
116	2	845	2	80
117	1	772	1	65
118	2	846	2	87
119	2	825	2	85
120	2	838	2	79
121	2	828	2	72
122	2	802	1	67

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
123	3	850	3	91
124	2	835	2	86
125	3	911	3	92
126	2	820	2	80
127	2	838	2	82
128	3	855	3	92
129	2	834	1	69
130	3	881	3	92
131	3	871	3	90
132	2	820	2	86
133	1	785	2	77
134	3	864	2	85
135	2	831	2	75
136	2	806	1	67
137	2	835	2	80
138	3	855	3	90
139	2	832	2	78
140	3	860	3	90
141	3	880	3	90
142	3	859	2	84
143	2	828	3	90
144	2	823	2	87
145	2	832	2	75
146	2	832	2	76
147	2	831	2	77
148	3	855	3	91
149	2	817	2	80
150	3	850	2	80
151	2	835	2	74
152	3	866	2	84
153	2	835	2	75
154	1	786	2	86
155	3	871	3	91
156	2	838	2	84
157	2	841	2	85
158	1	768	1	56
159	2	838	2	87
160	1	794	1	56
161	1	786	1	60
162	3	859	3	91
163	3	866	3	92
164	2	831	2	79

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
165	2	835	2	78
166	3	891	3	90
167	2	845	2	84
168	2	846	3	91
169	2	825	2	76
170	3	860	3	91
171	3	873	3	90
172	3	893	3	93
173	2	831	2	87
174	3	854	2	77
175	3	860	3	90
176	3	913	3	92
177	2	831	2	74
178	2	842	2	86
179	2	811	2	70
180	3	882	3	91
181	3	950	3	95
182	2	841	2	85
183	3	891	2	84
184	3	950	3	91
185	2	842	2	74
186	3	891	3	93
187	2	817	2	72
188	3	873	3	91
189	2	831	2	82
190	3	860	2	86
191	3	882	3	91
192	3	860	3	91
193	3	860	2	87
194	3	850	3	91
195	3	866	2	85
196	3	850	2	82
197	2	832	2	75
198	1	796	2	71
199	2	835	2	82
200	3	850	3	91
201	2	846	2	84
202	2	838	3	90
203	2	834	3	91
204	2	823	1	69
205	3	866	3	91
206	2	842	2	80

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
207	1	775	1	60
208	2	832	2	86
209	2	823	2	87
210	3	881	3	91
211	2	838	2	86
212	3	871	3	90
213	3	873	3	94
214	2	838	2	77
215	2	846	3	90
216	2	845	2	84
217	3	891	3	94
218	2	806	2	70
219	2	823	2	79
220	2	842	2	88
221	2	832	3	91
222	2	825	2	77
223	3	855	3	91
224	2	828	2	80
225	2	825	2	80
226	1	791	2	70
227	3	859	2	85
228	1	796	1	68
229	3	873	3	92
230	2	838	2	80
231	3	880	3	91
232	3	893	3	91
233	1	785	2	75
234	2	842	2	86
235	2	812	1	59
236	3	866	2	84
237	3	913	3	91
238	2	842	2	78
239	1	777	2	74
240	2	842	2	88
241	2	846	2	80
242	2	809	1	51
243	2	828	2	76
244	3	855	2	86
245	2	832	2	85
246	2	832	3	91
247	3	850	3	91
248	3	860	3	91

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
249	3	873	2	82
250	2	809	2	72
251	1	783	1	64
252	3	913	3	93
253	2	828	2	72
254	3	850	2	80
255	2	820	2	80
256	2	838	3	91
257	2	800	2	71
258	3	950	3	96
259	2	846	3	92
260	2	832	3	90
261	2	811	1	63
262	2	846	3	92
263	2	841	2	80
264	3	866	3	92
265	2	835	2	78
266	3	893	3	92
267	2	820	2	84
268	3	893	3	92
269	2	835	2	77
270	3	911	3	96
271	3	866	3	90
272	2	832	2	79
273	2	834	2	72
274	2	820	2	83
275	2	832	2	85
276	2	845	2	85
277	3	881	3	91
278	3	866	2	79
279	3	873	3	94
280	2	835	2	77
281	3	950	3	93
282	3	854	2	77
283	2	842	2	84
284	2	831	2	86
285	2	835	2	77
286	3	913	2	88
287	2	812	2	81
288	2	832	1	65
289	2	842	2	85
290	2	809	2	79

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
291	3	880	2	86
292	2	838	2	80
293	3	882	2	82
294	2	831	3	91
295	1	783	2	71
296	2	823	2	75
297	2	806	2	78
298	3	871	2	85
299	2	825	1	65
300	1	791	1	59
301	3	873	3	90
302	2	814	2	72
303	2	828	3	91
304	3	864	3	96
305	1	795	2	75
306	3	855	2	81
307	3	860	3	90
308	2	828	2	76
309	3	950	3	93
310	2	838	2	86
311	3	873	3	93
312	2	812	2	84
313	2	802	2	79
314	3	950	3	93
315	2	842	2	87
316	2	842	2	88
317	3	866	3	90
318	3	859	2	78
319	2	846	2	86
320	2	814	1	56
321	2	838	2	87
322	3	893	3	93
323	3	866	3	96
324	2	825	3	90
325	2	845	2	80
326	1	772	2	73
327	2	838	2	86
328	2	819	2	88
329	2	838	2	84
330	1	795	2	86
331	1	793	1	55
332	3	850	3	91

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
333	2	838	2	82
334	3	855	3	92
335	2	822	1	58
336	2	825	3	91
337	2	826	2	76
338	2	828	1	69
339	2	835	3	90
340	3	850	3	90
341	2	823	2	78
342	3	854	2	82
343	1	793	1	60
344	1	796	1	55
345	3	860	3	92
346	3	871	3	90
347	3	850	2	87
348	1	791	1	60
349	2	801	2	73
350	2	835	3	91
351	2	825	2	73
352	2	831	2	82
353	2	819	2	81
354	3	893	3	90
355	2	804	2	78
356	3	850	2	82
357	3	860	3	91
358	2	828	3	90
359	2	820	2	82
360	2	835	2	87
361	3	913	3	91
362	3	855	3	92
363	2	842	2	82
364	3	855	3	91
365	3	855	3	91
366	2	835	2	74
367	2	842	2	86
368	2	809	2	79
369	3	850	3	92
370	3	880	3	91
371	2	845	1	69
372	2	846	2	86
373	3	866	2	85
374	2	846	2	72

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
375	3	866	3	91
376	3	880	3	90
377	2	828	2	83
378	2	835	2	86
379	2	803	1	69
380	3	860	3	91
381	3	882	3	91
382	2	825	3	90
383	2	812	1	68
384	3	850	3	92
385	3	893	3	91
386	3	854	2	75
387	2	811	1	65
388	2	811	1	67
389	2	845	3	91
390	1	796	1	61
391	3	855	2	82
392	3	913	3	92
393	3	950	3	95
394	3	866	2	87
395	1	769	2	76
396	2	825	2	82
397	2	828	1	45
398	2	838	2	86
399	3	880	3	91
400	1	790	1	57
401	2	842	3	91
402	3	893	3	91
403	3	850	2	79
404	2	842	2	80
405	2	846	2	85
406	3	893	3	93
407	3	880	2	78
408	2	825	2	75
409	3	866	2	82
410	3	893	3	94
411	3	873	3	92
412	2	832	2	77
413	2	809	1	68
414	3	913	3	92
415	2	804	1	50
416	3	854	2	86

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
417	3	850	2	84
418	3	891	3	91
419	3	864	2	84
420	3	854	3	90
421	3	850	2	79
422	2	828	2	81
423	3	950	3	91
424	2	825	2	70
425	3	864	2	86
426	1	788	2	77
427	3	871	3	92
428	2	835	2	78
429	2	809	1	62
430	3	860	2	83
431	2	838	2	77
432	2	842	3	91
433	3	860	3	92
434	1	796	1	64
435	1	778	2	72
436	3	850	2	86
437	2	832	2	84
438	3	913	3	93
439	2	820	2	77
440	2	835	3	90
441	1	762	2	73
442	2	846	3	91
443	2	828	1	69
444	2	835	2	70
445	3	850	3	92
446	3	866	3	92
447	1	772	2	74
448	2	819	1	69
449	2	832	3	90
450	2	846	2	81
451	2	817	2	82
452	3	893	3	92
453	3	893	3	93
454	3	860	2	87
455	2	842	2	72
456	3	855	3	90
457	2	822	2	75
458	2	842	3	90

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
459	3	859	3	90
460	2	841	3	91
461	3	882	3	90
462	2	835	2	84
463	2	828	2	88
464	1	790	2	79
465	3	873	3	94
466	2	831	2	73
467	2	822	1	68
468	2	815	2	73
469	1	780	1	61
470	2	835	2	88
471	2	831	2	85
472	2	811	2	78
473	3	911	2	80
474	2	838	3	91
475	2	817	1	66
476	3	860	2	74
477	2	822	2	85
478	3	873	3	94
479	2	845	2	84
480	3	855	3	91
481	2	819	3	90
482	2	823	2	85
483	2	846	2	79
484	2	814	2	75
485	3	855	3	91
486	3	854	2	85
487	3	855	2	81
488	3	893	2	82
489	2	823	2	79
490	2	825	2	79
491	3	893	3	90
492	2	846	2	88
493	2	822	2	81
494	2	828	3	91
495	2	812	1	65
496	2	825	2	75
497	3	859	2	85
498	3	866	3	93
499	2	846	2	84
500	3	866	2	83

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
501	2	846	2	87
502	2	828	2	77
503	2	835	2	73
504	2	842	2	86
505	3	864	2	86
506	2	812	2	84
507	2	842	2	84
508	2	804	2	77
509	2	822	2	79
510	3	880	3	91
511	3	873	3	91
512	3	873	3	91
513	2	814	2	83
514	3	873	2	81
515	3	866	3	91
516	3	850	3	93
517	3	866	3	91
518	2	809	2	82
519	3	950	3	92
520	2	846	1	68
521	2	823	2	78
522	3	881	3	91
523	2	814	3	90
524	2	832	2	85
525	3	871	3	92
526	3	880	3	92
527	1	780	1	57
528	2	828	2	81
529	2	803	1	65
530	2	841	3	90
531	2	832	2	73
532	2	846	2	86
533	2	845	2	88
534	3	913	3	93
535	2	819	2	70
536	3	893	3	91
537	3	873	3	90
538	3	860	2	85
539	3	882	3	96
540	2	814	2	83
541	3	850	2	77
542	2	845	2	86

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
543	3	893	3	92
544	3	893	3	93
545	3	859	3	90
546	3	850	1	66
547	3	855	3	93
548	3	882	3	92
549	2	846	3	90
550	3	864	3	92
551	1	793	2	71
552	3	854	3	91
553	3	850	3	91
554	1	791	1	66
555	2	846	3	90
556	3	873	2	74
557	3	866	3	92
558	2	822	2	78
559	2	817	1	66
560	3	882	3	92
561	2	832	3	90
562	2	831	2	87
563	3	850	3	91
564	3	866	3	91
565	2	828	2	78
566	2	838	2	88
567	3	882	3	91
568	2	846	2	87
569	3	871	2	79
570	2	835	2	72
571	1	788	1	69
572	2	834	2	77
573	2	832	2	82
574	2	814	2	82
575	3	860	3	91
576	2	831	2	84
577	2	841	2	85
578	2	842	2	77
579	3	850	3	91
580	2	806	1	57
581	3	850	3	96
582	3	860	3	90
583	2	828	1	64
584	3	850	2	84

Student #	ELA CRCT Performance Level	ELA CRCT Scale Score	9th Gr Lit EOCT Performance Level	9th Gr Lit EOCT Grade Conversion
585	2	825	2	85
586	3	893	3	90
587	2	846	2	79
588	3	913	3	91
589	2	835	3	90
590	3	866	3	92
591	2	828	2	80
592	2	823	2	86
593	2	809	1	60
594	3	893	3	91
595	2	841	3	91
596	2	842	3	91
597	3	893	3	93
598	2	820	1	69
599	2	812	2	74
600	2	841	2	84

Appendix B

Mathematics Data

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
1	3	865	3	91
2	1	768	2	73
3	2	824	2	82
4	1	742	1	56
5	2	821	2	75
6	2	837	2	82
7	1	793	2	72
8	2	827	2	79
9	2	805	2	73
10	2	806	2	78
11	2	827	2	80
12	2	813	2	88
13	2	822	2	80
14	1	790	1	60
15	2	805	1	68
16	1	790	2	70
17	3	870	3	92
18	2	822	2	76
19	1	756	1	56
20	3	871	3	92
21	3	855	2	84
22	1	790	1	56
23	3	915	3	92
24	3	860	3	90
25	2	813	1	65
26	1	795	2	70
27	2	828	2	77
28	3	850	2	87
29	3	851	3	91
30	3	870	3	90
31	1	797	2	75
32	1	789	1	68
33	2	805	2	75
34	3	990	3	93
35	1	795	1	61
36	3	855	2	74
37	2	808	2	87
38	2	816	1	64
39	1	774	1	65

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
40	2	816	2	71
41	2	841	2	88
42	2	841	3	91
43	2	844	3	91
44	2	816	2	74
45	2	825	2	77
46	3	852	3	92
47	1	787	2	70
48	2	827	1	61
49	2	834	1	67
50	2	807	2	70
51	3	891	3	91
52	3	865	3	91
53	1	795	2	73
54	2	802	2	70
55	2	828	2	79
56	1	793	1	63
57	2	837	2	86
58	2	825	2	72
59	3	865	3	92
60	2	844	3	90
61	1	762	1	60
62	2	819	1	64
63	1	766	1	58
64	2	805	2	79
65	2	806	2	71
66	1	790	2	73
67	2	803	2	83
68	2	827	3	90
69	1	783	1	68
70	1	795	2	75
71	3	866	2	73
72	1	784	1	66
73	3	855	3	92
74	2	811	1	68
75	2	816	1	67
76	3	860	2	84
77	1	793	1	68
78	2	821	2	74
79	1	752	1	57
80	1	797	1	68
81	2	802	1	65
82	2	825	2	73

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
83	2	800	1	64
84	3	850	3	90
85	2	831	2	70
86	3	851	2	75
87	2	801	1	67
88	2	830	2	82
89	1	795	2	71
90	2	844	2	88
91	1	785	1	66
92	1	772	1	58
93	3	855	3	91
94	1	782	1	68
95	2	808	2	74
96	3	855	2	83
97	2	811	1	69
98	3	870	2	87
99	2	833	2	86
100	3	918	3	91
101	1	771	1	56
102	1	752	1	62
103	3	851	3	91
104	1	794	2	70
105	1	785	1	66
106	2	800	2	71
107	3	855	2	85
108	2	819	1	62
109	1	795	1	69
110	2	834	2	83
111	2	807	2	72
112	3	865	2	86
113	3	918	3	91
114	1	761	1	61
115	2	810	2	75
116	1	784	2	73
117	2	803	1	65
118	2	824	1	69
119	2	821	3	90
120	2	821	2	86
121	1	788	1	64
122	2	825	2	82
123	2	833	3	91
124	2	802	1	69
125	3	850	2	78

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
126	3	856	2	83
127	2	830	2	83
128	2	806	1	63
129	2	805	1	64
130	1	765	1	55
131	2	800	2	88
132	2	819	2	79
133	2	833	3	90
134	1	791	2	87
135	2	806	2	70
136	2	819	2	78
137	2	816	2	77
138	2	816	2	80
139	3	851	2	70
140	2	803	2	84
141	2	803	2	86
142	2	819	2	73
143	2	806	1	64
144	1	795	2	80
145	2	831	2	70
146	2	828	2	79
147	1	790	2	82
148	2	800	2	86
149	1	759	1	57
150	2	816	2	79
151	2	828	1	69
152	2	818	2	74
153	1	760	1	53
154	3	860	3	90
155	3	861	3	90
156	2	800	2	73
157	2	821	2	70
158	1	784	2	79
159	2	814	2	77
160	2	816	2	83
161	2	828	2	84
162	3	860	3	90
163	3	883	3	92
164	1	790	2	72
165	1	793	1	56
166	2	805	1	69
167	3	855	3	91
168	3	855	3	94

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
169	2	816	2	84
170	2	811	2	87
171	1	776	1	67
172	3	851	3	90
173	2	816	2	78
174	3	850	3	90
175	3	850	2	83
176	2	825	2	78
177	2	810	2	83
178	3	865	3	91
179	2	800	2	70
180	2	844	3	90
181	3	901	3	91
182	2	833	2	83
183	2	803	2	77
184	2	821	2	79
185	2	808	2	80
186	1	795	1	66
187	3	860	3	90
188	1	795	1	67
189	2	813	2	77
190	2	837	3	90
191	3	852	2	83
192	3	856	2	79
193	2	813	2	78
194	2	800	2	78
195	3	865	3	90
196	2	819	1	68
197	1	769	1	65
198	2	834	3	91
199	2	805	2	71
200	1	788	1	63
201	3	851	2	84
202	2	808	2	71
203	2	807	2	78
204	2	802	2	74
205	3	851	2	87
206	2	831	2	82
207	1	792	2	75
208	3	852	2	83
209	1	794	1	62
210	1	790	1	66
211	1	795	2	78

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
212	2	830	2	79
213	2	822	2	70
214	2	811	1	59
215	2	840	2	78
216	1	790	2	72
217	2	824	2	73
218	2	800	2	71
219	2	822	2	72
220	1	769	1	66
221	2	833	2	74
222	2	830	2	77
223	2	830	2	84
224	1	797	2	77
225	2	837	2	83
226	1	777	1	62
227	2	833	3	90
228	3	855	3	91
229	2	800	2	74
230	1	748	1	61
231	1	793	1	65
232	2	819	2	72
233	1	784	1	67
234	2	814	1	66
235	2	808	2	75
236	2	801	1	63
237	2	834	1	65
238	2	833	2	87
239	2	830	2	86
240	3	878	1	68
241	3	918	3	93
242	1	774	1	68
243	2	803	1	61
244	3	870	3	91
245	1	795	2	78
246	2	816	1	66
247	1	766	1	60
248	3	851	3	91
249	1	768	1	68
250	3	990	3	95
251	2	808	2	82
252	3	901	3	92
253	2	808	2	71
254	1	795	1	69

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
255	2	840	2	77
256	3	850	2	84
257	2	834	1	64
258	3	891	3	90
259	2	834	2	76
260	2	831	3	90
261	3	891	3	93
262	1	797	2	75
263	2	827	2	73
264	2	811	1	65
265	2	801	1	59
266	2	834	2	86
267	2	801	1	69
268	3	865	3	91
269	2	830	2	87
270	2	844	2	84
271	1	795	1	54
272	2	837	2	72
273	3	870	3	91
274	2	803	2	70
275	2	810	2	88
276	2	811	1	66
277	3	860	3	91
278	1	777	1	64
279	1	790	1	60
280	2	824	3	90
281	1	788	2	72
282	2	816	2	73
283	3	878	2	84
284	1	797	2	82
285	2	827	2	82
286	3	870	3	90
287	1	789	2	71
288	1	756	1	58
289	3	851	2	83
290	1	793	1	69
291	2	801	2	70
292	1	787	2	71
293	3	851	3	91
294	3	871	2	86
295	1	788	1	65
296	2	816	2	77
297	2	813	1	67

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
298	3	850	2	71
299	2	818	2	78
300	2	824	2	84
301	1	792	1	68
302	2	807	2	74
303	2	803	1	64
304	2	837	3	90
305	2	821	2	77
306	2	816	2	76
307	3	850	2	86
308	2	837	2	84
309	2	837	2	80
310	2	837	2	73
311	3	850	2	76
312	3	850	3	90
313	2	803	1	62
314	1	784	2	79
315	3	865	3	91
316	3	855	3	92
317	1	793	1	67
318	2	834	2	78
319	2	821	2	76
320	1	777	1	65
321	2	808	2	72
322	2	824	2	82
323	2	816	2	76
324	1	764	1	67
325	2	827	2	77
326	1	791	1	68
327	1	759	1	59
328	3	852	3	91
329	2	801	2	74
330	2	808	1	65
331	2	819	2	78
332	1	784	1	64
333	1	788	2	79
334	2	831	2	79
335	1	776	1	63
336	1	775	1	69
337	2	810	2	71
338	2	811	2	86
339	2	830	2	77
340	2	844	2	79

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
341	1	756	1	61
342	2	822	2	86
343	2	822	2	83
344	2	801	1	66
345	1	768	1	60
346	2	806	2	76
347	1	785	1	62
348	2	821	1	69
349	1	783	2	80
350	2	805	2	80
351	3	850	3	91
352	2	814	1	66
353	2	810	2	77
354	3	860	3	91
355	2	833	2	80
356	2	841	3	92
357	2	805	1	67
358	1	774	1	57
359	2	834	2	80
360	2	837	3	91
361	2	816	2	73
362	2	811	1	67
363	2	819	2	84
364	3	850	3	90
365	1	795	2	80
366	2	827	2	84
367	1	790	2	73
368	2	825	2	84
369	1	787	2	80
370	2	819	2	70
371	1	787	2	72
372	2	819	3	90
373	1	792	1	64
374	2	837	2	82
375	1	776	1	69
376	3	860	3	91
377	2	834	2	83
378	2	821	2	72
379	2	830	3	90
380	2	800	2	78
381	2	827	3	91
382	3	883	3	91
383	2	803	1	67

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
384	2	818	2	87
385	3	893	3	92
386	1	792	2	77
387	1	782	1	60
388	2	810	2	82
389	3	865	2	86
390	3	870	2	86
391	2	821	2	74
392	1	760	1	59
393	1	789	2	71
394	2	821	1	57
395	2	825	1	69
396	1	748	1	61
397	2	806	2	77
398	3	870	3	91
399	2	813	2	78
400	2	827	2	84
401	2	816	2	77
402	3	851	3	91
403	2	830	2	80
404	2	825	2	74
405	1	787	2	78
406	3	855	3	92
407	3	876	2	88
408	2	808	2	82
409	2	837	2	78
410	1	777	1	61
411	3	876	3	93
412	2	807	2	82
413	2	824	2	76
414	3	852	3	90
415	2	834	2	71
416	1	790	1	61
417	2	806	1	63
418	2	813	1	67
419	1	797	2	77
420	2	819	2	72
421	1	772	1	59
422	2	840	2	76
423	2	819	2	72
424	2	825	2	82
425	1	766	1	60
426	1	766	1	58

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
427	2	824	2	74
428	2	811	1	62
429	3	870	3	91
430	2	837	2	84
431	1	778	2	74
432	2	834	2	83
433	2	837	2	78
434	1	793	1	62
435	2	801	1	64
436	2	816	2	80
437	1	759	1	67
438	2	831	2	73
439	2	844	3	90
440	1	765	2	70
441	2	814	2	77
442	2	830	2	84
443	1	790	2	79
444	2	840	3	92
445	2	837	3	92
446	1	791	1	67
447	2	830	3	90
448	2	805	2	71
449	2	800	2	70
450	1	779	2	79
451	2	816	1	63
452	2	840	2	83
453	3	855	2	87
454	2	821	2	82
455	2	803	1	67
456	3	860	2	85
457	1	762	2	70
458	1	794	2	78
459	1	784	1	63
460	2	837	2	81
461	2	810	2	75
462	3	851	2	77
463	1	791	2	74
464	1	784	1	62
465	2	808	1	69
466	1	771	1	62
467	3	865	3	91
468	3	856	3	90
469	1	789	1	63

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
470	2	831	2	84
471	2	824	2	84
472	2	801	1	60
473	2	821	2	81
474	1	793	1	67
475	2	821	2	76
476	2	816	2	76
477	2	822	2	73
478	3	855	3	90
479	2	811	1	59
480	2	831	3	91
481	1	797	1	69
482	2	810	1	68
483	2	810	2	74
484	1	790	1	64
485	3	855	3	90
486	2	821	2	88
487	3	851	2	83
488	2	805	2	73
489	2	837	3	91
490	2	824	2	78
491	2	800	2	70
492	2	822	2	71
493	1	768	1	68
494	2	824	2	78
495	1	793	1	67
496	2	808	2	77
497	2	833	3	91
498	3	870	3	91
499	1	783	1	68
500	2	821	2	72
501	2	837	2	79
502	2	803	3	90
503	3	861	3	91
504	2	802	1	68
505	3	850	2	84
506	3	870	2	80
507	1	780	1	69
508	2	828	1	68
509	1	772	1	62
510	3	855	3	90
511	2	819	3	91
512	2	801	1	66

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
513	2	816	2	72
514	1	782	1	59
515	2	831	2	70
516	2	806	1	66
517	1	724	1	65
518	2	841	2	77
519	2	806	2	71
520	2	827	2	77
521	2	822	2	78
522	3	870	3	91
523	2	813	2	80
524	1	797	2	70
525	2	818	2	73
526	3	901	3	91
527	2	805	2	70
528	2	840	2	87
529	2	844	2	88
530	3	860	3	91
531	2	816	1	66
532	2	827	2	83
533	3	865	3	92
534	3	870	2	84
535	1	780	1	59
536	2	808	2	73
537	2	837	2	77
538	2	831	2	86
539	1	762	1	63
540	2	822	1	68
541	2	840	3	91
542	2	827	2	72
543	3	860	3	91
544	1	762	1	68
545	1	788	1	64
546	3	860	2	86
547	2	834	2	82
548	2	808	2	79
549	2	824	2	86
550	2	800	2	79
551	2	844	2	77
552	2	819	2	74
553	2	803	2	75
554	3	855	3	91
555	2	840	2	79

Student #	MA CRCT Performance Level	MA CRCT Scale Score	MA1 EOCT Performance Level	MA I EOCT Grade Conversion
556	3	850	3	90
557	2	801	1	62
558	2	816	1	68
559	2	816	2	84
560	1	792	2	72
561	3	850	3	92
562	2	827	2	74
563	2	805	1	69
564	3	876	3	93
565	2	830	2	87
566	2	808	1	59
567	2	816	2	88
568	2	840	2	79
569	1	774	1	63
570	2	830	2	82
571	2	844	2	70
572	2	830	2	77
573	3	876	3	91
574	2	825	2	79
575	2	803	1	59
576	2	803	2	74
577	1	776	1	61
578	2	840	2	80
579	2	834	2	77
580	3	891	3	94
581	2	803	2	71