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A Comparative Analysis Of Student Achievement In Florida Charter And Non-charter Public High Schools 2007-2009

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A COMPARATIVE ANALYSIS OF STUDENT ACHIEVEMENT IN FLORIDA CHARTER AND NON-CHARTER PUBLIC HIGH SCHOOLS 2007-2009

by

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ABSTRACT

The purpose of this study was to determine if any relationship existed between the change in developmental scale scores (DSS) on the Florida Comprehensive Assessment Test (FCAT) for reading and mathematics, in selected Florida school districts among charter and non-charter public high schools, for grades 9 and 10. This study also investigated if any relationship existed in student achievement based on student demographics (gender, economically disadvantaged, primary home language (ELL) and ethnicity), and examined if there was a difference in professional demographics of faculty (advanced degrees, teachers' average years of teaching experience, and percent of courses taught by out of field teachers gender), among charter and non-charter public high schools in the state of Florida. School data were analyzed from 234 charter and non-charter public high schools, within 15 districts across the state of Florida, for the years 2007-2009.

The findings of this research suggest charter high schools in the state of Florida are not keeping the pace with their traditional public high school counterparts. Over a three year period, charter high schools had significantly lower developmental scale scores on the FCAT, in both reading and mathematics, than non-charter public high schools. The findings also suggest that student demographics, with respect to male gender, economically disadvantaged, and ELL, combined with charter school status, negatively impact student achievement as measured by DSS. The disparity noted with regard to faculty demographics between charter and non-charter public high schools, only touches on some considerable differences between the two school

types; more information is needed on the variations so parents and students can make informed choices.

For future research, replication of this study with an expanded sample size of charter schools and a longer period of time for data collection was recommended. Separate studies are recommended on the differences between charter and non-charter public schools with regard to instructional time, curriculum or grade levels offered, the differences between parent and student perceptions, and the differences between funding and principal background as it relates to student achievement.

I dedicate this dissertation to my parents Charles and Sheila Sommella; who have given me absolute love and support and have encouraged me to persevere through all challenges. My gratitude and love for them is infinite. To my grandmother Shirley Sommella, who has remained positive and proud. And in loving memory of my aunt, Jill Karen Rogers, and grandparents Bernie and Gerry Cohen, and John Sommella; you are with me in spirit and my love for you all transcends beyond this earth – until we are all together again.

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INTRODUCTION

Introduction

The economic future of the US depends on the quality of schooling of students, and over the last several decades, events and political actions have created change in the educational system. This study had as its focus the success of a new school structure—charter schools—and the student achievement in those schools compared to public schools in the same state. Public schools provided a free education to all students, but many public schools were challenged with strict budgets along with restrictions of many mandates. Charter schools were also public schools, but had autonomy from most of the local and state educational agencies, which allowed them "increased flexibility to adapt to individual children, make decisions about developing curriculum, structure the school day, and hiring teachers" (National Alliance for Public Charter Schools, ¶1, 2008a).

The chapter is organized by presenting an introduction to the conceptual framework of the changes and phases in the educational system that lead to school choice. An explanation of the choice movement is then presented, followed by the purpose of the study, statement of the problem, research questions, definitions, an overview of the methodology, and significance of the study.

Conceptual Framework

From the 1950s and up through the 1970s, the American public school system moved through phases of equity and access. Next, the public school system was significantly affected by the report *A Nation at Risk,* which brought the standards movement through the 1980s and 1990s (The National Commission on Excellence in Education, 1983). From there, educational reform had been the focus with a concentration on standards and educational excellence, and when The No Child Left Behind Act of 2001 (NCLB) was established in 2002 (U.S. Department of Education, 2004), the era of accountability and choice began.

> Since the late 1980s, school choice has become a popular education reform strategy. Proponents believe that allowing parents to choose a school for their child promotes greater parental involvement in education. They also argue that the competition for students forces schools to improve to retain their current students and to attract new students. Choice opponents argue that less desirable schools will neither improve nor close due to lack of resources, but that students in those schools will have access to fewer resources than before. (McArthur, Colopy, & Schlaline, 1995, p. 1)

One of the choice options was the charter school. Charter schools were public schools which had autonomy from most of the local and state educational agency, and charter schools had a large impact on the development of school choice. For families and policy makers to make informed choices evidence of success is needed. The focus of this study was to compare reading and mathematics scores on the Florida Comprehensive Assessment Test (FCAT) for charter and non-charter public high schools, grades 9 and 10, in the state of Florida. This study also examined if any relationship existed in student achievement based on student demographics (gender, economically disadvantaged, primary home language (ELL) and ethnicity), for charter and non-charter public high schools, grades 9 and 10, in the state of Florida. Finally, this study

explored if there was a difference in professional demographics of faculty (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers), among charter and non-charter public high schools in the state of Florida.

Change in the Educational System

The public school system has evolved through many phases that lead up to the choice movement, and in the beginning, the American judicial system played an integral part in the timeline of events from the Civil Rights Movement to the desegregation in public schools. The journey was mapped by the U.S. government through historical cases and federal regulations which paved the way for educational reform. Landmark cases such as *Plessy v Ferguson* (1896) and *Brown v Board of Education* (1954), developed the foundation for such change in public schools and society, while The Elementary and Secondary Education Act of 1965 (ESEA) would establish the federal guidelines that would manage the change in the American public school system.

Equity and Access

The *Plessy v Ferguson* (1896) case had significant impact on the advancement of equality throughout the U.S., both socially and within the public school system. The infamous separate but equal doctrine was the result of the *Plessy* case and would remain in effect for over 50 years, until the landmark case of *Brown v Board of Education* (1954). The *Plessy* case developed when Homer Plessy, a black shoemaker, was jailed for sitting in the white car of the East Louisiana Railroad, a violation of a Louisiana statute which made a provision for separate railroad cars for

whites and blacks. *Plessy* argued this was a violation of both the Thirteenth Amendment and Fourteenth Amendment of the Constitution of the United States. The Thirteenth Amendment abolished slavery and Plessy contended that being forced to sit in a separate car forged a distinction between two races, and therefore placed one race in an inferior state and a position of involuntary servitude. The Fourteenth Amendment provided due process and equal protection rights to all citizens, so Plessy argued the separation did not provide an equality of protection to the said inferior race and also claimed the separate but equal doctrine was unconstitutional, and the Louisiana statue violated his rights. However, the court upheld the constitutionality of the law, confirming that separate was equal (Plessy v. Ferguson, 1896). *Plessy v Ferguson* may not have directly involved the school system, but the implications of the separate but equal decision had a considerable impact on the desegregation movement in public education (Rebore, 1997). Separate facilities for whites and blacks would become the norm in society up through the Civil Rights Movement, on the foundation of the separate but equal doctrine; this policy also filtered through the public school system and was the basis for the segregation of whites and blacks in schools. The separate but equal doctrine would remain in effect for over 50 years until it was challenged and overturned by *Brown v Board of Education* (1954).

By the time the Civil War erupted, most states had elementary education, but "as late as 1920, only one-third of all eligible Americans attended high school" (Clark, 1997, p. 636) By the 1950s the public school system was growing and the landmark case of *Brown v Board of Education* (1954), would challenge the separate but equal doctrine; ultimately the U.S. Supreme Court would overturn the long-standing principle. In *Brown*, a black third grade child was forced

to be bused 3 hours to a school on the basis of the separate but equal rule. The outcome of *Brown* created a massive change in society and within the public school system when the United States Supreme Court struck down the separate but equal doctrine, and further stated segregation within the public school setting was a violation of the Equal Protection Clause in the Fourteenth Amendment of the U.S. Constitution (Rebore, 1997).

The Elementary and Secondary Education Act of 1965 (ESEA) was developed to address public education grades K-12 and to ensure educational opportunities for all levels of students, it is "the cornerstone of federal education policy" (National Education Association, 2009, ¶ 1). It "represents the first time the federal government provided direct funding to the states to support educational programs for certain defined groups of children" (Murray & Murray, 2007, p. 167). Over the next 40 years, the federal government reauthorized this act multiple times; the American public school system was impacted by the foundation of ESEA, through equity and access policies, funding mandates, standards and accountability practices, and choice programs.

The landmark cases of *Plessy* and *Brown*, in addition to the ESEA, set the stage for change in the American public school system and society. These historical events were the beginning of the federal government's continuous influence on public education. School accountability and unitary status requirements would begin as the monitoring systems the federal government imposed in answer to the equal access requirement and desegregation for public schools. Equity and access were the beginning phases which lead to educational reform, public school accountability, and later, the choice movement.

Educational Reform

In 1983, the National Commission on Excellence in Education produced the report, *A Nation at Risk*, which declared monumental errors in the educational system and the manner in which the system had failed our children; national reform was about to emerge (Bracey, 2003). *A Nation at Risk* also provided recommendations to address the educational crisis and institute reform, in order to create a culture of life-long learners and prepare a skilled and proficient workforce and society, ready for global competition (The National Commission on Excellence in Education, 1983).

> Secretary of Education T. H. Bell created the National Commission on Excellence in Education on August 26, 1981, directing it to examine the quality of education in the United States and to make a report to the Nation.…The Commission was created as a result of the Secretary's concern about "the widespread public perception that something is seriously remiss in our educational system." Soliciting the 'support of all who care about our future,' the Secretary noted that he was establishing the Commission based on his 'responsibility to provide leadership, constructive criticism, and effective assistance to schools and universities.' (The National Commission on Excellence in Education, p. 6)

The findings in *A Nation at Risk* pointed to an overall deficit in the Nation's educational performance within four basic components: (a) content, (b), expectation, (c) timing, and (d) teaching (The National Commission on Excellence in Education, 1983). In the area of content, "the Commission examined patterns of courses high school students took in 1964-69 compared with course patterns in 1976-81" (The National Commission on Excellence in Education, p. 26). The findings indicated the curriculum for students in the U.S. was not challenging, the requirements for core academics was remarkable low, and the major focus on coursework had declined towards general studies rather than preparation for higher education, either vocational or college.

> Secondary school curricula have been homogenized, diluted, and diffused to the point that they no longer have a central purpose….The proportion of students taking a general program of study has increased from 12 percent in 1964 to 42 percent in 1979. (The National Commission on Excellence in Education, p. 26)

A rigorous academic focus was also a concern for high school students' coursework, as the Commission reported on the types of credits earned by U.S. students.

> Twenty-five percent of the credits earned by general track high school students are in physical and health education, work experience outside the school, remedial English and mathematics, and personal service and development courses, such as training for adulthood and marriage. (The National Commission on Excellence in Education, p. 27)

In the area of expectations, the Commission assessed the knowledge and skills that graduates of high school and college should acquire. The Commission acknowledged a disparity between academic expectations for students in the U.S. and other nations, in regards to hours spent on academic subjects.

> In many other industrialized nations, courses in mathematics (other than arithmetic or general mathematics), biology, chemistry, physics, and geography start in grade 6 and are required of *all* students. The time spent on these subjects, based on class hours, is about three times that spent by even the most science-oriented U.S. students, i.e., those who select 4 years of science and mathematics in secondary school. (The National Commission on Excellence in Education, p. 28)

Furthermore, the Commission discovered the academic course requirements for U.S. students to graduate high school and the criteria to enter college were not competitive.

> Thirty-five States require only 1 year of mathematics, and 36 require only 1 year of science for a diploma. In 13 States, 50 percent or more of the units required for high school graduation may be electives chosen by the student….'Minimum competency' examinations (now required in 37 States) fall short of what is needed, as the 'minimum' tends to become the 'maximum,' thus lowering educational standards for all. One-fifth of all 4-year public colleges in the United States must accept every high school graduate within the State regardless of program followed or grades, thereby serving notice to high school students that they can expect to attend college even if they do not follow a demanding course of study in high school or perform well. About 23 percent of our more selective colleges and universities reported that their general level of selectivity declined

> during the 1970s, and 29 percent reported reducing the number of specific high school courses required for admission (usually by dropping foreign language requirements, which are now specified as a condition for admission by only one-fifth of our institutions of higher education). (The National Commission on Excellence in Education, p. 28)

The Commission also reported that time focused on academic performance and educational excellence fell short with students in the U.S. as compared to other countries considered to be in the competitive market.

> In England and other industrialized countries, it is not unusual for academic high school students to spend 8 hours a day at school, 220 days per year. In the United States, by contrast, the typical school day lasts 6 hours and the school year is 180 days. In many schools, the time spent learning how to cook and drive counts as much toward a high school diploma as the time spent studying mathematics, English, chemistry, U.S. history, or biology. A study of the school week in the United States found that some schools provided students only 17 hours of academic instruction during the week, and the average school provided about 22. (The National Commission on Excellence in Education, pp. 29-30)

Finally, in the area of teaching, the Commission found teacher preparation programs were inadequate, did not represent the upper quartile of college students, and teacher salaries were, on average, incredibly low.

> The Commission found that not enough of the academically able students are being attracted to teaching; that teacher preparation programs need substantial improvement; that the professional working life of teachers is on the whole unacceptable; and that a serious shortage of teachers exists in key fields. (The National Commission on Excellence in Education, p. 30)

As a result of the findings in *A Nation at Risk*, several recommendations were brought forth from the Commission. It could be argued that the publication alone was the trigger for national reform, but certainly, the unambiguous wording demanded attention from the American citizens, politicians and educators alike. The detailed recommendations in *A Nation at Risk* supported each of the four basic academic components of content, expectations, timing, and

teaching, and presented a clear outline for change within the educational system. Recommendations for content centered around standards titled the Five New Basics and required

> That State and local high school graduation requirements be strengthened and that, at a minimum, all students seeking a diploma be required to lay the foundations in the Five New Basics by taking the following curriculum during their 4 years of high school: (a) 4 years of English; (b) 3 years of mathematics; (c) 3 years of science; (d) 3 years of social studies; and (e) one-half year of computer science. For the college-bound, 2 years of foreign language in high school are strongly recommended in addition to those taken earlier. (The National Commission of Excellence in Education, 1983, p. 32)

The terms standards and standardized tests of achievement, concepts that would become the foundation of reform, were used within the recommendations for expectations. The Commission challenged the American school system to "adopt more rigorous and measurable standards, and higher expectations, for academic performance and student conduct, and that 4-year colleges and universities raise their requirements for admission" (The National Commission on Excellence in Education, p. 35). Furthermore, one of the recommendations clearly suggested a nationwide monitoring system.

> Standardized tests of achievement (not to be confused with aptitude tests) should be administered at major transition points from one level of schooling to another and particularly from high school to college or work. The purposes of these tests would be to: (a) certify the student's credentials; (b) identify the need for remedial intervention; and (c) identify the opportunity for advanced or accelerated work. The tests should be administered as part of a nationwide (but not Federal) system of State and local standardized tests. This system should include other diagnostic procedures that assist teachers and students to evaluate student progress. (The National Commission on Excellence in Education, p. 36)

As the Commission addressed the recommendations for time spent on education, the suggestions were outlined by a proposal for a longer school day and school year, a concentration on a structured disciplinary system with a code of conduct and a monitoring system for attendance. Furthermore, the position was taken that all students within varying levels of abilities, should be

afforded the right and opportunity to learn (The National Commission on Excellence in Education). In order to honor the teaching profession and improve teacher preparation, the Commission identified seven elements within their recommendations: (a) higher educational standards for teachers, (b) competitive salaries and benefits, (c) adoption of an 11 month contract, (d) the implementation of career ladders in order to recognize teacher leaders and support the beginning teacher, (e) a need to address the critical shortage of teachers specifically in the area of mathematics and science, (f) a recommendation to create incentives that should attract high achievers to the profession, and (g) empowering the teacher leaders to develop and implement a mentoring program for new teachers (The National Commission on Excellence in Education). The Commission's final recommendation was an overall call for leadership and financial support for the American public school system. The Commission explicitly called upon the Federal Government to "identify the national interest in education…[and] help fund and support efforts to protect and promote that interest. It must provide the national leadership to ensure that the Nation's public and private resources are marshaled to address the issues" (The National Commission on Excellence in Education, p. 41) that were found in the report. The call was put out to all educators and citizens to support educational reform in any manner necessary. "Excellence costs. But in the long run mediocrity costs far more" (The National Commission on Excellence in Education, p. 41).

Public School Accountability

The public school system has made some improvements since the 1983 report, *A Nation at Risk*; "by 2005 almost 65 percent of high school graduates were taking the recommended

course work – four times the rate that students took the recommended course work in 1983" (U.S. Department of Education, 2008, p. 3), but the nation still has much to do to keep up with global competitiveness and offer a world class education. The nation's high schools have changed over the last several decades, with increased credit requirements and more rigorous coursework offerings, yet "nearly a third of our high school students still do not take the rigorous program of study recommended in 1983 for all students, regardless of whether they intend to enter the workforce and college after high school" (U.S. Department of Education, 2008, p. 3). Moreover, long-term studies on 17 year old students' reading and mathematics scores showed little if any improvement between 1978 and 2004 (U.S. Department of Education, 2008).

The standards and accountability movement began in the 1980s and continued through the 1990s as a response to the recommendations put forth by the Commission in *A Nation at Risk*. The call for change "inspired some state-level pioneers to think about standards and accountability in education, and put them into practice" (Spellings, 2008, ¶ 3). During the standards and accountability movement, content standards and standards-based testing measures were developed across the states and federal aid was established to support this progress (U.S. Department of Education, 2008). Structure was provided at the federal level to assist states with consistent measuring and reporting on student achievement. The Improving America's Schools Act of 1994, signed into law by President Clinton, was a reauthorization of the Elementary and Secondary Education Act of 1965. Some of the major provisions for education reform in this act were (a) assistance for disadvantaged and migrant students (Title I), (b) bilingual funding (Title VII), (c) professional development for teachers, (d) safe and drug-free schools, (e) charter

schools, and (f) technology education. These provisions were established to provide "additional pathways to enable all children to meet [the] challenging state standards" (U.S. Department of Education, 1995, p. 4).

The *Goals 2000: Educate America Act*, another law passed by the Clinton Administration in 1994, defined National Education Goals and outlined a framework by which schools should achieve those goals. In the *Goals 2000: Educate America Act*, Congress named the following as National Education Goals (a) school readiness, which outlined the need for proper preparation of school aged children; (b) school completion, to address high school graduation; (c) student achievement, reflected the necessity to demonstrate proficiency in English, mathematics, science, foreign language, civics, economics, arts, history, and geography; (d) teacher education and professional development; (e) achieving high standards and global competiveness in mathematics and science; (f) adult literacy; (g) safe and drug-free schools; and (h) parent participation (U.S. Department of Education, 1994). Together, The Improving America's Schools Act of 1994 and the Goals 200: Educate America Act, marked the combined effort to institute a systematic approach in reform legislation, moving "away from isolated, programmatic efforts, toward an integrated system of high-quality service that focuses on improving the performance of all students" (U.S. Department of Education, 1995, p. 12). This prompted the landmark No Child Left behind Act of 2001 (NCLB), the most recent reauthorization of ESEA, which "strengthened the accountability attached to test results" (U.S. Department of Education, 2008, p. 3).

The No Child Left Behind Act of 2001 was the federal regulation to monitor public schools through accountability systems; it was the federal government's assurance policy to hold schools accountable for equity in achievement and excellence for all. The purpose of the policy was to provide consistency and equity among the schools in the public education system, while ensuring the schools establish a standardized measurement and monitoring system.

> The No Child Left Behind Act (NCLB) requirements affect every public school in America. The primary purpose of the act is to ensure that every public school student achieve [*sic*] proficiency on identified academic standards and to close achievement gaps that exist between various sub-groups of students. Further, all students are to be educated in safe learning environments by well qualified teachers. (Murray & Murray, 2007, p. 171)

The standards and accountability movement also prompted states to monitor the progress of students, not just as an entire group, but within individual subgroups. Subgroups are used by states to identify and monitor students and may be (a) ethnic categories, (b) race categories, (c) students with disabilities, (d) English Language Learners, or (e) socio-economic status (U.S. Department of Education, National Technical Advisory Council, 2008). These groups are used to disaggregate data, track strengths and weaknesses, trends, and develop programs to meet the needs of all students. "Across the nation, we're finally measuring the progress of students of every race and income level, finally holding ourselves accountable for their performance, and finally producing and sharing data to determine what works" (Spellings, 2008, ¶ 3).

"For the first time in our country's history, we have reliable data to evaluate student performance and address weaknesses in our schools" (U.S. Department of Education, 2008, p. 1). With the progress monitoring systems in place from NCLB, policymakers, educational leaders, and citizens can stay informed on student achievement and make decisions based on

concise data, in order to achieve better results. While NCLB speaks to remarkable change and educational reform, now the nation is charged with the task of making well-informed decisions. "Our country responded to *A Nation at Risk* with far-reaching educational reforms" (U.S. Department of Education, 2008, p. 7). Data are now readily available on student performance levels, and schools and states can measure and monitor results, but the American school system still has not made great changes in actual student achievement that would obtain the world class educational standards the nation strives to attain.

> American education outcomes on international comparisons have not improved significantly since the 1970s. International tests show that the United States is, at best, running in place, while other nations are passing us by. Many countries now match or exceed us, not only in the number of years their children attend school but also in how much those children learn. The United States was once the world leader in high school completion, but among our 25-34 year olds, it has now slipped to 10th place, falling behind such countries as Canada, Switzerland, and South Korea. (U.S. Department of Education, 2008, p. 9)

When equipped with comprehensive data sources on student achievement of subgroups, as a whole, by school and state level, informed decisions can be executed. However, the school system has reached a point where more options are still needed. Not only are public schools mandated to provide equal access to programs and decrease the achievement gap among races, but as the nation becomes more diverse and intercultural, it requires school leaders to become better educated and remove barriers that do not maximize learning for all (Futrell, n.d.). According to Cooper and Randall (2008), public schools were struggling; their resources were limited, funding was often inadequate, and schools were responsible for the same overhead even when enrollment declines. Mandates restricted what was being taught as well as the manner in which it was delivered, and with the vast number of standards the schools were required to

address, coupled with the fear of not meeting adequate yearly progress, what options do the public schools have left to offer (Marzano, 2006)? With the serious focus from NCLB on excellence in academic standards and achievement, as well as equal opportunities to push all students to reach their maximum abilities, the American school system entered into the choice movement. Table 1 shows the chronology of events leading through educational reform and into the choice movement.

Table 1
Chronology of Events Leading to the Choice Movement

Date	Event
1896	Landmark case of *Plessy v Ferguson*: separate but equal doctrine
1950s	School desegregation marked the early stages of educational reform
1954	Landmark case of *Brown v Board of Education* ending school segregation
1955-1965	Civil Rights Movement
1965	Elementary and Secondary Education Act (ESEA) provided funds to disadvantaged schools
1980s	National school reform was launched
1983	*A Nation at Risk* declared crisis in the public school system
1980s – 1990s	Standards movement prompted by *A Nation at Risk*
1994	Improving America's Schools Act
1994	Goals 2000: Educate America Act
2002	No Child Left Behind Act of 2001

Choice Movement

"School choice in American education has long been available to some parents who can send their children to private schools" (Tice, Chapman, Princiotta, & Bielick, 2006, p. 2). Public school alternative options began as early as 1971 when Minneapolis and St. Paul, MN opened the first public choice program (Clark, 2002). While the public school system would find its way through the fight for equity and fairness by means of educational reform and the standards movement; the groundwork was also laid for what later would be known as the choice movement. Although the movement began slowly, after *A Nation at Risk* declared the public schools in crisis (The National Commission on Excellence in Education, 1983), the focus on school choice was catapulted into motion and made official through the choice movement. DeBray-Pelot, Lubienski, and Scott (2007) pointed out "although many see choice as a quintessential value in consumer-oriented American society, some conservatives and progressives champion choice as a means of empowerment for disadvantaged communities disenfranchised by that society—the "new civil right" (p. 205). From the 2000 presidential campaign through 2008, the federal government would become intimately involved in policies mandating school choice and providing funding opportunities to support its growth (Clark). As the public school system struggled with increasing demands and diminishing resources, school choice evolved.

Purpose of the Study

The purpose of this study was to determine if any relationship existed between the change in developmental scale scores on the Florida Comprehensive Assessment Test (FCAT) for reading in selected Florida school districts, among charter and non-charter public high schools grade 9 and 10 for years 2007-2009. This study also investigated if any relationship existed between the change in developmental scale scores on the FCAT mathematics in selected Florida school districts, among charter and non-charter public high schools grades 9 and 10 for years 2007-2009. Developmental scale scores range from 0-3000 and are used to track student progress over time for the Florida Comprehensive Assessment Test (FCAT) reading and the Florida Comprehensive Assessment Test (FCAT) mathematics. These scores can be compared from one grade level to the next to indicate student growth or learning gains (Florida Department of Education, Bureau of K-12 Assessment, n.d.a). This study also examined if any relationship existed in student achievement based on student demographics (gender, economically disadvantaged, primary home language (ELL) and ethnicity) in selected Florida school districts, among charter and non-charter public high schools. Finally, this study explored if there was a difference in professional demographics of faculty (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) in selected Florida school districts, among charter and non-charter public high schools for years 2007-2009.

Statement of the Problem

Non-charter public school enrollment for grades 1 through 12, "decreased from 80 to 74 percent between 1993 and 2003. The decrease in assigned public school enrollment was nearly offset by an increase in choice public school enrollment from 11 to 15 percent between 1993 and 2003" (Tice et al., 2006, p. iii). Non-charter public school enrollment for grades 9 through 12 decreased from 81 to 76 percent between 1993 and 2003, while the choice public enrollment increased from 11 to 14 percent in those same grades; students were gravitating to charter schools. What was the relationship between charter and non-charter public school student performance? The problem to be studied was the growing percentage of public school students attending charter schools and the lack of research on the student achievement of high school students attending charter schools when compared to student achievement in non-charter schools.

Research Questions

The following were the research questions that guided this study:

1. What is the relationship, if any, between the change in developmental scale scores on the FCAT reading in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009?

   H_{01}: There is no difference in the change in developmental scale scores on the FCAT reading between charter and non-charter public high schools.

2. What is the relationship, if any, between the change in developmental scale scores on the FCAT mathematics in selected Florida school districts, for charter and non-charter

public high schools grades 9 and 10 from 2007-2009?

H_{02}: There is no difference in the change in developmental scale scores on the FCAT mathematics between charter and non-charter public high schools.

3. What is the relationship, if any, between student demographics (gender, poverty, primary home language, and ethnicity) and achievement in selected Florida school districts, for charter and non-charter public high schools from 2007-2009?

   H_{03}: There is no difference between student demographics and achievement for charter and non-charter public high schools.

4. What is the difference in faculty professional demographics (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) in selected Florida school districts, among charter and non-charter public high schools from 2007-2009?

   H_{04}: There is no difference in faculty professional demographics between charter and non-charter public high schools.

High School Focus

High schools are the gateway for students into their adult life. They are the main source of college preparation for the young adults of society and they are the final stage of many students' educational careers; high schools create the path for college and career readiness for the future. High schools direct our prospective leaders into adulthood and ultimately guide them to their life's destination. The stakes of a solid high school education are tremendous as the high

schools bear the burden of determining how well students are prepared for life and their future. It was well noted in a *Nation at Risk*, that at the time of the publication, the high schools in the United States were not preparing the youths to reach their full potential in life.

> About 13 percent of all 17-year-olds in the United States can be considered functionally illiterate….The College Board's Scholastic Aptitude Tests (SAT) demonstrate a virtually unbroken decline from 1963 to 1980. Average verbal scores fell over 50 points and average mathematics scores dropped nearly 40 points….Many 17-year-olds do not possess the "higher order" intellectual skills we should expect of them. Nearly 40 percent cannot draw inferences from written material; only one-fifth can write a persuasive essay; and only one-third can solve a mathematics problem requiring several steps. (The National Commission on Excellence in Education, 1983, pp. 16-17)

Since then, both federal and state governments have taken action in attempts to create a more structured system that would prepare children to be competitive in a global workforce, promote rigorous academic programs for all students, offer challenging coursework, and promote academic commitment. School choices, and namely charter schools, have been the focus of much of this reform, offering parents and students a choice for their educational setting.

However, the public school system, including charters, had many hurdles to face, and high schools had their own set of challenges. They were plagued with attendance and drop out issues and increasing the high school graduation rate is a national focus. In 2010, President Obama announced his Race to the Top High School Commencement Challenge, encouraging all high schools to increase attendance and prepare students for college or the workforce (The White House, n.d.). Furthermore, the transition from middle to high school can be overwhelming for students. Zimmer et al., (2009) suggested the "high-school transition is often a difficult one, and the simple strategy of keeping students in the same schools from seventh grade (or earlier) through 12th grade might reduce the dropout rate-perhaps even if the school is not a charter" (p.

90). The pressure of high school credits, determining a major, graduation, and college preparation were only some of the challenges high schools encountered. With the multiple challenges high schools faced, policy leaders should be interested in the effects the charter movement had on student achievement in the high schools

Definition of Terms

The following definitions were used to clarify terms in this study.

Adequate Yearly Progress (AYP) measured the breakdown of achievement test results for major racial groups, economically disadvantaged students, students with disabilities, and English Language Learners. All groups must reach the annual proficiency target for their schools to make Adequate Yearly Progress (Florida Department of Education, Bureau of Research and Evaluation, 2010).

Charter Schools were public schools with unique traits. Charter schools have increased flexibility to adapt to individual children, make decisions about developing curriculum, structure the school day, and hiring teachers (National Alliance for Public Charter Schools, ¶ 1, 2008a).

Developmental Scale Scores (DSS) were vertical scale scores on the Florida Comprehensive Assessment Test (FCAT), used to determine the academic growth of students from year to year and to track student progress over time by linking two years of FCAT data. Florida incorporated the use of development scale scores in 2001, when the grade levels tested for reading and mathematics on the FCAT was increased from grades 4, 8, and 10 in reading and grades 5, 8, and 10 in mathematics, to all grades 3 through 10 for both subjects. Prior to the use

of development scale scores, students were measured by an achievement level attained on the FCAT, but there was no way to determine the growth the student had experienced from year to year (Hoffman, Wise, & Thacker, 2001). Development scale scores ranged from 0-3000 and were used on the reading and mathematics portion of the FCAT. These scores can be compared from one grade level to the next to indicate student growth or learning gains (Florida Department of Education, Bureau of K-12 Assessment, n.d.a). Table 2 displays the development scale scores for the reading and mathematics portion of the 2008 FCAT.

Table 2
2008 FCAT Reading and Mathematics Developmental Scale Scores

Reading					
Grade	Level 1	Level 2	Level 3	Level 4	Level 5
3	86 - 1045	1046 - 1197	1198 - 1488	1489 - 1865	1866 - 2514
4	295 - 1314	1315 - 1455	1456 - 1689	1690 - 1964	1965 - 2638
5	474 - 1341	1342 - 1509	1510 - 1761	1762 - 2058	2059 - 2713
6	539 - 1449	1450 - 1621	1622 - 1859	1860 - 2125	2126 - 2758
7	671 - 1541	1542 - 1714	1715 - 1944	1945 - 2180	2181 - 2767
8	886 - 1695	1696 - 1881	1882 - 2072	2073 - 2281	2282 - 2790
9	772 - 1771	1772 - 1971	1972 - 2145	2146 - 2297	2298 - 2943
10	844 - 1851	1852 - 2067	2068 - 2218	2219 - 2310	2311 - 3008
Mathematics					
Grade	Level 1	Level 2	Level 3	Level 4	Level 5
3	375 - 1078	1079 - 1268	1269 - 1508	1509 - 1749	1750 - 2225
4	581 - 1276	1277 - 1443	1444 - 1657	1658 - 1862	1863 - 2330
5	569 - 1451	1452 - 1631	1632 - 1768	1769 - 1956	1957 - 2456
6	770 - 1553	1554 - 1691	1692 - 1859	1860 - 2018	2019 - 2492
7	958 - 1660	1661 - 1785	1786 - 1938	1939 - 2079	2080 - 2572
8	1025 - 1732	1733 - 1850	1851 - 1997	1998 - 2091	2092 - 2605
9	1238 - 1781	1782 - 1900	1901 - 2022	2023 - 2141	2142 - 2596
10	1068 - 1831	1832 - 1946	1947 - 2049	2050 - 2192	2193 - 2709

Note. Florida Department of Education, p. 2, 2008

Economically Disadvantaged: see poverty

English Language Learners (ELLs) were students who were not proficient in English because it is not their primary language (Bureau of Student Achievement through Language Acquisition, n.d.).

Ethnicity refered to a person's origin or descent. People of Hispanic origin were those whose ancestry stems from Mexico, Puerto Rico, Cuba, Central or South America, or some other Hispanic origin. Those persons who are of Hispanic descent may be any race. Persons not identified as Hispanic are considered Non-Hispanic and may be any race. The U.S. population is separated into five race categories: White; Black; American Indian, Eskimo or Aleut; Asian or Pacific Islander; and Other (U. S. Census Bureau, Housing and Household Economic Statistics Division, Fertility & Family Statistics Branch, 2008).

Florida Comprehensive Achievement Test (FCAT) was the state standardized assessment test given to determine students' ability to meet state standards for proficiency in grades 3-11 in reading and mathematics, science and writing (Florida Department of Education, Bureau of K-12 Assessment, n.d.a). The FCAT was "part of Florida's overall plan to increase student achievement by implementing higher standards" (Florida Department of Education, Bureau of K-12 Assessment, n.d.b, ¶ 1).

High Schools were, for the purpose of this study, schools with instruction provided in grades 9, 10, 11, and 12 (Florida Department of Education, Education Information and Accountability Services, 2010).

Home language or native language, for the purpose of this study, was the language used most often in the home, for students and families who speak more than one language (F.S. § 1003.56(2b), 2009).

Out of field refers to teacher certification. Teachers were out of field if they were teaching in a core subject area (language arts, reading, foreign language, mathematics, science, or social studies), and they were not certified in that subject matter (Florida Department of Education, Education Information and Accountability Services, n.d.a).

Poverty guidelines vary by family size and were updated annually in the *Federal Register* by the U.S. Department of Health and Human Services, under the authority of 42 U.S.C. 9902(2). Table 3 displays the poverty guidelines for 2009, according to the U.S. Department of Health and Human Services (2009).

Table 3
2009 Poverty Guidelines by the Number of Persons in the Family

Persons in Family	Poverty Guidelines 48 Contiguous States and the District of Columbia
1	$10, 830
2	$14,570
3	$18,310
4	$22,050
5	$25,790
6	$29,530
7	$33,270
8	$37,010
Families more than 8 persons	Add $3,740 for each additional person

Note. U.S. Department of Health and Human Services, 2009

Scale scores described the achievement level a student has reached with the Florida Sunshine State Standards (SSS), tested on the Florida Comprehensive Assessment Test (FCAT). Scale scores were reported for all FCAT SSS subjects and ranged from 100 to 500, lowest to highest. Table 4 displays the scale scores in the achievement levels for the reading and mathematics portion of the 2008 FCAT (Florida Department of Education, 2008).

Table 4
2008 FCAT Reading and Mathematics Scale Scores

Reading					
Grade	Level 1	Level 2	Level 3	Level 4	Level 5
3	100 - 258	259 - 283	284 - 331	332 - 393	394 - 500
4	100 - 274	275 - 298	299 - 338	339 - 385	386 - 500
5	100 - 255	256 - 285	286 - 330	331 - 383	384 - 500
6	100 - 264	265 - 295	296 - 338	339 - 386	387 - 500
7	100 - 266	267 - 299	300 - 343	344 - 388	389 - 500
8	100 - 270	271 - 309	310 - 349	350 - 393	394 - 500
9	100 - 284	285 - 321	322 - 353	354 - 381	382 - 500
10	100 - 286	287 - 326	327 - 354	355 - 371	372 - 500

Mathematics					
Grade	Level 1	Level 2	Level 3	Level 4	Level 5
3	100 - 252	253 - 293	294 - 345	346 - 397	398 - 500
4	100 - 259	260 - 297	298 - 346	347 - 393	394 - 500
5	100 - 287	288 - 325	326 - 354	355 - 394	395 - 500
6	100 - 282	283 - 314	315 - 353	354 - 390	391 - 500
7	100 - 274	275 - 305	306 - 343	344 - 378	379 - 500
8	100 - 279	280 - 309	310 - 346	347 - 370	371 - 500
9	100 - 260	261 - 295	296 - 331	332 - 366	367 - 500
10	100 - 286	287 - 314	315 - 339	340 - 374	375 - 500

Note. Florida Department of Education, p. 2, 2008

Traditional Public Schools (TPS) were, for the purpose of this study, non-charter public schools (Florida Department of Education, Education Information and Accountability Services, 2010).

Methodology

To determine the relationship, if any, between the change in developmental scale scores on the FCAT reading and mathematics, in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009, FCAT data from 2007 to 2009

were collected from the Florida Department of Education website, using the Interactive FCAT District and School Reports (Florida Department of Education, Bureau of K-12 Assessment, n.d.b).

To determine the relationship, if any, between student demographics (gender, poverty, primary home language, and ethnicity) and achievement in selected Florida school districts, for charter and non-charter public high schools from 2007-2009, student demographic data were collected from the Florida Department of Education website, using the Interactive FCAT District and School Reports and the Florida School Indicators Report (Florida Department of Education, Bureau of K-12 Assessment, n.d.b; Florida Department of Education, Education Information and Accountability Services, n.d.a).

To determine the difference in professional demographics (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) in selected Florida school districts, among charter and non-charter public high schools from 2007-2009, data on professional demographics were collected from the Florida Department of Education website, using the Florida School Indicators Report (Florida Department of Education, Education Information and Accountability Services, n.d.a). The data sources for the research questions are displayed in Table 5.

Table 5
Data Sources for Research Questions

Research Questions	Data Sources
1. What is the relationship, if any, between the change in developmental scale scores on the FCAT reading in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009?	Florida Department of Education, Interactive FCAT District and School Reports
2. What is the relationship, if any, between the change in developmental scale scores on the FCAT mathematics in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009?	Florida Department of Education, Interactive FCAT District and School Reports
3. What is the relationship, if any, between student demographics (gender, poverty, primary home language, and ethnicity) and achievement in selected Florida school districts, for charter and non-charter public high schools from 2007-2009?	Florida Department of Education, Interactive FCAT District and School Reports and Florida School Indicators Report
4. What is the difference in faculty professional demographics (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) among selected Florida school districts, for charter and non-charter public high schools from 2007-2009?	Florida Department of Education Florida School Indicators Report

Population and Sample

This study focused on charter and non-charter, public high schools across the state of Florida. Fifteen districts, including 34 public charter high schools and 200 non-charter high schools were used for sampling. All districts and schools that met the qualifying criteria for charter and non-charter public schools, as determined by the researcher, were used in this study.

Districts and schools were selected using three criteria: (a) the charter and non-charter public high schools had a minimum of three years of existence within the school years of 2006-2007, 2007-2008, and 2008-2009, (b) the charter and non-charter public high schools served students academically in at least grades 9 and 10, and (c) the charter and non-charter public high schools had FCAT data in both reading and mathematics for three consecutive years, from 2006-2007 to 2008-2009. Schools that met the criteria for years but were missing either reading or mathematics scores for any of those three years were not used (except in Research Question 4). Schools that were labeled as alternative education or special education were not used in this study. Only districts with charter schools included in this study were used for sampling with the non-charter public high schools. The sampling method used, along with a description of the data collection and analysis, are discussed in detail in Chapter 3.

Delimitations and Limitations

The study contained the following delimitations:

1. This study was delimited to districts within the state of Florida with charter and non-charter public schools that had a match with the high school grade level configuration.
2. The study was delimited to districts with charter high schools in the state of Florida.
3. The study was delimited to non-charter public high schools, in the state of Florida, within the districts that also had charter high schools.

4. The study was delimited to comparisons on student achievement of charter and non-charter public schools, and did not attempt to address or analyze parental factors within those settings (parental involvement, satisfaction, perception, education, or yearly income).
5. The study did not attempt to address or analyze structural features such as instructional time, curriculum, or grade levels housed within the schools.
6. The study did not attempt to address or analyze organizational features such as funding, teacher quality, or principal background.

The study contained the following limitations:

1. The study was limited to charter high schools with FCAT scores from 2007-2009 (school years 2006-2007, 2007-2008, and 2008-2009).
2. The study was limited to non-charter public high schools with FCAT scores from 2007-2009 (school years 2006-2007, 2007-2008, and 2008-2009).
3. The study was limited to FCAT data grades 9 and 10 (grades 11 and 12 were not tested on reading and mathematics).
4. The study was limited to charter high schools that reported student demographics (gender, poverty, home language, and race) and faculty professional demographics (advanced degrees, teachers' average years of teaching experience, and percent of courses taught by out of field teachers).
5. The study was limited to non-charter public high schools that reported student demographics (gender, poverty, home language, and race) and faculty professional

demographics (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers).

Significance of Study

Since the 1990s, school choice was a widely debated topic with strong arguments presented by both opponents and supporters. With the charter movement growing and inconsistencies in charter laws across the nation, research was varied from state to state; many charter studies explored data specific to one particular region and consequently could only glean suggestions for that area. Therefore, areas such as California, Texas, Chicago, and Florida, where charter growth continues, tended to be the focus of many studies (Booker, Gill, Zimmer, & Sass, 2009; Booker, Gilpatric, Gronberg, & Jansen, 2006; Booker, Sass, Gill, & Zimmer, 2008; Buddin & Zimmer, 2005; Center for Research on Education Outcomes, 2009a; Zimmer & Buddin, 2006). Florida became a charter school movement leader with the "third highest number of charter schools in the nation" (The Florida Department of Education, Office of Independent Education and Parent Choice, n.d., p. 7). In the age of accountability, detailed information on student achievement related to school trends was essential. Therefore, national policy makers and educational leaders would be interested in the most current information reflecting school choice related to the comparisons of student achievement.

Summary

This chapter provided an introduction to educational reform and traced the history of equity and access, accountability, and the eventual choice movement. Charter schools developed out of the trend of public school choice and grew from the political support geared towards school choice and equal access for all. Chapter 1 also presented the organization of the study, which included the purpose of the study, an outline of the research questions, definition of terms, methodology, population and sample, delimitations and limitations, and the significance of the study. The review of literature which provides insight into the charter movement, an overview of charter schools to include components of charter school laws, financing, and charter school accountability is presented in Chapter 2. A synthesis of current research related to charter schools is also provided in Chapter 2. Chapter 3 will offer an in depth review of the methods and procedures used in this study. Chapter 4 presents the results and analysis of this study. Chapter 5 offers discussion points related to the impact of this study on current research and the educational setting, as well as suggestions for future research.

CHAPTER 2
LITERATURE REVIEW

Introduction

The U.S. educated its children in a variety of settings, which allows parents to have a choice. According to Tice et al. (2006),

> The range of school choice options has expanded to include interdistrict choice plans (i.e., the option for students to attend a public school outside their district without cost to their parents), intradistrict choice plans (i.e., open enrollment or limited choice where students can enroll in any school within the district), publicly funded vouchers to attend private schools, charter schools, private school tuition tax credits, magnet schools, and homeschooling. However, not all these options are available in every state or local community across the United States. States and communities vary in the types of school choice programs they provide. (p. 2)

Figure 1 displays the conceptual framework of choices (Tice et al., 2006).

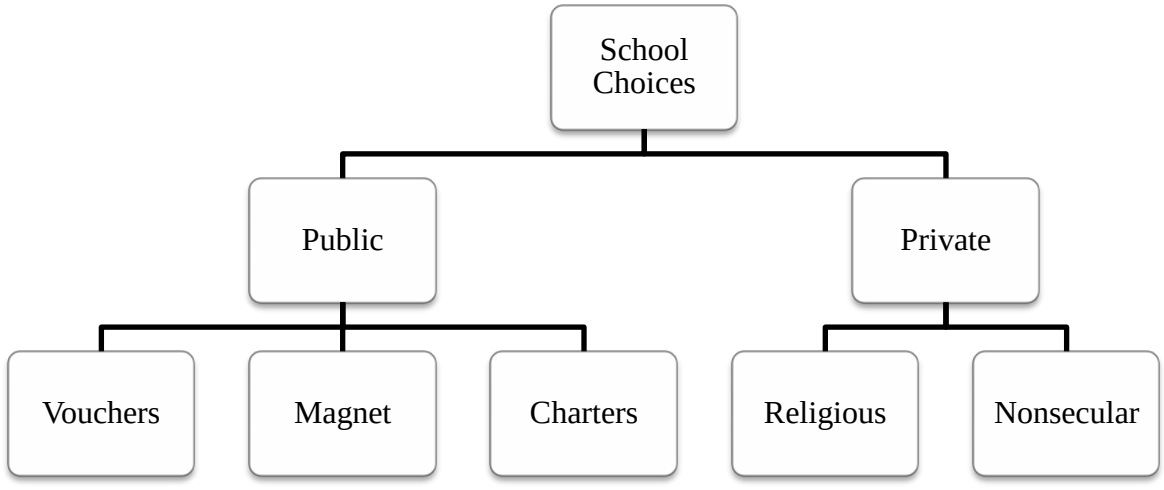


Figure 1 Conceptual Framework of Choices

The researcher conducted the literature review by searching scholarly articles and reports related to school choice at the state and national level, through the University of Central Florida (UCF) online library and databases. Searches for reports and studies published were also conducted through the following websites: (a) U.S. Department of Education, http://www.ed.gov/; (b) National Center for Education Statistics (NCES), http://nces.ed.gov/; (c) National Alliance for Public Charter Schools, http://www. publiccharters.org/; (d) The Center for Education Reform (CER), http://www.edreform. com/Home/; (e) RAND Corporation, http://www.rand.org/; and (f) The Center for Research on Education Outcomes (CREDO), http://credo.stanford.edu/home.html. After an exhaustive search was completed, the researcher reviewed the articles and studies collected, sorted the information by topics presented, narrowed the collection by focus area, and used those works which repeated multiple references. What is presented in this chapter is a synthesized review of those literature sources.

The chapter is organized by presenting an introduction to the conceptual framework of choice and competition in the school setting. An explanation of vouchers, magnet schools and programs, and charter schools is then presented, followed by a discussion of the political focus on school choice and particlarly, charter schools. Information pertaining to charter laws, caps, funding, and the governance structures for states with charter schools, is then explored. Statistics related to the national growth of charter schools is presented, and the chapter concludes with a review of current charter research related to demographics and achievement comparisons, attainment and achievement, and Florida's charter schools.

Choice and Competition

According to Cooper and Randall (2008), the choice of educational settings triggers competition among various groups. Public schools relied on the enrollment of students for their revenue and academic standing, and in the growing age of accountability could not afford to lose their best and brightest student to another setting. While the public school system was a much larger entity, public schools could not restrict the students they serve. Public schools could not accept a select population, charge tuition and fees, and in many cases, cannot tout a special curriculum; in those regards, it is difficult for the public schools to compete with school choices (Cooper & Randall).

> The key to privatization is *choice*, the driving dynamic of empowering clients—the families—to select a school; this creates fear that if schools cannot compete and do not perform, clients can leave, making their preferences known and acting on them. Fear of failure and of loss of students, according to this belief, is the driver for reform. (Cooper & Randall, p. 211)

Vouchers

The fear of privatization perpetuates competition and competition increases with vouchers, the vehicle by which parents can make a selection.

> For more than 150 years, competition has continued between the traditional public and private school sectors. In more recent times, the emergence of charter schools, educational management organizations that contract with local district to run public schools, and various proposals to have education funding follow the child (as in the case of vouchers) have created a "third sector" that provides competition to both the traditional public and private school sectors. (Cooper & Randall, 2008, p. 213)

The idea of a voucher system began in 1955 when libertarian economist Milton Friedman published an essay proposing the program as a means to expand public schools. It was rejected by most and the proposal would not surface again until 1973, when the U.S. Supreme Court

struck down a New York state law, granting parents reimbursement and a tax credit for private tuition (Masci, 1997). On a very small scale, the first voucher plan would emerge in 1990, but the initiative would be rejected in California in 1993. Then, slowly, voucher plans would materialize. Voucher advocates continued with persistence and in 2008 changed strategies and focused on a new audience; they would target low-income families living in neighborhoods that were distraught, promising a better environment for their children. Voucher advocates would entice parents who would not otherwise have the means to send their children outside their zoned school. Depending upon the specific states' parameters, voucher programs may not provide enough tuition assistance for the elite schools, but may allow the students an opportunity to attend a private school (Masci).

Boston (2008) contended vouchers were damaging to public education as they took away funding. "With a voucher system, the public education sector has absolutely no control over the distribution of the funds or whether the students will attend a private, or even religious school" (Cooper & Randall, 2008, p. 216). Boston claimed there was no evidence the students perform better in the private schools supported by voucher programs than the supposed failing schools, yet parents pulled their children from so called failing schools and took them to private entities. According to Boston, voucher programs were luring low income families from distressed areas, but the students still were not receiving a better education.

Magnet Schools and Programs

Magnet schools and programs were another public school choice selection for families in the U.S. "Magnet schools originally emerged as a response to involuntary busing to achieve

racial integration of schools" (U.S. Department of Education, Office of Innovation and Improvement, 2008, p. 1). Magnet schools were public schools, which offered school-wide, specialized curriculum and unique programs, in hopes to attract students with that particular area of interest. A magnet program was similar to a magnet school but on a smaller scale. The program was housed within the public school, and the specialized curriculum and unique courses that make it a magnet program are separate from the standard track of the rest of the school. In essence, a magnet program was a school within a school. The motivation behind both magnet schools and programs, stemed from the concept that students will be more engaged in their learning through programs of interest, which also served as a tool for improving academics. Though working in the confines of the public school arena, magnet schools and programs could restrict enrollment and control population through selection criteria. Magnet schools and programs were unique structures that promoted equity, excellence, and community building; coupled with a thematic focus, magnet schools and programs were enticing to many families, students, and educators (U.S. Department of Education, Office of Innovation and Improvement).

> Choice is a powerful element that can help create the conditions for successful magnet schools. Students are more engaged in the classroom, parents and community members become more actively involved with school life, and staff members feel connected by the curricular coherence and shared culture in schools of choice. (U.S. Department of Education, Office of Innovation and Improvement, p. 2)

Charter Schools

In 1991 charter schools began as an option for families to choose, a type of school that would offer an innovative curriculum, and be free from the bureaucratic systems that entangled the traditional public school. Charter schools were public schools that had autonomy from most

of the local and state educational agency, and charter schools had a large impact on the development of school choice. Charter school program theory involved increasing autonomy for charter schools by shifting the responsibility from local school boards to charter boards (Crew & Anderson, 2003). Charter theory suggested the shift of responsibility will create improved student performance in charter schools, as well as for students in the traditional public school (TPS) setting. The theory also implied that an increased drive for competition between charter and non-charter public schools will develop.

Through the 1990s, charter schools began to emerge throughout the nation and laws were enacted in several states supporting these alternative educational settings (Clark, 2002). In 1994, the federal government, with the reauthorization of the 1965 Elementary and Secondary Education Act (ESEA), backed charter schools. According to The National Alliance for Public Charter Schools (2008a),

> Charter schools are public schools with unique traits that increase the likelihood of a successful education for a child. Charter schools have increased flexibility to adapt to the educational needs of individual children, make timely decisions about developing curriculum, structure the school day, and hire teachers who meet the needs of their students. (¶ 1)

Nearly two decades after the first charter school was established, the charter movement expanded to close to 5,000 schools in 40 states and the District of Columbia, serving 1.4 million students (The Center for Education Reform, 2009d). The movement was still growing, and though 40 states and the District of Columbia have charter schools, the laws and financial structure in each state were inconsistent. The federal government continued to support charter schools and in 2008, the U.S. Department of Education released their vision of charter schools. *A*

Commitment to Quality was the national policy forum report which provided the following vision:

> We envision a charter sector in which:
> Charter schools achieve excellence early in their operations;
> Charter schools improve their performance year in and year out;
> Charter schools that achieve consistently strong results can expand and replicate;
> An infrastructure of improvement grows in its capacity to intervene. (U.S. Department of Education, Office of Innovation and Improvement, p. 3).

However, some states still had caps on charters built into their laws which inhibited charter growth or prevented a new school from opening, until a failing school was closed. Additionally, when states had caps on charters and popularity exceeded capacity, students were left on waiting lists (The Center for Education Reform, 2009d).

The Center for Education Reform (2009d), suggested charters would flourish with strong policies for operations on both the district and the state level; policies that included strong charter laws and sufficient funding, and allowed for the expansion of authorizers to provide a variety of resources and support. Even though much of the accountability remained at the state level, as a choice option, charters were supported at the federal level; appropriate monitoring and accountability that would target those schools in need of improvement for resources and close those schools in constant struggle was encouraged (The Center for Education Reform, 2009d). Despite policy challenges, "individual state data…[indicated] that charters schools…[were] outpacing their conventional public school peers with few resources and tremendous obstacles" (The Center for Education Reform, 2009d, p. 4). Table 6 displays the chronology of the charter school movement.

Table 6
Chronology of Charter School Movement

Date	Event
1970s	Experimentation of public schools choice programs
1971	St Paul and Minneapolis, MN offer first public choice program
1980s	Nation declares schools are in need of reform
1990s	Charter school movement expands to 36 states and the District of Columbia
1991	First charter opens in Minnesota
1992	California enacts the second charter law
1993	California voters reject voucher ballot initiative
1994	Federal government supports charter schools with the reauthorization of ESEA
1995	National Education Association (NEA) supports charters
1998	ESEA amended, funding and support for charter schools is increased
2000s	Charter school movement continues to expand
2000	Presidential campaign, both party candidates vow to support charters
2000	November 14th, Bill and Melinda Gates Foundation give $3 million for charter school development
2002	January 8th, No Child Left Behind Act, requests $300 million in funding for charter schools and support governance of charter to sponsors rather than local school boards

Note. Adapted from Chronology in *CQ Researcher,* (Clark, 2002).

Political Focus

Each presidential election ultimately brings a shift in policies in the name of educational reform, and although the various presidential committees differ on the approach, the promise was at some point to overhaul the public school system (The Center for Education Reform, 2009c). In 1979, President Carter established the Department of Education, for the purpose of combining federal dollars with school improvement (Allen, Chavous, Engler, Whitmire, & Williams, 2009). During the 1980s, the Reagan administration focus turned to the crisis of mediocrity, exposed by *A Nation at Risk*. President George W. Bush left his mark on the public school system with the call for accountability through The No Child Left Behind Act of 2002, only to unveil more issues stemming from data reporting and student subgroup deficiencies (Allen et al.).

NCLB and Choice

"School choice in American education has long been available to some parents who can send their children to private schools" (Tice, Chapman, Princiotta, & Bielick, 2006, p. 2). Public school alternative options began as early as 1971 when St. Paul and Minneapolis, MN opened the first public choice program (Clark, 2002), but with The No Child Left Behind Act of 2002 (NCLB), the options increased and the choice movement was catapulted into action along with the growing charter movement. Under NCLB, choice options for families included (a) unsafe schools, Title IX, section 9532; (b) public school choice, Title I, section 1116(b)(E); and (c) supplemental services, Title I, section 1116(e) (U.S. Department of Education, 2003). The public school choice option from NCLB grew into more than a choice movement, because the stipulations required the Title I schools offer choice options for their families to leave their

school if they have not met adequate yearly progress and have not show continued improvement (U.S. Department of Education, 2003). There were tiers to the improvement levels which may eventually lead to corrective action or complete restructuring, but there was also a competitive suggestion that schools will improve for fear of losing their students. Families can opt to send their student to a public charter school when using this choice option; however, the school must be within the local educational agency (LEA), or school district.

President Obama's Education Plan

In a speech on March 10, 2009 at the U.S. Hispanic Chamber of Commerce, President Obama called for a complete overhaul to the education system and challenged Americans to prepare for an innovative way to educate children and young people. "Despite resources that are unmatched anywhere in the world, we have let our grades slip, our schools crumble, our teacher quality fall short, and other nations outpace us…The relative decline of American education is untenable for our economy, unsustainable for our democracy, and unacceptable for our children. We cannot afford to let it continue. What is at stake is nothing less than the American dream." (Associated Press, ¶6, 2009). During that speech the President also endorsed charter school expansion, supported increasing the accountability for those schools, promoted improvements in state charter laws, discouraged states from having caps on the number of charters allowed, and pushed for states to provide adequate funding for charters.

On June 22, 2009, the U.S. Secretary of Education, Arne Duncan, was the keynote speaker at the National Charter Schools Conference: Leading Change in Public Education. During his keynote speech, Secretary Duncan emphasized the presidential support of charter

schools. He discussed the challenges faced in all public school environments, from inner-city to suburban, but encouraged the public to push for high standards across all locations and either turn around, or support the closure of low performing schools. Secretary Duncan stated

> Nationally, about 30% of our students never graduate from high-school, and too many of those that do graduate struggle both academically and financially to be successful in the world of higher education. This is … a time of huge opportunity, with $100 billion in new money for public education. But … money alone won't solve this problem. If we simply invest in the status quo that won't get us where we need to go. With unprecedented resources has to come unprecedented reform. (Duncan, ¶2-3, 2009)

The areas of reform Secretary Duncan referenced in his speech connect to (a) challenging, college-ready and career ready, international standards, (b) strong and inclusive data systems to track students to teachers and teachers to their educational backgrounds, (c) a recruitment and rewards system to maintain teacher and principal excellence, and (d) a commitment to turn around low performing schools (Duncan, 2009). The funding referenced in Secretary Duncan's speech was associated with the Race to the Top Fund, established to entice states with developing plans for innovative reform through competitive grants. According to the U.S. Department of Education website (2010), program description for the Race to the Top Fund

> Awards in Race to the Top will go to States that are leading the way with ambitious yet achievable plans for implementing coherent, compelling, and comprehensive education reform. Race to the Top winners will help trail-blaze effective reforms and provide examples for States and local school districts throughout the country to follow as they too are hard at work on reforms that can transform our schools for decades to come. (¶2)

Like the funding, the areas of reform referenced in Secretary Duncan's speech were also connected to the Race to the Top Fund. States were asked to submit applications focused on four specific areas:

1. Adopting standards and assessments that prepare students to succeed in college and the workplace and to compete in the global economy;

2. Building data systems that measure student growth and success, and inform teachers and principals about how they can improve instruction;
3. Recruiting, developing, rewarding, and retaining effective teachers and principals, especially where they are needed most; and
4. Turning around our lowest-achieving schools. (U.S. Department of Education, ¶1, 2010)

It was the charter movement that Secretary Duncan endorsed to address school turnarounds.

> The charter movement is absolutely one of the most profound changes in American education, bringing new options to under-served communities and introducing competition and innovation into the educational system. (Duncan, ¶15, 2009).

However, the Secretary recognized even though charter schools operate in an autonomous environment, charters must be held accountable for providing a quality education to their students. Secretary Duncan encouraged charter authorizers to seek high standards for charter approvals as well as the academic and operational maintenance of existing charters (Duncan, 2009).

Mandate for change

For nearly two decades, school choice has been the topic of reform agendas and has received much attention in the political arena; among the selection for choice, charter schools have been given the most attention. The Center for Education Reform (CER) "is a 501c(3) public, non-profit corporation organized in the District of Columbia in 1993" (The Center for Education Reform, ¶4, 2009b). CER aimed to provide information and statistics in an effort to educate the public towards change by "advocating for school choice, advancing the charter

school movement, and challenging the education establishment" (The Center for Education Reform ¶1, 2009b).

In 2009, the CER published, *Mandate for Change*, a prescription to government leaders, policymakers, educational leaders, and the rest of the community to transform the educational system. The monograph followed a basic proposal for change centered on five themes (a) federal accountability, (b) transparency, (c) charter schools, (d) school choice, and (e) improvements in teacher quality. The recommendation for federal accountability encouraged changes such as national standards and curriculum controlled at the federal level; at the time of this publication, the States controlled the accountability for the schools related to standards and curriculum. Transparency was suggested to foster informed decisions, by providing timely data on students and schools at all levels. Charter schools, surrounded by strong laws and proper finance were recommended by many reformists and viewed as the answer to innovative schools. School choice was suggested to create an opportunity for all parents and students, to choose freely and without restrictions. Finally, offering performance pay and raising the standards for teaching, were options to ensure improvements for teacher quality (Allen et al., 2009).

Charter Laws and Caps

The basic assumption behind the structure of a charter school was a public school with autonomy, allowed to operate free from the bureaucracy the other public schools lived under. Charter schools did not operate under the premise of a one size fits all themes, and therefore,

could handle the diversity of students who often flooded their doors. Successful charter schools offered flexibility and innovation which lead to student success.

> Most importantly, charter schools are ultimately beholden to the public, the individual families, who may freely choose them or not….many successful charter schools have striking commonalities in the underlying principles that contribute to their overall success….these core principles, grounded in a culture of accountability and high expectations, create an environment conducive to learning and to kids fulfilling their potential. (Allen et al., p. 21, 2009)

As the nation accelerated towards increased academic achievement, charter schools offered a strong support system for students. Successful charter schools functioned under strong charter laws that held schools accountable, and those schools which did not meet the quality standards necessary for student success, were closed by the enforcement of the laws. If a charter school could not offer the competitive edge the students needed, away from their traditional public school, then it failed to serve its purpose. According to The Center for Education Reform (2009a), charter schools had the ability to sustain an increase in student achievement, when the state's charter laws were supportive and strong accountability systems were put into place; this also allowed parents to make informed decisions on school choice. It was not surprising then, that these were conditions of President Obama's education plan and his Race to the Top challenge to change the way America educated its youth (The Center for Education Reform, 2009c). Charter schools that existed in an environment supported by open policy and community support, had the ability to evolve with the growth of the state, have shown increased or at least sustained enrollment, as well as sustained student achievement, in spite of operational deficiencies or inadequate funding.

"One of the leading causes of bad charter schools is a bad charter school law" (Allen et al., 2009, p. 22). A solid charter law offered three components (a) autonomy, legally, operationally, and fiscally; (b) proper funding, not adequate funding, but funding that was equivalent to the traditional public school counterparts; and (c) multiple authorizers, that allowed for an even distribution of influence and power (Allen et al., 2009). Some state laws structured the charter support by forcing unsuccessful schools to close. However, those states with strong charter laws and policies could still have schools that closed, but closures were more likely due to operational or financial challenges, which were seen before academics decline. One of the goals of a strong charter law was to allow those schools the flexibility to prosper, the autonomy to build a curriculum centered on student need, while holding the school accountable for student progress, understanding that the consequence for lack of success was school closure.

The Center for Education Reform provided national data on charter school achievement, accountability, charter laws, and scorecards. The 2009 Charter school ranking and scorecard (The Center for Education Reform, 2009c) ranked each of the 40 states and District of Columbia that had charter schools by their laws, and provided a scorecard ranking of their laws. The ranking index for 2009 was based on a 55 point scale from four major categories: (a) multiple authorizers, (b) equity, (c) operations, and (d) the number of schools allowed. According to the CER, multiple chartering authorizers would earn 15 points and was defined in the following statements.

> Does the state permit entities other than traditional school boards to create and manage charter schools independently, and does the existence of such a provision actually lead to the active practice of independent authorizing? Independent entities may include

> universities, independent boards, and mayors. (The Center for Education Reform, 2009c, p. 5)

The category of equity would earn 15 points and was defined in the following statements.

> Fiscal equity requires that not only are the amounts received the same, but charters receive monies from the identical streams and routes as other schools. If the law guarantees that charter schools receive money that is the same amount as and received in the same manner as traditional public schools, then they will be viewed as and treated the same as public schools in law and practice. (The Center for Education Reform, p. 5)

The operations category would also earn 15 points and was defined in the following statements.

> How much independence from existing state and district operational rules and procedures is codified in law and results in freedom and flexibility as intended? In the early charter laws, a provision known as the blanket waiver ensured that once opened, charter schools could set their own processes and rules for operations, while still adhering to standards, safety and civil rights requirements. (The Center for Education Reform, p. 5)

The final category, number of schools allowed, earned 10 points and was defined in the following terms.

> How many charter schools are allowed to open, whether annually, in total throughout the state, or on a local level? Do the caps imposed through charter law hinder the growth and development of the charter school movement in the state? …Restrictions are not only defined by how many schools exist—some states also restrict total enrollment and per pupil revenue to limit charter growth. (States were able to score extra—or lose—points for accountability and other factors). (The Center for Education Reform, 2009c, p. 5)

See Appendix A for a summary of the ranking index of charter state laws for 2009.

Even though some states had weak charter laws and allowed caps which stunted growth, some states were still experiencing academic success. For example, Rhode Island "charter schools face many obstacles…including a weak charter school law, a cap on the number of schools that can open, and a lack of funding and facilities" (The Center for Education Reform, 2009d, p. 55), yet its charter schools outperformed the traditional public schools in both reading and mathematics, and all the charters in Rhode Island met Adequate Yearly Progress (AYP) in

the 2008 school year. Furthermore, none of the charter schools in Rhode Island closed since the charter laws were first enacted in 1995 (The Center for Education Reform, 2009d).

State Governances

Since each state varied widely in its school policies, including charter laws, it was important to understand the governing components of charters at the state level. Ultimately, the States were responsible for building their own education system with their Boards of Education and Chief Officers, sometimes called State Superintendents or Commissioners of Education. This part of the state governance structure oversaw teacher certification, graduation requirements, state testing, and budget; this was in addition to monitoring the federal requirements. Each state differed between elected and appointed officials, most fell under four general categories: (a) the Governor appoints the Board of Education, and the Board in turn appoints the Chief State School Officer, (b) the governor appoints the Board of Education and the Chief State School Officer is elected, (c) the Governor appoints both the Board of Education and the Chief State School Officer, and (d) the Board of Education is elected, and the Board in turn appoints the Chief State School Officer. Table 7 displays the educational governing structure of 39 of the 40 states with charter schools. The state of Wisconsin was not listed in the publication with governing structures, but did have charter schools.

Table 7
Educational Governing Structures of the Charter States

States with Governor appointed Boards and Board appointed Chiefs	States with Governor appointed Boards and elected Chiefs	States with Governor appointed Boards and Chiefs	States with elected Boards and Board appointed Chiefs
Alaska	Arizona	Iowa	Colorado
Arkansas	California	Minnesota	Florida
Connecticut	Georgia	New Jersey	Hawaii
Delaware	Idaho	Pennsylvania	Kansas
Illinois	Indiana	Tennessee	Louisiana
Maryland	North Carolina	Virginia	Michigan
Massachusetts	Oklahoma	Texas	Nevada
Missouri	Oregon		New Mexico
Rhode Island	Wyoming		New York
Mississippi			Ohio
New Hampshire			South Carolina
			Utah

Note. The Center for Education Reform, 2009f

Charter Funding

Many charter schools serve students from a minority population, those who were English Language Learners, or students with disabilities. In addition to the diversity in demographics, many charter schools existed in states with weak laws, insufficient funding, unstable or low enrollment, financial deficiencies, and sometimes low academic performance. Despite the challenges charter schools faced, because of their flexibility and autonomy they were offered, many successfully stayed open. Approximately 12 percent of the charters that opened had closed, and the majority of the closures were due to funding. “Of the over 5,250 charter schools that have ever opened, 657 have closed since 1992….41 percent of the nation’s charter closures resulted from financial deficiencies caused by either low student enrollment or inequitable funding…27 percent were closed for mismanagement [and] 14 percent of the nation’s charters

have been shut down for poor academic performance". (The Center for Education Reform, 2009a, p. 1) Table 8 displays the 2009 charter school data from the 40 states and the District of Columbia, that had charters schools, the number of schools ever opened in the state, the number that closed, and the total enrollment, by state, as of 2009 as printed in *The Accountability Report* (The Center for Education Reform, 2009d, p. 8).

Table 8
2009 Charter School Openings, Closures, and Total Enrollment

State	Total Operating	Total Closed	Total Enrollment
Alaska	26	5	5,198
Arizona	510	96	119,903
Arkansas	25	6	6,750
California	802	103	316,468
Colorado	151	10	54,497
Connecticut	21	5	3,932
Delaware	21	2	8,740
DC	93	16	25,385
Florida	382	82	108,382
Georgia	83	5	40,807
Hawaii	32	0	7,317
Idaho	32	1	10,492
Illinois	74	8	27,683
Indiana	50	2	12,631
Iowa	10	0	1,462
Kansas	40	10	3,361
Louisiana	66	10	23,364
Maryland	34	2	7,301
Massachusetts	64	6	23,905
Michigan	250	27	94,092
Minnesota	159	29	28,371
Mississippi	1	0	367
Missouri	39	5	13,125
Nevada	26	7	7,295
New Hampshire	11	2	1,212
New Jersey	64	19	17,986
New Mexico	70	3	11,426
New York	118	10	32,602
North Carolina	103	32	30,445
Ohio	293	48	94,171
Oklahoma	14	1	4,770
Oregon	93	8	13,612
Pennsylvania	133	12	61,823
Rhode Island	11	0	2,894
South Carolina	36	10	8,705
Tennessee	14	1	2,585
Texas	331	33	108,541
Utah	68	1	23,233
Virginia	4	3	275
Wisconsin	221	37	41,799
Wyoming	3	0	244
TOTAL	4,578	657	1,407,421

Note. Although North Carolina had a state charter school cap of 100, the total number of campuses (allowed under the same charter) operating was 103.

Charter schools were public schools but they were not funded as equally as their traditional public school counterparts. “Charter schools across the country… [were] funded at only 61 percent of their conventional public school counterparts” (The Center for Education Reform, 2009a, p. 1) and they did not have the same access to facilities or facility funding as the traditional public schools. This inadequate distribution in facility funding forced charter schools to use their operational funds for building issues. “This funding inequity is particularly onerous for newly opened charter schools because school leaders must spend a significant portion of their time and budget in the important early years of operation on finding and funding facilities in which to operate” (Office of Innovation and Improvement, p. 4), when the first few years of a charter school were critical to building an academic foundation for student achievement. Charter schools took 3-5 years to build an academic structure that produced positive student achievement results, and they typically do not show student gains until after their first year of operation. Therefore, policy makers should consider the length of time charters require to show adequate student improvement when reviewing state charter laws related to funding and caps (Zimmer et al., 2009).

Although charters were not funded at 100% per pupil at the state level, as compared to their traditional public school counterparts, the federal government was backing charter schools with funding at the federal level. Since the year 2000, funding from the federal government increased more than $60,000,000 for charter school programs. Table 9 displays the funding over the last 10 years at the federal level.

Table 9
Funding Status of Charter Schools Program from 2000-2009.

Year	Appropriation
2009	$216,031,000
2008	190,000,000
2007	200,000,000
2006	214,782,480
2005	216,952,384
2004	218,702,000
2003	198,700,000
2002	200,000,000
2001	190,000,000
2000	145,000,000

National Growth

The *Public Charter School Dashboard 2009,* published by the National Alliance for Public Charter Schools, provided information related to the growth and development of public charter schools across the nation. The Dashboard presented statistical indicators on charter schools such as: (a) enrollment, (b) race/ethnicity, (c) grade configurations, (d) geographic locations, and (e) percentage of students in charters. The Dashboard also provided a state by state comparison on population, growth, performance and accountability, and policy environment. Table 10 displays the statistics presented in the Dashboard from the school years 1999-2000 through 2008-2009.

Table 10
Growth of Charter Schools from 1999 to 2009

	Increase (+) Decrease (-)	School Year 1999-2000	School Year 2008-2009
Student population	+	349,642	1,407,817
Students as percent of public school students	+	0.7	2.9
Race/Ethnicity Percentages			
White	_	41.9	38.5
Black	_	33.1	29.7
Hispanic	+	19.4	24.6
Asian	+	2.8	3.9
Free and Reduced Lunch Percent	+	27.6	47.9
Grade Configurations Percentages			
Elementary	_	50.3	45.8
Middle	_	8.6	7.9
Middle/High	_	9.9	9.1
High	+	13.6	16.7
Elementary/Middle/High	+	17.7	20.4
Geographic Location Percentages			
City	+	54.5	55.7
Suburb	_	32	25
Town	_	3.7	5.9
Rural	+	9.9	13.5

Note. National Alliance for Public Charter Schools, 2009b

Charter Studies

The first charter school opened in 1992, and in 2009, "charter schools continue to be hotly debated, but rigorous research on charter-school impacts has only recently begun to inform the debate" (Zimmer et al., 2009, p. 83). Studies on charter schools vary and have been reported from sources ranging from large universities, national statistics centers, and think tanks, to dissertations and state evaluations. RAND, a nonprofit corporation which focuses on research in

policy issues related to national security, education, health, business, law, and science, has provided a substantial amount of research on charter schools (RAND Corporation, 2009). The National Center for Education Statistics (NCES), which collected data and analyzes research for the U.S. Department of Education, also published extensive studies reporting on the performance of charter schools, staff surveys, and opportunity scholarships (National Center for Education Statistics, n.d.). The National Alliance for Public Charter Schools (NAPCS) provided data at the state and federal level on charter schools and reported annually on the quality of charter schools (National Alliance for Public Charter Schools, 2008a). The Center for Education Reform (CER) published a comprehensive study on charter schools for each of the 40 states and the District of Columbia that had charters, with data results on overall student achievement comparisons between charters and traditional public schools, as well as a general overview of the state charter law and funding. The information on charter schools was sporadically pulled across regions, but in 2009, a publication from the NAPCS contained 140 studies from the 210 studies published by that year; the research on charter schools was growing. However, many charter studies explored data specific to one particular region and therefore, would only glean suggestions for that area; this was due partly to the inconsistencies in charter laws throughout the United States, which created an imbalance on the grade level configuration of charter schools and the number of quality schools that exist (The Center for Education Reform, 2009d). Therefore, areas such as California, Texas, Chicago, and Florida, where charter growth continued, tended to be the focus of many studies (Booker et al., 2009; Booker et al., 2006; Booker et al., 2008; Buddin & Zimmer, 2005; CREDO, 2009; Zimmer & Buddin, 2006; Greene, Forster, & Winters, 2003).

Student Demographics, Test Scores, and Attainment

Research did vary across region and population on charter schools, and the charter school research was not only inconsistent, but most studies published did not compare similar populations or settings; many studies were not drawing fair recommendations (Greene et al., 2003). “Assessing the academic performance of charter schools is difficult, because many charter schools serve specifically targeted populations such as at-risk students, disabled students, and juvenile delinquents” (Greene et al., p. 1), thus making a comparative analysis more challenging. However, charters were by definition, different than the traditional public schools (TPS) and they were typically the schools of reform. Besides the autonomy charter schools were afforded, their setting and grade level configuration often varied, and their student population was often targeted, unlike the TPSs.

A national study using data from 11 states that compared charter schools and traditional public schools from a similar setting and population, showed untargeted charter schools have a positive effect on student achievement as measured by test scores (Greene et al., 2003). The researchers analyzed a one year comparison of test scores in order to examine the change in test scores and the average scale score or percentile rank, with school level data. “Looking at year-to-year score changes rather than single-year levels allows … to further filter out some of the influence of student and family background factors, focusing instead on the contribution each school makes to learning” (Greene et al., p. 7).

Results of the study showed that overall, untargeted charter schools had a positive effect on test scores in mathematics and reading and charter school test scores were higher than

neighboring schools. Florida and Texas charter school test scores were statistically significant compared to their neighboring schools, with Texas scoring this highest. Table 11 displays an analysis of the Greene, Forster, and Winters (2003) study.

Table 11
Analysis of Greene, Forster, and Winters Study

Study Elements	Descriptors
Title	Apples to Apples: An Evaluation of Charter Schools Serving General Student Populations
Setting	National analysis using combined data from 11 states: Arizona, California, Florida, Texas, Michigan, Ohio, Colorado, North Carolina, Minnesota, Pennsylvania, and New Jersey
Questions	Do untargeted charter schools have a positive effect on test scores, as compared to neighboring public schools?
Process	One year comparison of untargeted charter schools (charters schools that do not service a specific population such as at risk or students with disabilities) and neighboring public schools, using student level test score gain.
Findings	Overall, charter schools have a positive effect on test scores as compared to neighboring schools, with a moderate effect size. In mathematics, charter schools scored 0.08 standard deviations higher than the neighboring schools, the equivalent to 3 percentile points from the 50th percentile. In reading, charter schools scored 0.04 standard deviations higher than neighboring schools, 2 percentile points from the 50th percentile. Individual state results were reported for Arizona, California, North Carolina, Florida and Texas. Results for Arizona, California, and North Carolina were not statistically significant. Arizona results were inconsistent with a small effect, California effects were small but positive, and North Carolina was not statistically significant. Charter schools were statistically significantly higher in Florida and Texas, with Texas scoring this highest. Texas charters scored 0.18 standard deviations higher in math and 0.19 standard deviations higher in reading, the equivalent of 7 and 8 percentile points, respectively, from the 50th percentile.

Note. Greene et al., 2003

Zimmer et al. (2009) attempted to fill the gaps of some research by providing information across a span of several locations with their study on the effects of charter schools in eight states. The research focused on the characteristics and test score gains of students in charter schools, test score impact between traditional public schools and charter schools, and the effect of charter high schools on college entrance and graduation. Data were gathered from eight areas across the U.S., with samples from five major cities and three states which included (a) Chicago, (b) Denver, (c) Milwaukee, (d) Philadelphia, (e) San Diego, (f) Florida, (g) Ohio, and (h) Texas.

Opponents of charter schools often argued charters take the best and brightest students from the traditional public schools (TPS), and leave schools already challenged by economics and demographics in a more overwhelming position. However, results of Zimmer et al. (2009) indicated “no evidence that charter schools are systematically attracting above average students” (p. 84). The study suggested students in both charter and TPS settings have similar achievement levels and charter transfers were not creating achievement drops in the TPSs. Both school types were found to serve similar demographic populations within the same locale; transfers into charters did not appear to cause racial imbalance in the TPS environments (Zimmer et al.).

Regarding educational attainment, studies suggested charter schools had a positive impact on high school graduation and college enrollment (Booker et al., 2008; Zimmer et al., 2009). In Florida and Chicago, two regions in the U.S. that have experienced rapid charter school expansions, students in charter high schools were more likely to graduate than those students in the TPS setting, and students who had a continuous charter experience from middle to high school, were more likely to enroll in college than their TPS peers (Booker et al.; Zimmer et al.).

However, the grade configurations among traditional schools in Florida and Chicago differ from those in charter schools. Traditional public schools in both regions separated the high school and middle school grade levels, yet high school course work was typically offered in the middle school setting; many charters combined secondary grade levels within one school structure.

The Zimmer et al. (2009) study presented a snapshot of charter schools and their students, in regards to demographics and achievement, across the nation. As the charter movement continued to grow, more research should be available to outline both state and national charter school information. Table 12 displays the summary components of the Zimmer et al. (2009) study.

Table 12
Analysis of Zimmer, Gill, Booker, Lavertu, Sass and Witte, (2009) Study

Study Elements	Descriptors
Title	Charter Schools in Eight States: Effects on Achievement, Attainment Integration, and Competition
Setting	Chicago, San Diego, Philadelphia, Denver, Milwaukee, and the states of Ohio, Texas, and (for question 3 only) Florida (p. xii). The setting varied extensively per region (see Appendix B).
Questions	1. What are the characteristics of students transferring to charter schools (p. xii)? 2. What effect do charter schools have on test-score gains for students who transfer between TPSs and charter schools (p. xii)? 3. What is the effect of attending a charter high school on the probability of graduating and entering college (p. xii)? 4. What effect does the introduction of charter schools have on test scores of students in nearby TPSs (p. xii)?
Process	Non-experimental evaluation that used longitudinal, student-level achievement data.
Findings	No evidence that charter schools are systematically attracting above average students. Transfers to charter schools do not involve dramatic shifts in the sorting of students by race (p. 84). In the two locations with data on educational attainment outcomes (Florida and Chicago), attending a charter high school is associated with statistically significant and substantial increases in the probability of graduating and of enrolling in college (p. 86). Students were more likely to enroll in college when they transferred from a charter middle school and then to a charter high school. There is no evidence in any of the locations that charter schools are negatively affecting the achievement of students in nearby TPSs (p. 86).

Note. Zimmer et al., 2009

Closing the achievement gap among students in racial and ethnic categories, along with socio-economic status, was a challenge faced by many schools and districts. The difficulty was

more prevalent in the urban areas which tended to serve “the vast majority of poor, minority, and immigrant children in the country” (Zimmer & Buddin, 2006, p. 307). Many reformers proposed charter schools as the answer to closing the achievement gap among these groups of students. Zimmer and Buddin examined the performance of charter schools in two of the nation’s large urban districts, by using student level data for both reading and mathematics, along with demographics which included grade, gender, ethnicity, and English proficiency (LEP). They also analyzed both elementary and secondary school data, with the secondary data including both middle and high schools.

In an analysis of student achievement, longitudinal data were used “to control for …unmeasured student factors that affect achievement from year to year” such as parental support for student learning or student motivation (Zimmer & Buddin, 2006, p. 312). The study used test scores measuring gains over time and revealed charter schools were not outperforming the traditional public schools. Furthermore, Zimmer and Buddin found no evidence to support reformers that charter schools assisted in closing the achievement gap. Table 13 displays the analysis of the Zimmer and Buddin.

Table 13
Analysis of Zimmer and Buddin (2006) Study

Study Elements	Descriptors
Title	Charter School Performance in Two Large Urban Districts
Setting	Elementary and secondary data from two large urban districts in California
Questions	1. Are charter schools in urban districts closing the achievement gap for disadvantaged students? 2. What are the comparisons of enrollment and demographics between charter schools and traditional public schools (TPSs)?
Process	Used student level data from 1997-98 through 2001-02, for reading and mathematics, along with demographics (grade, gender, ethnicity, and English proficiency (LEP)), measuring gains over time. Used separate analyses for elementary and secondary data and for the two different districts.
Findings	Scores vary substantially across race/ethnicity and LEP groups between charter schools and TPSs. Black and Hispanic students average 14 to 22 points lower in reading and math, and LEP students average 10 points lower in both reading and math. Charter enrollment was lower than TPS enrollment. There was a disproportionate representation among racial demographics. Hispanic students were underrepresented in both elementary and secondary charter schools, while Black students were overrepresented in both settings. LEP enrollments varied among districts (see Tables 13 and 14 for more demographic information).

Note. Zimmer & Buddin, 2006

In an analysis of charter school and traditional public school (TPS) enrollment, Zimmer and Buddin (2006) found charter enrollment much lower than the TPS, with the enrollment in charter schools ranging from “about four and two percent of elementary and secondary students, respectively” in one district, “compared to about two and eight percent of elementary and

secondary students" in another district (Zimmer & Buddin, 2006, p. 311). A demographic comparison between charter schools and TPSs, revealed a disproportionate representation among races. Hispanics were underrepresented in both elementary and secondary charter schools, while Blacks were overrepresented in both elementary and secondary charter schools. The comparison of Limited English Proficient (LEP) student enrollment showed a large variance among districts and TPSs versus charters. In one district, LEP enrollment was about 20 percentage points lower in charter schools than TPSs for both elementary and secondary settings, but in another district the enrollment was within 4 and 6 percentage points, with charters still enrolling a lower percentage of LEP students. Table 14 shows the demographic analysis among traditional public schools versus charters schools in the districts studied.

Table 14
Demographic Comparisons Between Traditional and Charter Schools

	District 1		District 2	
	TPS	Charters	TPS	Charters
Elementary Percentages				
Black	11	41	16	41
Hispanic	73	44	39	34
LEP	49	28	33	29
Secondary Percentages				
Black	13	54	14	19
Hispanic	69	23	33	45
LEP	29	10	78	72

Note. Zimmer & Buddin, 2006

Zimmer and Buddin (2006) suggested charter schools were merely keeping the pace with student achievement, rather than exceeding their traditional public school (TPS) counterparts. Furthermore, according to Zimmer and Buddin, charters were no more effectively closing the

achievement gap than the TPSs. Other factors such as curriculum development, student and parent school satisfaction, or social and emotional student growth, were not examined in their study. Results of this study should be considered important when reviewing school choice policy, since "one of the strongest rationales for charter schools, and school choice generally, is that choice gives greater opportunities for disadvantaged students, primarily minority students" (Zimmer & Buddin, p. 324).

Charter Schools and Student Performance

Booker, Gill, Zimmer, and Sass (2009) conducted a study on attainment and achievement in Chicago charter schools. The study presented an analysis on data at the student level, related to student achievement and racial integration in Chicago charter schools; the study also examined educational attainment among Chicago's charter high schools. Booker et al. (2009) supported the results of Zimmer et al. (2009) that students transferring into charter schools perform on close to the same achievement levels as those in traditional public schools (TPS). With the exception of the first year of a charter school's operation, when students tend to experience a small decline in performance in charter schools, students on average perform similarly to their peers in both settings.

When examining prior year student achievement in reading and mathematics, Booker et al. (2009) found

> Students transferring to charter schools differ only slightly from the citywide average and from the achievement levels of peers in their TPSs. In math, students transferring to charters had prior scores slightly below the district average and slightly above average in the TPSs they exited. In reading, students transferring to charters had scores that were marginally above the district wide average and slightly above averages in the TPSs they

> exited. Overall differences between students transferring to charters and their TPS peers are statistically significant. (p. 6)

When the data were analyzed by race and ethnicity, results were similar as the researchers "found no evidence that charter schools are having a substantial effect on the peer composition of TPSs, as measured by student achievement" (Booker et al., 2009, p. 6). There was a 1% difference between the percentage of Black students attending charter schools and those in TPSs, a 0.9% difference between Hispanic students, and a 1% difference between White students. "On average, the charter schools…have a citywide racial and ethnic composition that is nearly identical to the citywide racial and ethnic composition of the TPSs" (Booker et al., 2009, pp. 6-7).

The study provided a general overview of the racial and ethnic composition between school types, and indicated "as with achievement levels, there is no evidence that charter schools are serving a select population of students" (Booker et al., 2009, p. 7). The researchers also found "for each of the three racial and ethnic groups… transferring students are moving to schools with lower proportions of other students of the same race or ethnicity…[indicating] charter schools in Chicago do not increase racial stratification across schools" (Booker et al., 2009, p. 7). Table 15 displays the analysis of the Booker et al. (2009) study.

Table 15
Analysis of the Booker, Gill, Zimmer, and Sass (2009) Study

Study Elements	Descriptors
Title	Achievement and Attainment in Chicago Charter Schools
Setting	Chicago Public Schools
Questions	1. Are charter schools attracting low or high-achieving students? 2. Do charter school students perform differently than traditional public school (TPS) students? 3. What are the Educational attainment outcomes for charter high schools? 4. What effects do charter transfers have on the racial integration in the TPSs?
Process	Student level data from grades 3-8 in reading and math, for years 1997-98 through 2006-07 was analyzed. Prior year student achievement was examined for students transferring into charters, and those at traditional public schools, then compared to the district averages. Data from high school and post secondary schools was tracked from five cohorts of grade eight students for years 1998-99 through 2002-03. Data were examined to analyze attainment outcome of charter high schools along with racial integrations.
Findings	Students transferring into charters perform on close to the same achievement levels as those in traditional public schools. There is no difference on race and ethnic composition of schools and no evidence charters are serving a different population. Charter transfers have very little effect on the racial integration in the TPSs. A 1% difference between the percentage of Black students attending charter and TPSs existed, a 0.9% difference between Hispanic students, and a 1% difference between White students, of the respective school types. Eighth grade charter students were 7% more likely to graduate if attending a charter high school, and 11% more likely to enroll in college.

Note. Booker et al., 2009

Florida's Charter Schools

In 1996, Florida began its growth and support of charter schools. During that year, the State legislators enacted a law in support of public school choice options, "requiring each school district to develop an open enrollment choice plan" (Florida Department of Education, Office of Independent Education and Parental Choice, n.d.b, p. 11). Open enrollment encouraged the parental choice options for public schools, as "the legislature expressed the belief that public school choice will: cultivate constructive competition, serve as an impetus for academic improvement, [and] foster greater accountability within the school system" (p. 11).

As of 2010, Florida's law for open enrollment choice plans was in effect. Each district in the state was required to report the plans annually. Florida published a Controlled Open Enrollment Annual Report for the years 2007-08 and 2008-09. In that report trend data on student participation in open enrollment and other school choice options were published. Table 16 displays the trend data for Florida, related to student participation from 2004-05 through 2007-08.

Table 16
Florida Trend Data Related to Student Participation for 2004-05, 2005-06, 2006-07, and 2007-08

Year	Total K-12 Membership	Numbers of Students Enrolled in Controlled Open Enrollment	Percent of Students Enrolled in COE	Numbers of Students Enrolled in Other Public School Options*	Percent of Students Enrolled in Other Public School Options*	Total Number of Students Attending Schools Based on Parental School Choice Options	Percent of Students Attending Schools Based on Parental School Choice Options
2004-2005	2,912,326	370,090	12.71	275,352	9.50	645,442	22.21
2005-2006	2,901,455	342,987	11.82	314,001	10.82	656,988	22.64
2006-2007	2,946,463	352,735	11.97	314,380	10.68	667,115	22.65
2007-2008	2,906,272	361,095	12.42	337,164	11.60	698,259	24.02

* Includes special programs, NCLB school choice, Opportunity Scholarships, McKay Scholarships, Florida School for the Deaf and Blind, University Lab Schools, charter schools, K8 Virtual, and Florida Virtual School.

Note. Florida Department of Education, Bureau of Student Assistance, Office of Public School Options, p. 6, 2008

> Charter schools have played a key role in increasing parental options in public education and providing innovative learning opportunities for students [in Florida] … Florida's charter schools strive to provide parents with smaller classes, alternative curriculum and more chances for parental involvement. (Florida Department of Education, Office of Independent Education and Parental Choice, n.d.b, p. 7)

Florida became a charter school movement leader with the "third highest number of charter schools in the nation" (Office of Independent Education and Parent Choice & The Bureau of Public School Options, K-12 Public Schools, n.d., p. 7).

> Since 1996, the number of charter schools in Florida has grown from 5 to 389 schools in 2008-2009. Charter school student enrollment for 2008-2009 was well over 100,000 students. Over 50 new charter schools have opened in the 2008-2009 school year. (Florida Department of Education, Office of Independent Educational and Parental Choice, n.d.a, ¶2)

Current research ranged from national to state specific on the academic achievement for students in charter schools compared to traditional public schools. However, little information had been garnished on the accountability and achievement results for only charter high schools; generally comprehensive, national reviews on charter school performances, tended to concentrate on elementary and middle school data, or included elementary, middle, and high school together (Center for Research on Education Outcomes, 2009a, 2009b; National Alliance for Public Charter Schools, 2009b; National Center for Education Statistics, 2005).

This study attempted to reveal performance and demographic data on charter high schools in Florida, in hopes to provide relevant information to policy makers, educational leaders, and parents, who were interested in the growth of Florida's choice options.

> Charter schools are associated with a higher probability of successful high school completion and an increased likelihood of attending a two-year or a four-year college…[this] suggest[s] that expanding school choice at the high school level may be a part of an effective policy to reduce high school dropout rates and to promote college attendance. (Booker et al., 2008, p. 19)

Table 17 displays the special focus of the charters selected for this study. Table 18 displays the membership information by district high school totals compared to the charter high school totals, in the state of Florida, for the 2006-07 school year.

Table 17
Special Focus of Charters Sampled in the Study

District Number	Charter Number	Charter Special Focus
1	Charter 1a	Serves over-age, under-credited, and at risk students ages 16-21
	Charter 1b	Course studies of Leadership and Life Academies
	Charter 1c	Individual focus for students in reading and mathematics competencies
	Charter 1d	Serves over-age, under-credited, and at risk students ages 16-21
2	Charter 2a	Career Academy offering a focus in automotive, commercial arts, telecommunications, medical academy, culinary, pre-engineering, web design, TV production and bio-technology
	Charter 2b	Career academies including auto body repair, automotive technology, cosmetology, culinary art, film/broadcasting, finance, graphic design, information technology, marine technology, medical sciences, motorcycle tech, residential construction, and veterinary assistant. Strong focus on community service.
	Charter 2c	Arts for motion picture, broadcasting, and TV production, along with college preparatory
	Charter 2d	Science and Technology, and dual enrollment
	Charter 2e	Computerized, individual course work with flexible hours and year round schedules
3	Charter 3a	Military environment, Army JROTC focus
4	Charter 4a	No special focus
	Charter 4b	Computerized, individual course work with flexible hours and year round schedules
	Charter 4c	Flexible schedule and school-to-work course options
5	Charter 5a	No special focus
6	Charter 6a	Visual and Performing Arts and Golf Program

District Number	Charter Number	Charter Special Focus
7	Charter 7a	Focus on the arts with an interdisciplinary emphasis on writing, graphics, dance, music, theater, and visual arts
	Charter 7b	No special focus
	Charter 7c	Performing arts
	Charter 7d	International Studies in Spanish, French, or Italian. Also offers an Advanced Placement International Diploma (APID)
	Charter 7e	Computerized, individual course work with flexible hours and year round schedules
	Charter 7f	Computerized, individual course work with flexible hours and year round schedules
	Charter 7g	No special focus
	Charter 7h	Performing Arts and Entertainment
	Charter 7i	No special focus
8	Charter 8a	Flexible schedule and school-to-work course options
9	Charter 9a	No Special Focus
10	Charter 10a	Flexible schedule and school-to-work course options
11	Charter 11a	No data
12	Charter 12a	No Special Focus
	Charter 12b	Automotive Program
	Charter 12c	No Special Focus
13	Charter 13a	At-risk, dropout prevention
14	Charter 14a	Environmental Science
15	Charter 15a	No data

Note. Florida Department of Education, Office of Independent Education and Parental Choice, n.d.a

Table 18
2006-07 Membership Information by District High School Totals and Charter High School Totals for the State of Florida

2006-07		Total Mbrshp	% White	% Black	% Hispanic	% Asian	% Indian	% Multi	% ESE	% FRL (ED)	% ELL	% Female	% Male
District Totals	District 1	49,436	ND	ND	ND	ND	ND	ND	13.6	ND	10.7	ND	ND
Charter Totals	Charter 1a	582	21.5	29.7	45.0	1.4	0.3	2.1	2.1	69.1	16.0	35.6	64.4
	Charter 1b	43	88.4	2.3	4.7	2.3	0.0	2.3	14.0	2.3	0.0	44.2	55.8
	Charter 1c	168	55.4	9.5	33.3	0.6	0.0	1.2	22.6	24.4	3.6	49.4	50.6
	Charter 1d	497	17.3	68.4	11.5	1.0	1.0	0.8	3.0	64.6	2.6	33.2	66.8
District Totals	District 2	50,391	ND	ND	ND	ND	ND	ND	11.9	ND	6.1	ND	ND
Charter Totals	Charter 2a	651	13.2	68.8	12.3	2.3	0.3	3.1	4.5	44.4	6.0	53.8	46.2
	Charter 2b	1232	27.4	35.1	34.0	0.3	0.5	2.8	19.2	41.4	5.5	49.3	50.7
	Charter 2c	673	58.8	11.4	21.5	1.2	0.9	6.1	5.6	21.4	2.4	57.8	42.2
	Charter 2d	112	33.9	11.6	45.5	1.8	0.0	7.1	13.4	32.1	9.8	52.7	47.3
	Charter 2e	224	14.7	57.1	25.4	0.9	0.0	1.8	12.5	23.7	17.9	39.7	60.3
District Totals	District 3	12,058	ND	ND	ND	ND	ND	ND	15.7	ND	2.9	ND	ND
Charter Totals	Charter 3a	489	86.9	1.4	8.0	1.0	0.6	2.0	20.2	17.2	0.6	32.3	67.7
District Totals	District 4	21,593	ND	ND	ND	ND	ND	ND	12.8	ND	8.9	ND	ND
Charter Totals	Charter 4a	633	49.3	11.4	34.0	1.7	0.0	3.6	4.9	4.6	17.1	50.7	49.3
	Charter 4b	147	32.7	47.6	13.6	2.0	0.7	3.4	21.1	24.5	8.2	53.1	46.9
	Charter 4c	315	27.3	46.0	23.2	1.0	0.3	2.2	20.3	26.0	10.5	54.3	45.7

2006-07		Total Mbrshp	% White	% Black	% Hispanic	% Asian	% Indian	% Multi	% ESE	% FRL (ED)	% ELL	% Female	% Male
District Totals	District5	15,017	ND	ND	ND	ND	ND	ND	12.9	ND	14.5	ND	ND
Charter Totals	Charter 5a	324	14.5	16.7	59.9	2.5	0.0	6.5	3.1	54.9	29.9	61.4	38.6
District Totals	District 6	5,331	ND	ND	ND	ND	ND	ND	11.5	ND	2.9	ND	ND
Charter Totals	Charter 6a	612	84.2	5.2	7.2	0.8	0.8	1.8	9.3	10.6	1.3	55.9	44.1
District Totals	District 7	105,695	ND	ND	ND	ND	ND	ND	12.3	ND	8.9	ND	ND
Charter Totals	Charter 7a	251	29.1	6.8	63.3	0.0	0.0	0.8	5.6	16.3	1.2	70.1	29.9
	Charter 7b	925	8.9	0.3	89.2	0.8	0.0	0.9	2.2	42.1	16.0	53.4	46.6
	Charter 7c	47	6.4	4.3	89.4	0.0	0.0	0.0	4.3	36.2	8.5	70.2	29.8
	Charter 7d	156	33.3	5.1	60.9	0.0	0.0	0.6	3.2	20.5	26.9	50.6	49.4
	Charter 7e	166	0.6	37.3	62.0	0.0	0.0	0.0	12.7	24.1	4.2	42.8	57.2
	Charter 7f	174	1.1	87.9	10.3	0.0	0.0	0.6	14.9	23.6	0.0	44.8	55.2
	Charter 7g	1354	4.3	2.0	93.3	0.4	0.0	0.0	3.2	71.2	11.3	53.8	46.2
	Charter 7h	140	5.0	0.7	93.6	0.0	0.0	0.7	0.7	69.3	2.1	59.3	40.7
	Charter 7i	44	9.1	0.0	88.6	0.0	0.0	2.3	0.0	25.0	0.0	56.8	43.3
District Totals	District 8	11,165	ND	ND	ND	ND	ND	ND	16.6	ND	4.2	ND	ND
Charter Totals	Charter 8a	127	26.8	52.8	19.7	0.0	0.0	0.8	19.7	38.6	3.9	55.1	44.9
District Totals	District 9	50,949	ND	ND	ND	ND	ND	ND	11.7	ND	5.5	ND	ND
Charter Totals	Charter 9a	139	58.3	18.7	18.7	2.9	0.7	0.7	95.0	17.3	5.8	32.4	67.6
District Totals	District 10	19,865	ND	ND	ND	ND	ND	ND	16.8	ND	1.3	ND	ND
Charter Totals	Charter 10a	140	63.6	32.1	0.7	1.4	0.0	2.1	18.6	31.4	0.0	47.1	52.9

2006-07		Total Mbrshp	% White	% Black	% Hispanic	% Asian	% Indian	% Multi	% ESE	% FRL (ED)	% ELL	% Female	% Male
District Totals	District 11	12,117	ND	ND	ND	ND	ND	ND	13.5	ND	0.7	ND	ND
Charter Totals	Charter 11a	110	34.5	60.9	3.6	0.0	0.9	0.0	10.0	67.3	0.0	40.0	60.0
District Totals	District 12	75,037	ND	ND	ND	ND	ND	ND	8.3	ND	7.6	ND	ND
Charter Totals	Charter 12a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Charter 12b	453	0.2	93.2	5.1	0.0	0.4	1.1	5.5	36.6	1.8	55.2	44.8
	Charter 12c	547	16.3	27.1	51.2	2.6	0.2	2.7	4.4	20.1	12.1	55.6	44.4
District Totals	District 13	11,104	ND	ND	ND	ND	ND	ND	12.5	ND	4.1	ND	ND
Charter Totals	Charter 13a	214	65.0	28.5	5.6	0.0	0.9	0.0	15.9	39.7	2.3	44.9	55.1
District Totals	District 14	4,781	ND	ND	ND	ND	ND	ND	13.1	ND	0.4	ND	ND
Charter Totals	Charter 14a	70	90.0	2.9	0.0	0.0	2.9	4.3	1.4	12.9	0.0	47.1	52.9
District Totals	District 15	24,367	ND	ND	ND	ND	ND	ND	15.5	ND	4.4	ND	ND
Charter Totals	Charter 15a	1,411	55.3	29.8	13.5	0.4	0.2	0.8	15.7	48.4	2.3	48.2	51.8

Note. Florida Department of Education, Education Information and Accountability Services, n.d.a

Summary

Charter schools were public schools that had autonomy from most of the local and state educational agency. In 1991, charter schools began as an option for families to choose, a type of school that would offer an innovative curriculum, and be free from the bureaucratic systems that entangled the traditional public school. Charter schools advanced out of the trend of public school choice, and grew from the political support geared towards school choice and equal access for all.

Many charter schools served students from minority populations, those who were English Language Learners (ELL), or students with disabilities (SWD). In addition to the diversity in demographics, many charter schools existed in states with weak laws, had insufficient funding, unstable or low enrollment, financial deficiencies, and sometimes low academic performance. Many reformers proposed charter schools as the answer to closing the achievement gap among students in racial and ethnic categories, along with socio-economic status, while opponents of charter schools often argue charters will take the best and brightest students from the traditional public schools (TPS), and leave schools already challenged by economics and demographics in a more overwhelming position.

"Charter schools continue to be hotly debated, but rigorous research on charter-school impacts has only recently begun to inform the debate" (Zimmer et al., 2009, p. 83). Research varied across region and population on charter schools, the charter school research was inconsistent, and therefore some studies were not drawing fair recommendations (Greene,

Forster, & Winters, 2003). Many charter studies explored data specific to one particular region and would only glean suggestions for that area (The Center for Education Reform, 2009d), therefore, regions where charter growth continues such as the states of California, Texas, and Florida, along with the city of Chicago, tended to be the focus of many studies (Booker et al., 2009; Booker et al., 2006; Booker et al., 2008; Buddin & Zimmer, 2005; CREDO, 2009; Zimmer & Buddin, 2006; Greene et al., 2003).

This chapter provided a review of literature which presented an insight into the charter movement, an overview of charter schools which included components of charter school laws, financing, and charter school accountability. Chapter 2 also presented a synthesis of research related to charter schools. Table 19 displays the list of studies analyzed in Chapter 2 (See Appendix C for a list of additional studies referenced throughout this literature review). Chapter 3 will offer an explanation of the methods and procedures used in this study.

Table 19
Charter Studies Analyzed

Study	State(s) or Region(s)	Process	Focus or Question(s)
Apples to Apples: An Evaluation of Charter Schools Serving General Student Populations (Greene, Forster, & Winters, 2003)	Combined data from 11 states: AZ, CA, FL, TX, MI, OH, CO, NC, MN, PA, and NJ	One year comparison of charter schools and neighboring public schools, using student level test score gain.	Do untargeted charter schools have a positive effect on test scores, as compared to neighboring public schools? Untargeted charters were defined as charters schools that do not service a specific population such as at risk or students with disabilities.
Charter Schools in Eight States: Effects on Achievement, Attainment Integration, and Competition (Zimmer et al., 2009)	Chicago, San Diego, Philadelphia, Denver, Milwaukee, and the states of OH, TX, and (for question 3 only) FL (p. xii). (See Appendix B for setting per region).	Non-experimental evaluation that used longitudinal, student-level achievement data.	What are the characteristics of students transferring to charter schools (p. xii)? What effect do charter schools have on test-score gains for students who transfer between TPSs and charter schools (p. xii)? What is the effect of attending a charter high school on the probability of graduating and entering college (p. xii)? What effect does the introduction of charter schools have on test scores of students in nearby TPSs (p. xii)?
Charter School Performance in Two Large Urban Districts (Zimmer & Buddin, 2006)	Elementary and secondary data from two large urban districts in CA	Student level data from 1997-98 through 2001-02, for reading and mathematics, along with demographics (grade, gender, ethnicity, and English proficiency (LEP)), measuring gains over time.	Are charter schools in urban districts closing the achievement gap for disadvantaged students? What are the comparisons of enrollment and demographics between charter schools and traditional public schools (TPSs)?
Achievement and Attainment in Chicago Charter Schools (Booker et al., 2009)	Chicago Public Schools	Student level data from grades 3-8, for the years 1997-98 through 2006-07, in reading and math, compared to the district averages. Data from high school and post secondary schools tracked from five cohorts of grade eight for the years 1998-99 through 2002-03.	Are charter schools attracting low or high-achieving students? Do charter school students perform differently than traditional public school (TPS) students? What are the Educational attainment outcomes for charter high schools? What effects do charter transfers have on the racial integration in the TPSs?

CHAPTER 3
METHODOLOGY

Introduction

The purpose of this chapter is to outline the methods and procedures used to determine (a) the change in developmental scale scores on the FCAT reading in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009, (b) the change in developmental scale scores on the FCAT mathematics in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009, (c) the relationship, if any, between student demographics (gender, poverty, primary home language, and ethnicity) and achievement in selected Florida school districts, for charter and non-charter public high schools from 2007-2009 and (d) the difference in professional demographics (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) among selected Florida school districts, for charter and non-charter public high schools from 2007-2009. The chapter is organized by presenting the purpose of the study, statement of the problem, and research questions, followed by an explanation of the procedures used for sampling, data collection, and data analysis.

Purpose of the Study

The purpose of this study was to determine if any relationship existed between the change in developmental scale scores (DSS) on the Florida Comprehensive Assessment Test (FCAT) for reading in selected Florida school districts, among charter and non-charter public high schools

grades 9 and 10. This study also investigated if any relationship existed between the change in DSS on the FCAT mathematics in selected Florida school districts, among charter and non-charter public high schools grades 9 and 10. Developmental scale scores ranged from 0-3000 and were used to track student progress over time for the reading and mathematics portion of the FCAT. These scores can be compared from one grade level to the next to indicate student growth or learning gains (Florida Department of Education, Bureau of K-12 Assessment, n.d.a).

> The Florida Comprehensive Assessment Test® (FCAT) is part of Florida's overall plan to increase student achievement by implementing higher standards. The FCAT, administered to students in Grades 3-11, consists of criterion-referenced tests (CRT) in mathematics, reading, science, and writing, which measure student progress toward meeting the Sunshine State Standards (SSS) benchmarks. (Florida Department of Education, Bureau of K-12 Assessments, n.d.c, ¶ 1)

This study also examined if any relationship existed between student achievement and student demographics (gender, economically disadvantaged, primary home language (ELL), and ethnicity) in selected Florida school districts, among charter and non-charter public high schools. Finally, this study explored if there was a difference in professional demographics (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) in selected Florida school districts, among charter and non-charter public high schools.

Statement of the Problem

Non-charter public school enrollment for grades 1 through 12, "decreased from 80 to 74 percent between 1993 and 2003. The decrease in assigned public school enrollment was nearly offset by an increase in choice public school enrollment from 11 to 15 percent between 1993 and 2003" (Tice et al., 2006, p. iii). Non-charter public school enrollment for grades 9 through 12

decreased from 81 to 76 percent between 1993 and 2003, while the choice public enrollment increased from 11 to 14 percent in those same grades; students were gravitating to charter schools. What was the relationship between charter and non-charter public school student performance? The problem to be studied was the growing percentage of public school students attending charter schools and the lack of research on the student achievement of high school students attending charter schools when compared to student achievement in non-charter schools.

Research Questions

The following were the research questions that guided this study:

1. What is the relationship, if any, between the change in developmental scale scores on the FCAT reading in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009?

   H_{01}: There is no difference in the change in developmental scale scores on the FCAT reading between charter and non-charter public high schools.

2. What is the relationship, if any, between the change in developmental scale scores on the FCAT mathematics in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009?

   H_{02}: There is no difference in the change in developmental scale scores on the FCAT mathematics between charter and non-charter public high schools.

3. What is the relationship, if any, between student demographics (gender, poverty, primary home language, and ethnicity) and achievement in selected Florida school districts, for

charter and non-charter public high schools from 2007-2009?

H_{03}: There is no relationship between student demographics and achievement for charter and non-charter public high schools.

4. What is the difference in faculty professional demographics (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) among selected Florida school districts, for charter and non-charter public high schools from 2007-2009?

   H_{04}: There is no difference in faculty professional demographics between charter and non-charter public high schools.

Population and Sample

This study focused on charter and non-charter public high schools across the state of Florida. At the time of this study, the state of Florida had 67 school districts all of which had public high schools, the total number of non-charter public high schools within those districts equaled 362 (Florida Consortium of Public Charter Schools, n.d.; Florida Department of Education, n.d.). Twenty-one of the 67 districts in the state of Florida had public charter high schools, the total number of public charter high schools within those districts equaled 70 (Florida Consortium of Public Charter Schools, 2008; Florida Department of Education, n.d.).

Fifteen districts, including 34 public charter high schools and 200 non-charter high schools were used in this study. All districts and schools that met the qualifying criteria for charter and non-charter public schools, as determined by the researcher, were used in this study.

Districts and schools were selected using three criteria: (a) the charter and non-charter public high schools had a minimum of three years of existence within the school years of 2006-2007, 2007-2008, and 2008-2009, (b) the charter and non-charter public high schools served students academically in at least grades 9 and 10, and (c) the charter and non-charter public high schools had FCAT data in both reading and mathematics for three consecutive years, from 2006-2007 to 2008-2009.

The selection process for screening the charter and non-charter public high schools used for this study was completed by reviewing the Florida Public Schools File: Master School ID (Florida Department of Education, Education Information and Accountability Services, n.d.b), to create a file, and log the number of charter and non-charter high schools per district, organized by grade levels served; only those charter and non-charter high schools that served either grades 9 through 12, grade 9 through 11, or grades 9 through 10 were recorded. The sample for both school types was then narrowed by using the FCAT Interactive Reports on the Florida Department of Education website to determine which schools were in existence during the 2006-2007, 2007-2008, and 2008-2009 school years, with FCAT scores in both reading and mathematics for all three years (Florida Department of Education, Bureau of K-12 Assessment, n.d.b). Schools that met the criteria for years but were missing either reading or mathematics scores for any of those three years were not used (except in Research Question 4). Schools that were labeled as alternative education or special education were not used in this study. Only districts with charter schools included in this study were used for sampling with the non-charter public high schools.

While 15 districts, including a total of 234 charter and non-charter high schools were used in this study, the number of charter and non-charter public high schools within a district was disproportionate. Consideration of the inequity among school types within a given district should be noted when reviewing the results of this research. The number of charter and non-charter public high schools within the districts selected for this study is displayed in Table 20. Since the number of school types varied widely within each district, and in some instances may have lead to easy identification of the school or district, the districts were randomly assigned numbers to protect confidentiality. First, each district selected for this study was assigned a number 1 through 15, then using the RAND function in Excel the numbers were randomly sorted. There is no correlation to the number used to code the district and the size of the district, or the number of charter and non-charter public high schools within the district.

Table 20
Number of Charters and Non-Charter Schools Among Florida Districts Sampled

District Numbers	Number of charter	Number of non-charter
1	4	16
2	5	22
3	1	5
4	3	13
5	1	7
6	1	2
7	9	39
8	1	6
9	1	25
10	1	8
11	1	7
12	3	29
13	1	7
14	1	3
15	1	11
Total	34	200

Inconsistencies in the data sources lead to differences in the samples. Schools may have been reported on the Master School ID file in one category, such as high school, when in fact the school served students below grade 9. Discrepancies were also discovered in the reporting of state-wide assessment and student or faculty demographics for the schools. Table 21 displays the number of charter and non-charter high schools used for each analysis.

Table 21
Number of Charter and Non-Charter High Schools Used for Each Analysis

Analysis	Subsection	Charters	Non-Charters
Split-plot ANOVA	Grade 9 Reading	N = 32	N = 198
	Grade 10 Reading	N = 32	N = 198
	Grade 9 Mathematics	N = 32	N = 198
	Grade 10 Mathematics	N = 32	N = 198
Multiple Regression	Grade 9 Reading	N = 32	N = 198
	Grade 10 Reading	N = 32	N = 198
	Grade 9 Mathematics	N = 32	N = 198
	Grade 10 Mathematics	N = 32	N = 198
t-tests	Advanced Degree	N = 30	N = 200
	Average Years Experience	N = 13	N = 200
	Percent Out of Field	N = 34	N = 200

Data Collection

Data on both charter and non-charter public high schools, from selected Florida districts, were collected for this study between January 2010 and June 2010. All data were stored on a secure, private computer in a spreadsheet in Excel. The data were later imported into a software package SPSS Student Version 16.0 for analysis.

The data on the developmental scale scores on the FCAT reading and mathematics, for both charter and non-charter public high schools grades 9 and 10, were collected from the Florida Department of Education website, using the Interactive FCAT District and School Reports (Florida Department of Education, Bureau of K-12 Assessment, n.d.b). The data on student demographics (gender, poverty, primary home language, and ethnicity) and the data on faculty professional demographics (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers), from both charter and non-charter

public high schools, were collected from the Florida Department of Education website, using the Florida School Indicators Report (Florida Department of Education, Education Information and Accountability Services, n.d.a).

The Interactive FCAT District and School Reports provided state, district, and school level reports with data on achievement levels, mean scale scores, developmental scale scores (DSS), and DSS change, for the FCAT reading, mathematics, writing, and science; scores may be selected from grades 3 through 11, as applicable to the subject. Developmental scale scores were vertical scale scores on the Florida Comprehensive Assessment Test (FCAT), used to determine the academic growth of students from year to year and to track student progress over time by linking two years of FCAT data. Florida incorporated the use of development scale scores in 2001, when the grade levels tested for reading and mathematics on the FCAT was increased from grades 4, 8, and 10 in reading and grades 5, 8, and 10 in mathematics, to all grades 3 through 10 for both subjects. Prior to the use of development scale scores, students were measured by an achievement level attained on the FCAT, but there was no way to determine the growth the student had experienced from year to year (Hoffman, Wise, & Thacker, 2001). Development scale scores ranged from 0-3000 and were used on the reading and mathematics portion of the FCAT. These scores can be compared from one grade level to the next to indicate student growth or learning gains (Florida Department of Education, Bureau of K-12 Assessment, n.d.a).

Between January and June 2010, scores were available for the school years 2000-2001 through 2008-2009, for each school in the state of Florida that participated in the testing (Florida

Department of Education, Bureau of K-12 Assessment, n.d.b). The Florida School Indicators Report provided several different data types by school, district, and state level, related student demographics, graduation and dropout rates, incidents of crime and violence, school information, and teacher and staff professional demographics (Florida Department of Education, Education Information and Accountability Services, n.d.a).

Data Analysis

Both descriptive and inferential statistics were used to analyze if any relationship existed between the change in developmental scale scores on FCAT reading in selected Florida school districts, for charter and non-charter public high schools. Both descriptive and inferential statistics were used to analyze if any relationship existed between the change in developmental scale score on the FCAT mathematics in selected Florida school districts, for charter and non-charter public high schools. Descriptive statistics were reported and compared to provide specific characteristics related to the different school types sampled in this study. Two separate split-plot analyses, a repeated measures ANOVA with one repeated measure and one independent factor, was conducted for each grade level (grade 9 and 10).

Both descriptive and inferential statistics were used to analyze if any relationship existed between school demographics (gender, poverty, primary home language, and ethnicity) in selected Florida school districts, for charter and non-charter public high schools and achievement. Descriptive statistics were reported and compared to provide specific demographic characteristics related to the different school types sampled in this study. A hierarchical multiple

regression was conducted to analyze the relationship, if any, between school demographics and achievement among the schools sampled in this study.

Both descriptive and inferential statistics were used to analyze the difference in faculty demographics (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) among selected Florida school districts, for charter and non-charter public high schools. Descriptive statistics were reported and compared to provide specific faculty demographic characteristics related to the different school types sampled in this study. T-tests were conducted to analyze the difference in faculty demographics between the charter and non-charter public high schools selected for this study.

For each analysis, outliers were examined and the sample size was adjusted. Details of any changes in sample size will be reported in Chapter 4.

Summary

Chapter 3 defined the methods and procedures, along with an explanation of the population and sample used to collect and analyze the data. The study focused on charter and non-charter, public high schools among 67 districts across the state of Florida. Charter and non-charter schools were selected for the study using three criteria (a) the school had a minimum of three years of existence within the school years of 2007, 2008, and 2009, (b) the school served students academically in at least grades 9 and 10, and (c) the school had FCAT data in both reading and mathematics for three consecutive years, from 2007 to 2009. Only districts with both

school types that met those criteria were used for this study. Chapter 4 will present an analysis of the data and the results of the research questions.

CHAPTER 4
ANALYSIS OF DATA

Introduction

The purpose of this study was to determine if any relationship existed between the change in developmental scale scores (DSS) on the Florida Comprehensive Assessment Test (FCAT) for reading and mathematics, in selected Florida school districts, among charter and non-charter public high schools grade 9 and 10 for years 2007-2009. Developmental scale scores ranged from 0-3000 and were used to track student progress over time for the reading and mathematics portions of the FCAT. These scores can be compared from one grade level to the next to indicate student growth or learning gains (Florida Department of Education, Bureau of K-12 Assessment, n.d.a). This study also examined if any relationship existed in student achievement based on student demographics (gender, economically disadvantaged, primary home language (ELL) and ethnicity) in selected Florida school districts, among charter and non-charter public high schools. Finally, this study explored if there was a difference in professional demographics of faculty (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) in selected Florida school districts, among charter and non-charter public high schools for years 2007-2009.

Chapter 4 will report the results of each of the four research questions that guided this study. Table 22 displays the research questions and data sources used for this study; Table 23 displays the number of outliers removed from the charter and non-charter samples for each analysis; Table 24 displays the significance of each analysis with and without the outliers.

Table 22
Data Sources for Research Questions

Research Questions	Data Sources
1. What is the relationship, if any, between the change in developmental scale scores on the FCAT reading in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009?	Florida Department of Education, Interactive FCAT District and School Reports
2. What is the relationship, if any, between the change in developmental scale scores on the FCAT mathematics in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009?	Florida Department of Education, Interactive FCAT District and School Reports
3. What is the relationship, if any, between student demographics (gender, poverty, primary home language, and ethnicity) and achievement in selected Florida school districts, for charter and non-charter public high schools from 2007-2009?	Florida Department of Education, Interactive FCAT District and School Reports and Florida School Indicators Report
4. What is the difference in faculty professional demographics (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) among selected Florida school districts, for charter and non-charter public high schools from 2007-2009?	Florida Department of Education Florida School Indicators Report

Table 23
Number of Outliers Removed from Charter and Non-Charter Samples for each Analysis

Research Question	Subsection	Analysis	Method of Examination	Number of Charters Before Removal of Outliers	Number of Non-Charters Before Remove of Outliers	Number of Charter Outliers Removed	Number of Non-Charter Outliers Removed
1	Grade 9	Split-Plot ANOVA	Average the repeated dependent variable, DSS, for 2007-2009 and examine boxplot for the variable split by the independent variable (charter and non-charter)	32	198	None	11 Total (4L, 7H)
	Grade 10			32	198	None	11 Total (4L, 7H)
2	Grade 9	Split-Plot ANOVA	Average the repeated dependent variable, DSS, for 2007-2009 and examine boxplot for the variable split by the independent variable (charter and non-charter)	32	198	None	7 Total (2L, 5H)
	Grade 10			32	198	None	10 Total (4L, 6H)
3	Grade 9 Reading	Multiple Regression	Run the model as planned and examine boxplot of the studentized residual.	32	198	13	8
	Grade 10 Reading			32	198	14	8
	Grade 9 Math			32	198	12	4
	Grade 10 Math			32	198	14	4
4	Adv Degree	*t*-test	Prior to running *t*-test, check for outliers via boxplot on the dependent variable when split into the two groups (charter and non-charter)	30	200	2 Total (2H)	1 Total (1H)
	Avg Yrs Exp			13	200	1 Total (1H)	1 Total (1H)
	Pct Out of Field			34	200	5 Total (5H)	2 Total (2H)

Table 24
Significance of each Analysis With and Without Outliers

Research Question	Subsection	Analysis	Result Without Outlier Removal	Result With Outlier Removal	Difference Without Outlier
1	Grade 9	Split-Plot ANOVA	Significant Within and Between; Non-Significant Interaction	Significant Within and Between; Non-Significant Interaction	No
	Grade 10		Significant Within and Between; Non-Significant Interaction	Significant Within and Between; Non-Significant Interaction	No*
2	Grade 9	Split-Plot ANOVA	Significant for Within, Between, and Interaction	Significant Within and Between; Non-Significant Interaction	Yes
	Grade 10		Significant for Within, Between, and Interaction	Significant for Within, Between, and Interaction	No
3	Grade 9 Reading	Multiple Regression	Significant models overall; all coefficients significant other than ELL; normality assumption violated	Significant models overall; all coefficients significant other than ELL	No*
	Grade 10 Reading		Significant models overall; all coefficients significant other than ELL; normality assumption violated	Significant models overall; all coefficients significant other than ELL	No*
	Grade 9 Math		Significant models overall; all coefficients significant other than ELL; normality assumption violated	Significant models overall; all coefficients significant other than ELL	No*
	Grade 10 Math		Significant models overall; all coefficients significant other than ELL; normality assumption violated	Significant models overall; all coefficients significant other than ELL	No*
4	Adv Degree	*t*-test	Significant difference; non-charter > charter	Significant difference; non-charter > charter	No
	Average Years Experience		Significant difference; non-charter > charter; normality assumption violated	Significant difference; non-charter > charter	No*
	Percent Out of Field		Significant difference; non-charter < charter; normality assumption violated	Non-significant difference; non-charter < charter	Yes

Note. *Results did not typically change but removing the outliers helped the assumptions not become violated.

Research Question 1

What is the relationship, if any, between the change in developmental scale scores on the FCAT reading in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009? H_{01}: There is no difference in the change in developmental scale scores on the FCAT reading between charter and non-charter public high schools.

Research Question 1 was addressed through two separate split-plot ANOVA analyses, one for each grade level (grade 9 and 10). This allowed the researcher to determine differences in DSS reading score (dependent variable) across time at the same schools (repeated measure) when considering the factor of school type, charter or non-charter (independent variable). The DSS reading scores used for this analysis were the school-wide average (per grade level and year selected). Recall, DSS scores are used to determine the academic growth of students from year to year and to track student progress over time, and DSS are grouped in ranges per grade level and subject (see Table 2 for the DSS ranges for both reading and mathematics). Therefore, a specific DSS score in grade 9 means something different relative to student achievement and learning gains from that same DSS score in grade 10.

It is important to note this research question was not comparing mean DSS scores within the same school between two different grades, but rather across time and between school types. Therefore, it was important to prepare two separate analyses (one per grade level), as it would not have been appropriate to measure the average DSS reading scores for grade 9 against the average DSS reading scores for grade 10, in a given school. The repeated measures design

allowed the researcher to determine if, in a given grade, there was a difference in the patterns of the DSS reading score over the three year span between charter and non-charter public high schools.

Grade 9 Reading Data Analysis

Three questions were used to set up the analysis for grade 9 reading data:

1. When holding charter school status constant, is there a significant difference in DSS scores over three years? (Within-subjects effect)
2. When holding year constant, is there a significant difference in DSS scores between charter and non-charter schools? (Between-subjects effect)
3. Is there an interaction effect in DSS scores when time and charter school status are taken into account? (Interaction effect)

Assumptions

All appropriate assumptions were checked. Outliers were removed on DSS scores using the 1.5 x IQR criterion and $N = 230$ was reduced to $N = 218$ (See Table 23 for the number of outliers removed from the charter and non-charter samples and Table 24 for the significance with and without the outliers). The assumption of normality was met as a requirement of the ANOVA. The assumption of sphericity states the variance of differences between scores or treatments is equal (Lomax, 2007). Sphericity could not be assumed, so the Greenhouse Geisser adjustment was used for testing within-subjects and interaction. Equality of variances was violated in all cases, however, the ANOVA is robust to violations of this assumption, and results were used with slight caution.

Results

There was a difference in patterns of the reading DSS over a three year span (2007-2009), between charter and non-charter public high schools. Tables 25 and 26 display the descriptive statistics for the grade 9 reading DSS, main effect and interaction effect, respectively. Table 27 displays the Repeated Measures ANOVA results for grade 9 reading DSS by charter status.

Table 25
Main Effect Descriptive Statistics for Grade 9 Reading DSS ANOVA (N = 218)

	Year			Charter Status	
Statistic	2006-07	2007-08	2008-09	No (n = 186)	Yes (n = 32)
M	1852.00	1883.56	1898.96	1909.28	1847.07
SE	9.44	9.66	9.29	7.08	17.07

Table 26
Interaction Effect Descriptive Statistics for Grade 9 Reading DSS ANOVA (N = 218)

	Non-Charter (n = 186)			Charter (n = 32)		
Statistic	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
M	1886.60	1912.72	1928.52	1817.41	1854.41	1869.41
SE	7.23	7.40	7.12	17.43	17.85	17.15

Table 27
Repeated Measures ANOVA for Grade 9 Reading DSS by Charter Status, 2007-2009

Source	*df*	*F*	η^2	*p*
	Between Subjects			
Charter Status (C)	1	11.33	.05	.001**
S within-group error	216	(27,979.60)		
	Within Subject			
Time (T)	1.85	92.49	.30	.001**
T x C	1.85	1.49	.01	.23
T x *S* within-group error	399.13	(732.29)		

Note. Values enclosed in parentheses represent mean square errors. *S* = subjects.

*$p < .05$. **$p < .01$.

Results indicated when holding charter school status constant, there was a significant difference in DSS scores over three years, $F(1.85, 399.13) = 92.49$, $p < .001$. Partial $\eta^2 = .30$ indicating a small practical effect; 30% of variability in DSS explained by time. As indicated by an LSD post-hoc test, each year's mean DSS increased significantly over the prior year.

Results indicated when holding year constant, there was a significant difference in DSS scores between charter and non-charter schools, $F(1, 216) = 11.33$, $p = .001$. Partial $\eta^2 = .05$ indicating a small practical effect; 5% of variability in DSS explained by charter status, no post-hoc test needed because there were only two groups. Charter schools, on average, had significantly lower DSS scores overall than non-charter schools.

Results indicated there was not a significant interaction effect in DSS scores, when time and charter school status were taken into account, $F(1.85, 399.13) = 1.49$, $p = .23$. Partial $\eta^2 = .007$ indicating a small practical effect; < 1% of variability in DSS explained by interaction between time and charter status. Charter and non-charter schools did not change in significantly different ways year over year.

Grade 10 Reading Data Analysis

Three questions were used to set up the analysis for grade 10 reading data:

1. When holding charter school status constant, is there a significant difference in DSS scores over three years? (Within-subjects effect)
2. When holding year constant, is there a significant difference in DSS scores between charter and non-charter schools? (Between-subjects effect)

3. Is there an interaction effect in DSS scores when time and charter school status are taken into account? (Interaction effect)

Assumptions

All appropriate assumptions were checked. Outliers were removed on DSS scores using the 1.5 x IQR criterion and $N = 230$ was reduced to $N = 219$ (See Table 23 for the number of outliers removed from the charter and non-charter samples and Table 24 for the significance with and without the outliers). The assumption of normality was met as a requirement of the ANOVA. The assumption of sphericity states the variance of differences between scores or treatments is equal (Lomax, 2007). Sphericity could be assumed. Equality of variances was violated in all cases, however, the ANOVA is robust to violations of this assumption, and results were used with slight caution.

Results

There was a difference in patterns of the reading DSS over a three year span (2007-2009), between charter and non-charter public high schools. Tables 28 and 29 display the descriptive statistics for the grade 10 reading DSS, main effect and interaction effect, respectively. Table 30 displays the Repeated Measures ANOVA results for grade 10 reading DSS by charter status.

Table 28
Main Effect Descriptive Statistics for Grade 10 Reading DSS ANOVA ($N = 219$)

	Year			Charter Status	
Statistic	2006-07	2007-08	2008-09	No ($n = 187$)	Yes ($n = 32$)
M	1858.69	1886.30	1890.05	1928.33	1828.37
SE	11.15	11.78	11.39	8.55	20.67

Table 29
Interaction Effect Descriptive Statistics for Grade 10 Reading DSS ANOVA (N = 219)

	Non-Charter (n = 187)			Charter (n = 32)		
Statistic	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
M	1904.48	1937.19	1943.32	1812.91	1835.41	1836.78
SE	8.52	9.01	8.71	20.60	21.78	21.05

Table 30
Repeated Measures ANOVA for Grade 10 Reading DSS by Charter Status, 2007-2009

Source	*df*	*F*	η^2	*p*
	Between Subjects			
Charter Status (C)	1	19.96	.08	.001**
S within-group error	217	(41,033.28)		
	Within Subjects			
Time (T)	2	33.84	.14	.001**
T x C	2	1.69	.01	.19
T x *S* within-group error	434	(947.09)		

Note. Values enclosed in parentheses represent mean square errors. *S* = subjects.
*p < .05. **p < .01.

Results indicated when holding charter school status constant, there was a significant difference in DSS scores over three years, $F(2, 434) = 33.84$, $p < .001$. Partial $\eta^2 = .14$ indicating a large practical effect; 14% of variability in DSS explained by time. As indicated by an LSD post-hoc test, 2008 represented a significant increase over 2007; however, 2009 did not represent a significant increase over 2008.

Results indicated when holding year constant, there was a significant difference in DSS scores between charter and non-charter schools, $F(1, 217) = 19.96$, $p = .001$. Partial $\eta^2 = .08$ indicating a medium practical effect; 8.4% of variability in DSS explained by charter status, no post-hoc test needed because there were only two groups. Charter schools, on average, had significantly lower DSS scores overall than non-charter schools.

Results indicated there was not a significant interaction effect in DSS scores, when time and charter school status were taken into account, $F(2, 434) = 1.69$, $p = .19$. Partial $\eta^2 = .008$ indicating a small practical effect; < 1% of variability in DSS explained by interaction between time and charter status. Charter and non-charter schools did not change in significantly different ways year over year.

Research Question 2

What is the relationship, if any, between the change in developmental scale scores on the FCAT mathematics in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009? H_{02}*:* There is no difference in the change in developmental scale scores on the FCAT mathematics between charter and non-charter public high schools.

This research question was addressed through two separate split-plot ANOVA analyses, one for each grade level (grade 9 and 10). This allowed the researcher to determine differences in DSS mathematics score (dependent variable) across time at the same schools (repeated measure) when considering the factor of school type, charter or non-charter (independent variable). The

DSS mathematics scores used for this analysis were the school-wide average (per grade level and year selected). Recall, DSS scores are used to determine the academic growth of students from year to year and to track student progress over time, and DSS are grouped in ranges per grade level and subject (see Table 2 for the DSS ranges for both reading and mathematics). Therefore, a specific DSS score in grade 9 means something different relative to student achievement and learning gains from that same DSS score in grade 10.

It is important to note Research Question 2 was not comparing mean DSS scores within the same school between two different grades, but rather across time and between school types. Therefore, it was important to prepare two separate analysis (one per grade level), as it would not have been appropriate to measure the average DSS mathematics scores for grade 9 against the average DSS mathematics scores for grade 10, in a given school. The repeated measures design allowed the researcher to determine if, in a given grade, there was a difference in the patterns of the DSS mathematics score over the three year span between charter and non-charter public high schools.

Grade 9 Mathematics Data Analysis

Three questions were used to set up the analysis for grade 9 mathematics data:

1. When holding charter school status constant, is there a significant difference in DSS scores over three years? (Within-subjects effect)
2. When holding year constant, is there a significant difference in DSS scores between charter and non-charter schools? (Between-subjects effect)

3. Is there an interaction effect in DSS scores when time and charter school status are taken into account? (Interaction effect)

Assumptions

All appropriate assumptions were checked. Outliers were removed on DSS scores using the 1.5 x IQR criterion and $N = 230$ was reduced to $N = 223$ (See Table 23 for the number of outliers removed from the charter and non-charter samples and Table 24 for the significance with and without the outliers). The assumption of normality was met as a requirement of the ANOVA. The assumption of sphericity states the variance of differences between scores or treatments is equal (Lomax, 2007). Sphericity could not be assumed, so the Greenhouse Geisser adjustment was used for testing within-subjects and interaction. Equality of variances was violated in all cases, however, the ANOVA is robust to violations of this assumption, and results were used with slight caution.

Results

There was a difference in patterns of the mathematics DSS over a three year span (2007-2009), between charter and non-charter public high schools. Tables 31 and 32 display the descriptive statistics for the grade 9 mathematics DSS, main effect and interaction effect, respectively. Table 33 displays the repeated measures ANOVA results for grade 9 mathematics DSS by charter status.

Table 31
Main Effect Descriptive Statistics for Grade 9 Mathematics DSS ANOVA (N = 223)

	Year			Charter Status	
Statistic	2006-07	2007-08	2008-09	No (n = 191)	Yes (n = 32)
M	1887.76	1912.68	1929.37	1937.55	1882.32
SE	6.68	6.27	5.94	4.66	11.39

Table 32
Interaction Effect Descriptive Statistics for Grade 9 Mathematics DSS ANOVA (N = 223)

	Non-Charter (n = 191)			Charter (n = 32)		
Statistic	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
M	1917.87	1940.79	1953.98	1857.66	1884.56	1904.75
SE	5.06	4.75	4.50	12.37	11.60	11.00

Table 33
Repeated Measures ANOVA for Grade 9 Mathematics DSS by Charter Status, 2007-2009

Source	*df*	*F*	η^2	*p*
	Between Subjects			
Charter Status (C)	1	20.13	.08	.001**
S within-group error	221	(12,457.28)		
	Within Subjects			
Time (T)	1.82	157.30	.42	.001**
T x C	1.82	2.77	.01	.07
T x *S* within-group error	401.74	(336.11)		

Note. Values enclosed in parentheses represent mean square errors. *S* = subjects.

*p < .05. **p < .01.

Results indicated when holding charter school status constant, there was a significant difference in DSS scores over three years, $F(1.82, 401.74) = 157.30$, $p < .001$. Partial $\eta^2 = .42$ indicating a large practical effect; 42% of variability in DSS explained by time. As indicated by an LSD post-hoc test, each year brought a significant increase in average DSS over the prior year.

Results indicated when holding year constant, there was a significant difference in DSS scores between charter and non-charter schools, $F(1, 221) = 20.13$, $p = .001$. Partial $\eta^2 = .08$ indicating a medium practical effect; 8.3% of variability in DSS explained by charter status, no post-hoc test needed because there were only two groups. Charter schools, on average, had significantly lower DSS scores overall than non-charter schools.

Results indicated there was not a significant interaction effect in DSS scores, when time and charter school status were taken into account, $F(1.82, 401.74) = 2.77$, $p = .07$. Partial $\eta^2 = .012$ indicating a small practical effect; 1.2% of variability in DSS explained by interaction between time and charter status. Charter and non-charter schools did not change in significantly different ways year over year.

Grade 10 Mathematics Data Analysis

Three questions were used to set up the analysis for grade 10 mathematics data:

1. When holding charter school status constant, is there a significant difference in DSS scores over three years? (Within-subjects effect)
2. When holding year constant, is there a significant difference in DSS scores between charter and non-charter schools? (Between-subjects effect)

3. Is there an interaction effect in DSS scores when time and charter school status are taken into account? (Interaction effect)

Assumptions

All appropriate assumptions were checked. Outliers were removed on DSS scores using the 1.5 x IQR criterion and $N = 230$ was reduced to $N = 220$ (See Table 23 for the number of outliers removed from the charter and non-charter samples and Table 24 for the significance with and without the outliers). The assumption of normality was met as a requirement of the ANOVA. The assumption of sphericity states the variance of differences between scores or treatments is equal (Lomax, 2007). Sphericity could be assumed. Equality of variances was violated in all cases, however, the ANOVA is robust to violations of this assumption, and results were used with slight caution.

Results

There was a difference in patterns of the mathematics DSS over a three year span (2007-2009), between charter and non-charter public high schools. Tables 34 and 35 display the descriptive statistics for the grade 10 mathematics DSS, main effect and interaction effect, respectively. Table 36 displays the repeated measures ANOVA results for grade 10 mathematics DSS by charter status.

Table 34
Main Effect Descriptive Statistics for Grade 10 Mathematics DSS ANOVA (N = 220)

	Year			Charter Status	
Statistic	2006-07	2007-08	2008-09	No (n = 188)	Yes (n = 32)
M	1946.68	1958.63	1963.36	1986.68	1925.77
SE	6.00	5.90	6.02	4.44	10.77

Table 35
Interaction Effect Descriptive Statistics for Grade 10 Mathematics DSS ANOVA (N = 220)

	Non-Charter (n = 188)			Charter (n = 32)		
Statistic	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
M	1973.45	1991.45	1995.13	1919.91	1925.81	1931.59
SE	4.58	4.50	4.59	11.09	10.91	11.13

Table 36
Repeated Measures ANOVA for Grade 10 Mathematics DSS by Charter Status, 2007-2009

Source	*df*	*F*	η^2	*p*
	Between Subjects			
Charter Status (C)	1	27.34	.11	.001**
S within-group error	218	(11,130.03)		
	Within Subjects			
Time (T)	1.90	27.71	.11	.001**
T x C	1.90	3.91	.02	.02*
T x *S* within-group error	413.93	(307.30)		

Note. Values enclosed in parentheses represent mean square errors. *S* = subjects.

*$p < .05$. **$p < .01$.

Results indicated when holding charter school status constant, there was a significant difference in DSS scores over three years, $F(1.90, 413.93) = 27.71$, $p < .001$. Partial $\eta^2 = .11$ indicating a medium practical effect; 11.3% of variability in DSS explained by time.

Results indicated when holding year constant, there was a significant difference in DSS scores between charter and non-charter schools, $F(1, 218) = 27.34$, $p < .001$. Partial $\eta^2 = .11$ indicating a medium practical effect; 11.1% of variability in DSS explained by charter status, no post-hoc test needed because there were only two groups. Charter schools, on average, had significantly lower DSS scores overall than non-charter schools.

Results indicated there was a significant interaction effect in DSS scores, when time and charter school status were taken into account, $F(1.90, 413.93) = 3.91$, $p = .02$. Partial $\eta^2 = .018$ indicating a small practical effect; < 1.8% of variability in DSS explained by interaction between time and charter status. A significant interaction supersedes significant main effects. Therefore, because of the significance and in lieu of post-hoc testing, the differences are displayed graphically. Figure 2 displays the estimated marginal means of DSS mathematic scores between the two school types over three years, and indicates non-charter schools (top line) experienced increases in overall DSS at a faster rate than the charter schools (bottom line).

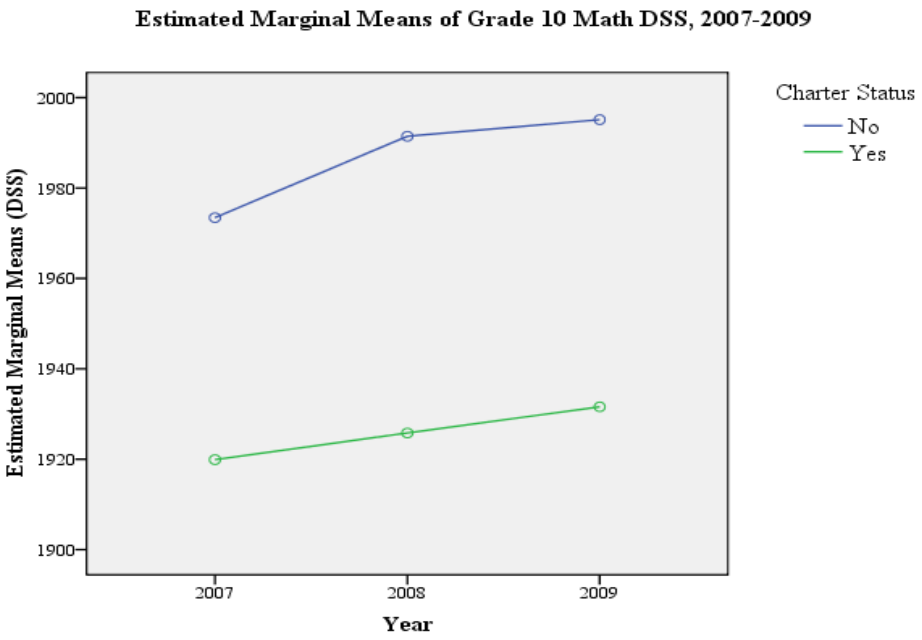


Figure 2 Estimated Marginal Means of Grade 10 Mathematics DSS by Charter Status, 2007-2009

Research Question 3

What is the relationship, if any, between student demographics (gender, poverty, primary home language, and ethnicity) and achievement in selected Florida school districts, for charter and non-charter public high schools from 2007-2009? H_{03}: There is no difference between student demographics and achievement for charter and non-charter public high schools.

To address Research Question 3, four separate hierarchical multiple linear regressions were conducted, one per grade level (grade 9 and 10) and one per subject (reading and mathematics). Each variable was formed by taking three-year averages and the independent variables were formed in blocks. In testing in blocks, the researcher could determine if charter

school status made a difference in achievement when controlling for various demographic factors that could potentially make a difference. The first block of independent variables were the three year averages of demographics: (a) gender, percentage of male students in a given school; (b) poverty (also referred to as economically disadvantaged), percentage of students receiving free or reduced lunch in a given school; (c) primary home language, percentage of students who are not proficient in English, in the given school; and (d) ethnicity, refers to a person's origin or descent, percent of the school population which falls into the racial category noted in a given school. The second block of independent variables was charter or non-charter school status, coded as a single binary variable. The dependent variables were the three year averages of school-wide DSS scores, for the given grade and subject.

Each model was tested with all block one factors (demographics) for significance and adjusted as necessary; block one predictors were labeled Male, ED, ELL, and Ethnicity. Subsequently, when demographics were accounted for, the block two factor (charter status) was added to the model and tested for any added significance; block two predictor was labeled charter. It should be noted that for the purpose of the analysis in this research question, the predictor of poverty was labeled as economically disadvantaged (ED).

Grade 9 Reading

Assumptions

All appropriate assumptions were checked. Multicollinearity was threatened by ethnicity and economically disadvantaged, as both had indications of excessive shared variance; a decision was made to remove race due to it having the highest variable inflation factor (VIF). Normality

was verified after outliers were removed using the 1.5 x IQR criterion and $N = 230$ was reduced to $N = 209$. A larger number of charter schools were removed for this analysis as outliers, but their removal was important to the normality of the regression. See Table 23 for the number of outliers removed from the charter and non-charter samples and Table 24 for the significance with and without the outliers. Linearity, Independence, and Homogeneity of Variance were not violated.

Results

Model one results indicated the combination of gender, ED, and ELL were good predictors of Grade 9 FCAT Reading DSS performance, $F(3, 205) = 211.90$, $p < .001$. There was a strong correlation ($r = .87$) in predicting the dependent variable, and approximately 76% ($R^2 = .75$) of the variance in DSS performance was accounted for by this model.

Model two results indicated Charter school status yielded a significant addition to this already strong prediction model. Regarding the change, $F(1, 204) = 61.59$, $p < .001$, an additional 5.7% of variance in DSS performance ($R^2 = .06$) was accounted for with this addition to the model.

Regression equation for the final model:

Grade 9 Reading DSS = 2603.77 – 10.44(% Male) – 4.21(% ED) – 0.41(% ELL) – 78.06(Charter Status)

Further results are displayed in Table 37.

Table 37
Summary of Hierarchical Regression Analysis for Variables Predicting Grade 9 FCAT Reading DSS (N = 209)

	Model 1			Model 2		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Constant	2615.11	46.09		2603.77	40.52	
% Male	-10.96	0.92	-.42**	-10.44	0.81	-.40**
% ED	-4.06	0.22	-.72**	-4.21	0.19	-.75**
% ELL	-0.19	0.53	-.01	-0.41	0.47	-.03
Charter				-78.06	9.95	-.24**
R^2		.76			.81	
F for Δ in R^2		211.90**			61.59**	

*p < .05. **p < .01.

Grade 10 Reading

Assumptions

All appropriate assumptions were checked. Multicollinearity was threatened by ethnicity and economically disadvantaged, as both had indications of excessive shared variance; a decision was made to remove race due to it having the highest variable inflation factor (VIF). Normality was verified after outliers were removed using the 1.5 x IQR criterion and N = 230 was reduced to N = 208. A larger number of charter schools were removed for this analysis as outliers, but

their removal was important to the normality of the regression. See Table 23 for the number of outliers removed from the charter and non-charter samples and Table 24 for the significance with and without the outliers. Linearity, Independence, and Homogeneity of Variance were not violated.

Results

Model one results indicated the combination of gender, ED, and ELL were good predictors of Grade 10 FCAT Reading DSS performance, $F(3, 204) = 157.80$, $p < .001$. There was a strong correlation ($r = .84$) in predicting the dependent variable, and approximately 70% ($R^2 = .70$) of the variance in DSS performance was accounted for by this model.

Model two results indicated charter school status yielded a significant addition to this already strong prediction model. Regarding the change, $F(1, 203) = 95.67$, $p < .001$, an additional 9.6% of variance in DSS performance ($R^2 = .10$) was accounted for with this addition to the model.

Regression equation for the final model:

Grade 10 Reading DSS = 2800.68 – 13.40(% Male) – 5.04(% ED) – 0.05(% ELL) – 124.38(Charter Status)

Further results are displayed in Table 38.

Table 38
Summary of Hierarchical Regression Analysis for Variables Predicting Grade 10 FCAT Reading DSS (N = 208)

	Model 1			Model 2		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Constant	2791.84	62.37		2800.68	51.56	
% Male	-13.72	1.25	-.43**	-13.40	1.03	-.42**
% ED	-4.70	0.29	-.69**	-5.04	0.25	-.75**
% ELL	0.04	0.72	.01	-0.05	0.59	-.01
Charter				-124.38	12.72	-.32
R^2		.70			.80	
F for Δ in R^2		157.80**			95.67**	

*p < .05. **p < .01.

Grade 9 Mathematics

Assumptions

All appropriate assumptions were checked. Multicollinearity was threatened by ethnicity and economically disadvantaged, as both had indications of excessive shared variance; a decision was made to remove race due to it having the highest variable inflation factor (VIF). Normality was verified after outliers were removed using the 1.5 x IQR criterion and N = 230 was reduced to N = 214. A larger number of charter schools were removed for this analysis as outliers, but

their removal was important to the normality of the regression. See Table 23 for the number of outliers removed from the charter and non-charter samples and Table 24 for the significance with and without the outliers. Linearity, Independence, and Homogeneity of Variance were not violated.

Results

Model one results indicated the combination of gender, ED, and ELL were good predictors of Grade 9 FCAT Mathematics DSS performance, $F(3, 210) = 136.77$, $p < .001$. There was a strong correlation ($r = .81$) in predicting the dependent variable, and approximately 66% ($R^2 = .66$) of the variance in DSS performance was accounted for by this model.

Model two results indicated charter school status yielded a significant addition to this already strong prediction model. Regarding the change, $F(1, 209) = 57.35$, $p < .001$, an additional 7.3% of variance in DSS performance ($R^2 = .73$) was accounted for with this addition to the model.

Regression equation for the final model:

Grade 9 Mathematics DSS = 2379.55 – 6.79(% Male) – 2.64(% ED) + 0.24(% ELL) – 56.79(Charter Status)

Further results are displayed in Table 39.

Table 39
Summary of Hierarchical Regression Analysis for Variables Predicting Grade 9 FCAT Mathematics DSS (N = 214)

	Model 1			Model 2		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Constant	2380.13	34.22		2379.55	30.39	
% Male	-6.99	0.68	-.42**	-6.79	0.61	-.40**
% ED	-2.54	0.16	-.69**	-2.64	0.15	-.72**
% ELL	0.28	0.39	.03	0.24	0.35	.03
Charter				-56.79	7.50	-.27**
R^2		.66			.73	
F for Δ in R^2		136.77**			57.35**	

*p < .05. **p < .01.

Grade 10 Mathematics

Assumptions

All appropriate assumptions were checked. Multicollinearity was threatened by ethnicity and economically disadvantaged, as both had indications of excessive shared variance; a decision was made to remove race due to it having the highest variable inflation factor (VIF). Normality was verified after outliers were removed using the 1.5 x IQR criterion and N = 230 was reduced to N = 212. A larger number of charter schools were removed for this analysis as outliers, but their removal was important to the normality of the regression. See Table 23 for the number of

outliers removed from the charter and non-charter samples and Table 24 for the significance with and without the outliers. Linearity, Independence, and Homogeneity of Variance were not violated.

Results

Model one results indicated the combination of gender, ED, and ELL were good predictors of Grade 10 FCAT Mathematics DSS performance, $F(3, 208) = 129.60$, $p < .001$. There was a strong correlation ($r = .81$) in predicting the dependent variable, and approximately 65% ($R^2 = .65$) of the variance in DSS performance was accounted for by this model.

Model two results indicated charter school status yielded a significant addition to this already strong prediction model. Regarding the change, $F(1, 207) = 60.09$, $p < .001$, an additional 7.3% of variance in DSS performance ($R^2 = .73$) was accounted for with this addition to the model.

Regression equation for the final model:

Grade 10 Mathematics DSS = 2381.05 – 5.97(% Male) – 2.50(% ED) + 0.27(% ELL) – 57.50(Charter Status)

Further results are displayed in Table 40.

Table 40
Summary of Hierarchical Regression Analysis for Variables Predicting Grade 10 FCAT Mathematics DSS (N = 212)

	Model 1			Model 2		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Constant	2384.44	32.94		2381.05	29.07	
% Male	-6.24	0.66	-.39**	-5.97	0.58	-.38**
% ED	-2.39	0.15	-.70**	-2.50	0.14	-.73**
% ELL	0.37	0.38	.05	0.27	0.33	.03
Charter				-57.50	7.42	-.28**
R^2		.66			.73	
F for Δ in R^2		129.60**			60.09**	

*p < .05. **p < .01.

Research Question 4

What is the difference in faculty professional demographics (advanced degrees, years of experience per school, percent of courses taught by out of field teachers) among selected Florida school districts, for charter and non-charter public high schools from 2007-2009? H_{04}: There is no difference in faculty professional demographics between charter and non-charter public high schools.

To address this research question, independent *t*-tests were conducted to determine the difference in each of the three demographic dependent variables by charter and non-charter status. The dependent variable demographics were calculated by taking a three-year average. Degree level was reduced to two categories, bachelor's degree or advanced degree (master's and higher).

Advanced Degree

Assumptions

All appropriate assumptions were checked. Outliers were removed using the 1.5 x IQR criterion and initial pool of $N = 230$ was reduced to $N = 227$ (See Table 23 for the number of outliers removed from the charter and non-charter samples analysis and Table 24 for the significance with and without the outliers). Normality was verified and equal variances were not assumed.

Results

Table 41 displays the descriptive statistics for advanced degree by charter status t-test.

Table 41
Descriptive Statistics for Advanced Degree by Charter Status t-Test ($N = 227$)

Group	*M*	*SD*
Non-Charter ($n = 199$)	39.24	8.04
Charter ($n = 28$)	19.97	16.84

Note. $t(28.76) = 5.96$, $p < .001$.

Results of testing were significant, $t(28.76) = 5.96$, $p < .001$. On average, non-charter schools have a significantly greater percentage of staff with advanced degrees ($M = 39.24$, $SD = 8.04$, $n = 199$) than at charter schools ($M = 19.97$, $SD = 16.83$, $n = 28$).

Years of Experience

Assumptions

All appropriate assumptions were checked. Outliers were removed using the 1.5 x IQR criterion and initial pool of $N = 213$ was reduced to $N = 211$ (See Table 23 for the number of outliers removed from the charter and non-charter samples and Table 24 for the significance with and without the outliers).

Results

Table 42 displays the descriptive statistics for years of experience by charter status t-test.

Table 42
Descriptive Statistics for Years of Experience by Charter Status t-Test ($N = 211$)

Group	*M*	*SD*
Non-Charter ($n = 199$)	12.26	2.64
Charter ($n = 12$)	5.14	2.99

Note. $t(209) = 8.99$, $p < .001$.

Results of testing were significant, $t(209) = 8.99$, $p < .001$. On average, non-charter schools have staff with significantly more years of experience ($M = 12.56$, $SD = 2.64$, $n = 199$) than at charter schools ($M = 5.14$, $SD = 2.99$, $n = 12$).

Out of Field

Assumptions

All appropriate assumptions were checked. Outliers were removed using the 1.5 x IQR criterion and initial pool of $N = 234$ was reduced to $N = 227$ (See Table 23 for the number of outliers removed from the charter and non-charter samples and Table 24 for the significance with and without the outliers).

Results

Table 43 displays the descriptive statistics for out of field status by charter status t-test.

Table 43
Descriptive Statistics for Out of Field Status by Charter Status t-Test ($N = 227$)

Group	*M*	*SD*
Non-Charter ($n = 198$)	6.24	4.02
Charter ($n = 29$)	8.69	7.67

Note. $t(30.29) = -1.68$, $p = .10$.

Results of testing were not significant, $t(30.29) = -1.68$, $p = .10$. On average, non-charter schools do not have a significantly lower percentage of staff teaching out-of-field ($M = 6.24$, $SD = 4.02$, $n = 198$) than at charter schools ($M = 8.69$, $SD = 7.67$, $n = 29$).

Summary

Chapter 4 presented an analysis of the data for each of the four research questions and included 19 tables and 1 figure for those findings. Two tables reviewing the outliers for the charter and non-charter schools were also included in this chapter. The data indicated that for both grades 9 and 10, and in both reading and mathematics, charter schools on average, had significantly lower DSS scores overall than non-charter schools. In grades 9 and 10 in reading, and grade 9 in mathematics, charter and non-charter schools did not change in significantly different ways, year over year, with respect to DSS scores. However, in grade 10 mathematics, non-charter schools experienced an increase in overall DSS at a faster rate than charters.

Regarding the prediction of student achievement by student demographics and school type, in both grades 9 and 10 and in reading and mathematics, male gender, ED, and ELL were good predictors of DSS performance, and charter school status yielded a significant addition to this already strong prediction. Finally, with respect to the difference of faculty demographics between the two school types, on average, non-charter schools have a significantly greater percentage of staff with advanced degrees and more years of experiences than charter schools. However, on average, non-charter schools do not have significantly lower percentages of staff teaching out of field than charter schools.

Chapter 5 will present a summary of the results from the four research questions, along with a discussion of the findings. Conclusions and recommendations for future research will also be offered in Chapter 5.

CHAPTER 5
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

Since the 1990s, school choice was a widely debated topic with strong arguments presented by both opponents and supporters. In 1996, Florida began its growth and support of charter schools. During that year, the state legislators enacted a law in support of public school choice options, "requiring each school district to develop an open enrollment choice plan" (Florida Department of Education, Office of Independent Education and Parental Choice, n.d.b, p. 11). Open enrollment encouraged the parental choice options for public schools, as "the legislature expressed the belief that public school choice will: cultivate constructive competition, serve as an impetus for academic improvement, [and] foster greater accountability within the school system" (p. 11).

Florida became a charter school movement leader with the "third highest number of charter schools in the nation" (Office of Independent Education and Parent Choice & The Bureau of Public School Options, K-12 Public Schools, n.d., p. 7).

> Since 1996, the number of charter schools in Florida has grown from 5 to 389 schools in 2008-2009. Charter school student enrollment for 2008-2009 was well over 100,000 students. Over 50 new charter schools have opened in the 2008-2009 school year. (Florida Department of Education, Office of Independent Educational and Parental Choice, n.d.a, ¶2)

Students were gravitating to charter schools. What was the relationship between charter and non-charter public school student performance? Were charter school students out-performing those in the traditional public schools? What was the difference between the two school types?

The problem to be studied was the growing percentage of public school students attending charter schools and the lack of research on the student achievement of high school students attending charter schools when compared to student achievement in non-charter schools. This study attempted to reveal performance and demographic data on charter high schools in Florida, in hopes of providing relevant information to policy makers, educational leaders, and parents, who were interested in the growth of Florida's choice options. In the age of accountability, detailed information on student achievement related to school trends was essential. National policy makers and educational leaders would be interested in the most current information on school choice relative to student achievement if indeed choice provides "an impetus for academic improvement, [and] foster greater accountability within the school system" (Florida Department of Education, Office of Independent Education and Parental Choice, n.d.b, p. 11).

This chapter presents a review of the purpose of the study and presents a summary of the findings for the four research questions used to guide this study. This chapter also includes conclusions and recommendations for policy, practice, and future research.

Summary and Discussion of Findings

The purpose of this study was to determine if any relationship existed between the change in developmental scale scores (DSS) on the Florida Comprehensive Assessment Test (FCAT) for reading and mathematics, in selected Florida school districts among charter and non-charter public high schools, for grades 9 and 10 for years 2007-2009. Developmental scale scores are in

ranges from 0-3000, grouped per grade level and subject (see table 2 for the DSS ranges for both reading and mathematics). Therefore, a specific DSS score in grade 9 means something different relative to student achievement and learning gains from that same DSS score in grade 10. DSS are used to track student progress over time for the reading and mathematics portions of the FCAT. (Florida Department of Education, Bureau of K-12 Assessment, n.d.a).

This study also examined if any relationship existed in student achievement based on student demographics (gender, economically disadvantaged, primary home language (ELL) and ethnicity) in selected Florida school districts, among charter and non-charter public high schools. Finally, this study explored if there was a difference in professional demographics of faculty (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) in selected Florida school districts, among charter and non-charter public high schools for years 2007-2009.

Research Question One

What is the relationship, if any, between the change in developmental scale scores on the FCAT reading in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009?

This research question was answered by using a sample of 218 public high schools in the state of Florida for the grade 9 analysis (non-charter n = 186, charter n = 32) and a sample of 219 public high schools for the grade 10 analysis (non-charter n = 187, charter n = 32). The DSS reading scores used for this analysis were the school-wide average (per grade level and year

selected). The researcher sought to determine if there was a difference in the patterns of the DSS reading scores over the three year span between charter and non-charter public high schools, in a given grade. No attempt was made to compare student specific results within and between school types or for a specific school.

The hypothesis for this question stated there was no difference in the change in developmental scale scores on the FCAT Reading between charter and non-charter public high schools. In both grades 9 and 10, reading DSS did differ significantly between the school types when holding year constant ($p < .001$); non-charter public schools had a higher mean DSS than charter high schools. Additionally, in both grades 9 and 10 reading DSS did differ significantly over the three year period when holding charter school status constant ($p = .001$); the mean DSS increased each year over the three year period. However, charter and non-charter schools did not change in significantly different ways, in both grades 9 and 10, year over year ($p = .23$). Table 44 depicts the mean scores by grade level for both school types over the three year period, and table 45 displays the mean scores of the interactions.

Table 44
Grade 9 and 10 FCAT Reading DSS Main Effect Statistics

Grade 9					
	Year			Charter Status	
Statistic	2006-07	2007-08	2008-09	No (n = 186)	Yes (n = 32)
M	1852.00	1883.56	1898.96	1909.28	1847.07
SE	9.44	9.66	9.29	7.08	17.07

Grade 10					
	Year			Charter Status	
Statistic	2006-07	2007-08	2008-09	No (n = 187)	Yes (n = 32)
M	1858.69	1886.30	1890.05	1928.33	1828.37
SE	11.15	11.78	11.39	8.55	20.67

Table 45
Grade 9 and 10 FCAT Reading DSS Interaction Effect Statistics

Grade 9						
	Non-Charter (n = 186)			Charter (n = 32)		
Statistic	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
M	1886.60	1912.72	1928.52	1817.41	1854.41	1869.41
SE	7.23	7.40	7.12	17.43	17.85	17.15

Grade 10						
	Non-Charter (n = 187)			Charter (n = 32)		
Statistic	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
M	1904.48	1937.19	1943.32	1812.91	1835.41	1836.78
SE	8.52	9.01	8.71	20.60	21.78	21.05

If charters are the selection for school choice, then charters should be expected to perform at a similar rate and level with respect to student achievement, in comparison to their traditional public school counterparts. It would be expected that in a given grade, the school-

wide average DSS would increase by year, as best practices would guide schools to reflect on prior year data and implement changes for improvement. As a result of this research, the generalization could be made that charter high schools do not outperform traditional public high schools in the state of Florida. However, it is important to note there stands considerable differences between the two school types (reflected in the delimitations).

Several variables were not accounted for in this study, which merits a reminder of some delimitations. The study was delimited to comparisons on student achievement of charter and non-charter public schools, and did not attempt to address or analyze the parental factors within those settings (parental involvement, satisfaction, perception, education, or yearly income), structural features between the school types (instructional time, curriculum, or grade levels housed), or organizational features (funding or principal background). Consideration for the variation of student demographics by school type warrants recognition, and is addressed in the analysis of question three.

Research Question Two

What is the relationship, if any, between the change in developmental scale scores on the FCAT mathematics in selected Florida school districts, for charter and non-charter public high schools grades 9 and 10 from 2007-2009?

This research question was answered by using a sample of 223 public high schools in the state of Florida for the grade 9 analysis (non-charter n = 191, charter n = 32) and a sample of 220 public high schools for the grade 10 analysis (non-charter n = 188, charter n = 32). The DSS

mathematics scores used for this analysis were the school-wide average (per grade level and year selected). The researcher sought to determine if there was a difference in the patterns of the DSS mathematics scores over the three year span between charter and non-charter public high schools, in a given grade. No attempt was made to compare student specific results within and between school types or for a specific school.

The hypothesis for this question stated there was no difference in the change in developmental scale scores on the FCAT mathematics between charter and non-charter public high schools As with reading, in both grades 9 and 10, FCAT Mathematics DSS did differ significantly between the school types when holding year constant ($p < .001$); non-charter public schools had a higher mean DSS than charter high schools. Additionally, in both grades 9 and 10 FCAT Mathematics DSS did differ significantly over the three year period when holding charter school status constant (grade 9 $p = .001$ and grade 10 $p < .001$); the mean DSS increased each year over the three year period. Furthermore, charter and non-charter schools did not change in significantly different ways in grade 9, year over year ($p = .07$). However, charter and non-charter schools did change in significantly different ways in grade 10, year over year; non-charters experienced an increase in overall DSS at a faster rate than charter schools. Table 46 depicts the mean scores by grade level for both school types and over the three year periods, and Table 47 displays the mean scores of the interactions.

Table 46
Grade 9 and 10 FCAT Mathematics DSS Main Effect Statistics

Grade 9					
	Year			Charter Status	
Statistic	2006-07	2007-08	2008-09	No (n = 191)	Yes (n = 32)
M	1887.76	1912.68	1929.37	1937.55	1882.32
SE	6.68	6.27	5.94	4.66	11.39

Grade 10					
	Year			Charter Status	
Statistic	2006-07	2007-08	2008-09	No (n = 188)	Yes (n = 32)
M	1946.68	1958.63	1963.36	1986.68	1925.77
SE	6.00	5.90	6.02	4.44	10.77

Table 47
Grade 9 and 10 FCAT Mathematics DSS Interaction Effect Statistics

Grade 9						
	Non-Charter (n = 191)			Charter (n = 32)		
Statistic	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
M	1917.87	1940.79	1953.98	1857.66	1884.56	1904.75
SE	5.06	4.75	4.50	12.37	11.60	11.00

Grade 10						
	Non-Charter (n = 188)			Charter (n = 32)		
Statistic	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
M	1973.45	1991.45	1995.13	1919.91	1925.81	1931.59
SE	4.58	4.50	4.59	11.09	10.91	11.13

If charters are the selection for school choice, then charters should be expected to perform at a similar rate and level, with respect to student achievement, in comparison to their

traditional public school counterparts. It would be expected, as with reading scores, that in a given grade, the school-wide average for mathematics DSS would increase by year, as best practices would guide schools to reflect on prior year data and implement changes for improvement. Based on this research, the generalization could be made that charter schools do not outperform traditional public schools, in the state of Florida. However, it is important to note again, there stands considerable differences between the two school types (reflected in the delimitations).

In mathematics only, charter schools did reflect an increase in overall DSS in grade 10, but at a slower pace than the non-charters, this area could be reviewed further in future studies. The same cautions with respect to the differences in schools and the delimitations of the study should be considered, as noted early. As in Research Question 1, the variation of student demographics by school type warrants recognition, and is addressed in the analysis of question three.

Research Question Three

What is the relationship, if any, between student demographics (gender, poverty, primary home language, and ethnicity) and achievement in selected Florida school districts, for charter and non-charter public high schools from 2007-2009?

This question was answered through four separate hierarchical multiple linear regressions, one per grade level (grade 9 and 10) and one per subject (reading and mathematics). Each variable was formed by taking three-year averages and the independent variables were

formed in blocks. In testing in blocks, the researcher could determine if charter school status made a difference in achievement when controlling for various demographic factors that could potentially make a difference. The first block of predictors were the three year averages of demographics labeled Male, ED, ELL, and Ethnicity; the block two predictor was labeled charter. It should be noted that for the purpose of the analysis in this research question, the predictor of poverty was labeled as economically disadvantaged (ED). The dependent variables were the three year averages of school-wide DSS scores, for the given grade and subject.

Each model was tested with all block one factors (demographics) for significance. Subsequently, when demographics were accounted for, the block two factor (charter status) was added to the model and tested for any added significance. The samples of charter and non-charter public high schools used for each regression were grade 9 reading (N = 209), grade 10 reading (N = 208), grade 9 mathematics (N = 214), and grade 10 mathematics (N = 212). Tables 48-51 display the summary of each hierarchical regression analysis, grade 9 and 10 reading, and grade 9 and 10 mathematics, respectively.

Table 48
Summary of Hierarchical Regression Analysis for Grade 9 FCAT Reading DSS (*N* = 209)

	Model 1			Model 2		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Constant	2615.11	46.09		2603.77	40.52	
% Male	-10.96	0.92	-.42**	-10.44	0.81	-.40**
% ED	-4.06	0.22	-.72**	-4.21	0.19	-.75**
% ELL	-0.19	0.53	-.01	-0.41	0.47	-.03
Charter				-78.06	9.95	-.24**
R^2		.76			.81	
F for Δ in R^2		211.90**			61.59**	

*p < .05. **p < .01.

Table 49
Summary of Hierarchical Regression Analysis for Grade 10 FCAT Reading DSS (*N* = 208)

	Model 1			Model 2		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Constant	2791.84	62.37		2800.68	51.56	
% Male	-13.72	1.25	-.43**	-13.40	1.03	-.42**
% ED	-4.70	0.29	-.69**	-5.04	0.25	-.75**
% ELL	0.04	0.72	.01	-0.05	0.59	-.01
Charter				-124.38	12.72	-.32
R^2		.70			.80	
F for Δ in R^2		157.80**			95.67**	

*p < .05. **p < .01.

Table 50
Summary of Hierarchical Regression Analysis for Grade 9 FCAT Mathematics DSS (N = 214)

	Model 1			Model 2		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Constant	2380.13	34.22		2379.55	30.39	
% Male	-6.99	0.68	-.42**	-6.79	0.61	-.40**
% ED	-2.54	0.16	-.69**	-2.64	0.15	-.72**
% ELL	0.28	0.39	.03	0.24	0.35	.03
Charter				-56.79	7.50	-.27**
R^2		.66			.73	
F for Δ in R^2		136.77**			57.35**	

*p < .05. **p < .01.

Table 51
Summary of Hierarchical Regression Analysis for Grade 10 FCAT Mathematics DSS (N = 212)

	Model 1			Model 2		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
Constant	2384.44	32.94		2381.05	29.07	
% Male	-6.24	0.66	-.39**	-5.97	0.58	-.38**
% ED	-2.39	0.15	-.70**	-2.50	0.14	-.73**
% ELL	0.37	0.38	.05	0.27	0.33	.03
Charter				-57.50	7.42	-.28**
R^2		.66			.73	
F for Δ in R^2		129.60**			60.09**	

*p < .05. **p < .01.

In all instances (both reading and mathematics and grades 9 and 10), economically disadvantaged was the most influential predictor of DSS, followed by male gender, then ELL. In all instances when model two was conducted, the changes in r-squared between the first and second model showed the additional variability brought forth by charter status; this provided evidence for charter status to be another strong predictor of DSS.

With respect to the predicted value and DSS points, in all instances, the regressions showed male gender, ED, and charter schools would all project a lower DSS by having a negative influence. However, ELL status had the smallest influence and was inconsistent among the different grades and subjects. The ELL predictor projected a positive effect on DSS in both

grade 9 and 10 for mathematics, with or without charter status included; a slight decrease in grade 9 reading, with or without charter status included; and a split for grade 10 reading. The positive influence in mathematics over reading for the ELL predictor may be attributed to the decreased need for English fluency with respect to mathematical calculations, but that cannot be determined by this analysis.

Based on the regression analyses for research question three, student performance was negatively influenced by student demographics (gender, poverty, and primary home language) and charter status. Furthermore, the regressions for research question three solidified what was determined in Research Questions 1 and 2, that based on school-wide average DSS, charter schools in the state of Florida are not out performing their traditional school counterparts; in fact, the DSS are lower.

Research Question Four

What is the difference in faculty professional demographics (advanced degrees, teachers' average years of teaching experience, percent of courses taught by out of field teachers) among selected Florida school districts, for charter and non-charter public high schools from 2007-2009?

The hypothesis for Research Question 4 was there is no difference in faculty professional demographics between charter and non-charter public high schools. This question was answered by using a sample of 227 public high schools in the state of Florida for advanced degree analysis (non-charter n = 199, charter n = 28), a sample of 211 public high schools for the years of

experience analysis (non-charter n = 199, charter n = 12), and a sample of 227 public high schools (non-charter n = 198, charter n = 29), for the out of field status analysis.

Regarding advanced degree determination, results indicated that non-charter schools have a greater percentage of teachers with advanced degrees (M = 39.24, SD = 8.04) than charter schools (M = 19.97, SD = 16.84). Speculations can only be made as to why the non-charters have such a higher percentage of teachers with advanced teachers, but it is plausible that salary plays a role. Many districts in the state of Florida offer salary increases in the non-charter public schools, for each advanced degree earned, which would create a challenge for charter schools that are already fighting funding restrictions. Another possibility is an advanced degree could be a requirement for a certain assignment or job title within the non-charter schools, criteria charters may not be able to support if the school is already confronted with organizational and structural challenges.

Non-charters also had on average, teachers with more years of experience (M = 12.26, SD = 2.64) than charter schools (M = 5.14, SD = 2.99). One possibility for the teachers in non-charter public school having more years of experience is the tenure status offered to teachers after a specified period of time. Other benefits such as retirement may also contribute. A number of other causes could be relevant, but are not determined at this level of testing. However, it should be noted charter schools do not sustain the same longevity as non-charter schools. The inconsistencies in structure and financial support that challenge the charter schools could be reflected in the length of time spent on the job for teachers at those schools. Furthermore, less

experienced teachers may find it easier to obtain employment in a charter school which may not have the strict certification requirements imposed on non-charters by NCLB.

In reference to out of field teaching status, non-charters (M = 6.24, SD = 4.02) did not have a significantly lower percentage of staff teaching out-of-field than charter schools (M = 8.69, SD = 7.67), although non-charters did have a lower average. The certification requirements imposed on non-charters could be one possibility for their lower average, as well as course offerings and the relationship to certification requirements for the course offerings in both school types. Specific causes for the differences, though not significant, cannot be determined through this analysis and merits recommendation for future studies.

Conclusions

The findings of this research suggest charter high schools in the state of Florida, are not keeping the pace with their traditional public high school counterparts. Over a three year period, charter high schools had significantly lower developmental scale scores on the FCAT, the state-wide achievement test, in both reading and mathematics, than non-charter public schools. The findings of this research also suggest that student demographics, with respect to male gender, economically disadvantaged, and ELL, combined with charter school status, negatively impact student achievement as measured by DSS.

If charter schools are the selection of school choice, then charters should be expected to perform at a similar rate and level in regards to student achievement, in comparison to their traditional school partners. This research does not support the concern voiced by some opposed

to charters, which state charter school schools will take the best and brightest students away from the traditional public schools (Booker et al., 2009).

The disparity noted in this study with regard to faculty demographics between charter and non-charter public schools, only touches on some considerable differences between the two school types. While charter schools are public schools they differ in policy, funding, and based on this research it should be recognized that their faculty demographics also differ. While the differences may in fact make the option of choice more appealing in some instances, more information is needed on the variations so parents and students can make informed choices.

Recommendations for Policy and Practice

Charter schools can take 3-5 years to build an academic structure that produces positive student achievement results, and they typically do not show student gains until well after their first year of operation. As the choice movement develops across the nation and as Florida charter schools continue to grow, policymakers and educational leaders should take a closer look at the inconsistencies in funding and laws for charter schools that prevent longevity. Charter schools are public schools and should be funded equally and supported by the same laws as their traditional school counterparts.

Therefore, policy makers should consider the length of time charters require to show adequate student improvement when reviewing state charter laws related to funding and caps that restrict growth. If charters are hindered from prospering, they cannot expect to be viable choice

option for student academic success, but the implications for a restructure of the public school system may very well lie in the strengthening of policies for school choice.

Questions that Linger

Reflecting on the data from this study, the following questions surface regarding charter and non-charter public schools, some of which are considerations for future research.

1. What is different about the two school types that affect the reading and mathematics performance?
2. What attracts the different groups of students to a school of choice?
3. What attracts parents to a school of choice?
4. Why are the faculty demographics different between the two school types?
5. Are there more teachers who obtained their teaching certificate through alternative methods in one school type over the other?
6. What is the difference between administrative certifications and background between the different school types?
7. What attracts the different groups of faculty to a school of choice?
8. How do the funding inequities between charters and non-charters affect achievement?

Recommendations for Future Research

One of the challenges encountered during this research was conflicting records found among the Florida Public Schools File: Master School ID, the FCAT Interactive Reports, and the Florida Department of Education Charter School Directory. Differences included inconsistent reporting of school levels (elementary, middle, or high school), grade levels offered, school names, charter status, and FCAT data. If researchers and practitioners are to account for the most current and accurate data on schools, then it is recommended the state databases and websites are meticulously monitored and maintained to avoid any future inconsistencies.

Limitations of this study open the path for future considerations related to school choice. The following points could be pursued for future research.

1. This study could be replicated with a larger sample size of charter schools. The vast majority of Florida's non-charter public high schools were included in this study, but several charter schools were removed because they did not meet the criteria of a minimum of three years with reporting data on both reading and mathematics for the state-wide achievement test. However, inconsistencies with charter laws and the difficulty charters experience with start up and maintenance funding present challenges to charter school longevity.
2. This study could be replicated with a longer period of time for data collection. However, as in the first recommendation, this could present challenges with finding charters that have been in existence for a longer period of time, without compromising the sample

size. Consideration may have to be given to expanding the replication to be inclusive of more than one state.

3. This study could be replicated to include Arizona, California, and Florida, the top three states leading charter school growth (The Center for Education Reform, 2009d).
4. Future research could be conducted as a comparative analysis of the top three states leading charter school growth (Arizona, California, and Florida), analyzing their charter laws and finance as it relates to charter schools, charter school openings and closures, and enrollment.
5. Future research could be conducted to expand this study on student specific scores in conjunction with the different school types (charter and non-charter public high schools), along with the demographic categories.
6. Future research could be conducted on the differences between charter and non-charter public schools, with regard to structural features such as instructional time, curriculum or grade levels offered. This could also be expanded to fully expose the most appropriate and successful grade level school configurations for future policy research, and the effect the mixture of grade levels offered has on student achievement.
7. Future research could be conducted on the differences between parent and student perceptions among charter and non-charter public schools. It would be interesting to determine the various perceptions towards general satisfaction, meeting emotional needs, meeting curriculum requirements, courses offered, family and community involvement,

safety of the environment, flexibility of the learning environment, and resources available to both students and parents. How do these perceptions impact student achievement?

8. Future research could be conducted on the differences between organizational features of charter and non-charter public schools, to include funding, principal background, and years of experience.

Summary

In 2010, school choice continued to be a topic of debate and the charter school movement continued to grow. This study revealed performance and demographic data on charter high schools in Florida, in hopes to provide relevant information to policy makers, educational leaders, and parents, who were interested in the growth of Florida's choice options.

Chapter 1 provided a conceptual framework related to choice options and the public school system. The development of the choice movement through the path of educational reform and public school accountability was also discussed. Chapter 2 included a review of literature connected to choice and competition among schools, which provided insight into the charter movement. Chapter 2 also included a discussion on the political focus related to school choice, and offered a review of charter laws and caps, the national growth of charter schools, and a synthesis of charter studies. Chapter 3 presented the methodology used for this study which included the purpose of the study, statement of the problem, the research questions used to guide this study, population and sample and data collection. Chapter 4 offered a summary of the analysis of data for each of the four research questions. Chapter 5 offered conclusions of the

research, recommendations for policy and practice, as well as suggestions for future research.

APPENDIX A
CHARTER SCHOOL LAW RANKINGS

APPENDIX A

Table A1:
2009 Charter School Law Rankings

State	Year Charter Began	2009 Law Grade	2008 Law Ranking	2009 Law Ranking	Charters as of February 2009
DC	1996	A	2	1	93
MN	1991	A	1	2	159
CA	1992	A	5	3	802
UT	1998	B	13	4	68
AZ	1994	B	7	5	510
NY	1998	B	12	6	118
MI	1993	B	10	7	250
IN	2001	B	6	8	50
CO	1993	B	9	9	151
FL	1996	B	8	10	382
MO	1998	B	3	11	39
PA	1997	B	11	12	133
DE	1995	B	4	13	21
NM	1993	B	25	14	70
WI	1993	C	21	15	221
GA	1993	C	18	16	83
NJ	1996	C	20	17	64
MA	1993	C	14	18	64
OH	1997	C	16	19	293
OR	1999	C	15	20	93
SC	1996	C	24	21	36
ID	1998	C	28	22	32
LA	1995	C	23	23	66
NV	1997	C	22	24	26
TX	1995	D	27	25	331
OK	1999	D	19	26	14
NC	1996	D	17	27	102
IL	1996	D	26	28	74
TN	2002	D	31	29	14
NH	1995	D	29	30	11
AR	1995	D	30	31	25
MD	2003	D	33	32	34
RI	1995	D	39	33	11
AK	1996	D	36	34	26
CT	1996	D	32	35	21
HI	1994	D	35	36	32
WY	1995	D	34	37	3
KS	1994	F	37	38	40
VA	1998	F	38	39	4
IA	2002	F	40	40	10
MS	1997	F	41	41	1

Note. Adapted from Charter School Ranking and Scorecard 2009 (The Center for Education Reform, 2009c)

APPENDIX B
ZIMMER ET AL., 2009 STUDY

APPENDIX B

Table B1:
Categories of data selections from Zimmer et al., 2009 study

Location	Year(s)	Grade(s)	Data Type
Chicago	1997-98 through 2000-01	Grades 1-8	Reading and mathematics test scores
	2001-02 through 2006-07	Grades 3-8	Reading and mathematics test scores
	1997-98 through 2001-02	Grade 8	Five cohorts of grade eight students and whether they attended a tradition public high school or a charter school
	Not specified	Grades 8-12	Iowa Tests of Basic Skills mathematics and reading scaled scores and information on student gender, race and ethnicity, bilingual status, free or reduced-price lunch status, and special-education status (pp. 95-96)
Denver	2001-02 through 2006-07	Not specified	Student-level race and ethnicity information, test-score data, and the school of attendance and grade enrolled for each school year (p. 96)
	2001-02 through 2006-07	Grades 3-10	Reading test scores
	2001-02 through 2003-04	Grades 5-10	Mathematics test scores
	2005-06	Grades 3-10	Mathematics test scores
Florida	1997-98 through 2000-01	Grade 8	Four cohorts of grade eight statewide achievement testing
	Not specified	K-12, community colleges, or four-year universities	Enrollment, demographic, and program-participation information for each student, as well as the students' reading and math achievement test scores (p. 97)
Milwaukee	2000-01 through 2006-07	Grades 3-10	Gain scores for grades 4-10 on student-level reading and mathematics test scores
	1997-98 through 2006-07	Not specified	Demographic data

Location	Year(s)	Grade(s)	Data Type
Ohio	2004-05	Grades 3,7, and 8	Mathematics test scores
	2004-05	Grades 3,4,5, and 8	Reading test scores
	2005-06 through 2007-08	Grades 3-8	Reading test scores
	2003-04 through 2007-08	Not specified	Race information, school of attendance and grade enrolled
Philadelphia	2000-01 through 2006-07	Varied based on test and school year	Test score data varied among three different achievement tests in reading and mathematics: 1. Pennsylvania System of School Assessment (PSSA) tests for math and reading for grades 5, 8, and 11 annually beginning in spring 2001 and grades 3 through 8 and 11 in spring 2006 and 2007 (p.101). 2. Stanford Achievement Test Series, Ninth Edition (Stanford 9) tests in math and reading in grades 3, 4, 7, and 10 in spring 2001 and spring 2002 (p.101). 3. TerraNova tests in math in grades 2 through 10 annually in the springs of 2003 through 2005 and in grades 2, 9, and 10 in spring 2006 [and] TerraNova tests in reading in grades 1 through 10 annually in the springs of 2003 through 2005 and in grades 1, 2, 9, and 10 in spring 2006 (p. 101).
San Diego	1997-98 through 2006-07	Grades 2-11	Student-level race and ethnicity information, test-score data, an indicator of whether the student attends a charter school, and the school of attendance and grade enrolled for each school year (p. 103)
Texas	1995-96 through 2003-04	Grades 3-8	Student-level race information, test-score data, and school of attendance and grade enrolled (p. 103). Test score data was for reading and mathematics

Note. Zimmer et al., 2009

APPENDIX C
LIST OF CHARTER STUDIES

APPENDIX C

Table C1:
List of additional charter studies referenced throughout the literature review

Study	State(s) or Region(s)	Process	Focus or Question(s)
Multiple Choice: Charter School Performance in 16 States (CREDO, 2009)	AZ, AR, CA, CO, DC, FL, GA, IL, LA, MA, MN, MO, NC, NM, OH, TX	Compared student level data between charters and TPSs by creating virtual matches. Virtual matching variables included grade level, race/ethnicity, gender, English proficiency, lunch status, special education status, and prior test scores and were pooled from data collected on the TPS schools from which the charter students transferred.	What is the overall impact of charter schools? Do the impacts of charter schools differ by school type? What are the impacts of charter schools for different student subgroups? Does longer enrollment in charter schools affect student learning? What are the impacts of charter school policies on student results?
Charter School Achievement: What we know (National Alliance for Public Charter Schools, 2009)	Nationwide, 140 charter studies	A review of empirical research including 140 charter studies that compared charter school achievement with traditional public schools was conducted. Studies were sorted by state and grouped into three categories: (a) panel studies, (b) cohort change studies, and (c) snapshot studies.	The focus was to provide an extensive review of available research on charter schools and expose gaps where more research is needed. The study also sought to determine the impact charters have on students across the nation. Lists were provided with details of studies used with years of data collection, state(s) included, research design, and key findings by subject area and grade level.

Study	State(s) or Region(s)	Process	Focus or Question(s)
America's Charter Schools: Results from the NAEP 2003 Pilot Study (National Center for Education Statistics, 2005)	Nationwide, 150 charter schools	The National Center for Education Statistics reported on the National Assessment of Educational Progress (NAEP) 2003 Charter School Pilot, which assessed 4th grade students in reading and mathematics who took the NAEP in order to gauge student progress.	The focus was to report results of the NAEP Charter Pilot by demographics, provide a comparison of charter and other public schools, and examine other pertinent information on charters such as their practice, structure, and governance.
Public charter school dashboard 2009 (National Alliance for Public Charter Schools, 2009)	Nationwide, included data on all states and DC with charters	Statistical indicators for charters schools were used to determine the growth and quality of public charter schools. Data were provided on all states with charters in the US.	National reporting of statistics for charter schools by student population, growth of charters, and by charter school characteristics, performance and accountability, as well as policy environment was provided. State by state comparisons were also given for the same factors, in addition to individual state dashboards.
Going Beyond Test Scores (Booker, Sass, Gill, & Zimmer, 2008)	FL and Chicago, IL	Used student level data from 8th grade cohorts to determine differences in student ability and tracked students through high school and college attendance. In Florida, data covered four cohorts of students who attended 8th grade for the years 1997-98 through 2000-01. In Chicago, data covered five cohorts of students who attended 8th grade for the years 1997-98 through 2001-02.	The focus was to analyze the relationship between charter high school attendance and educational attainment. Transition patterns were analyzed from students attending 8th grader charters and moving into high schools. High school graduation was investigated, location of charter high schools to traditional public schools, as well as college enrollment from charter high schools.

Study	State(s) or Region(s)	Process	Focus or Question(s)
Charter School Performance in Florida (CREDO, 2009)	FL (longitudinal study)	Used student level data on 216,188 charter school students, from grades 3-12 for the years 2000-01 through 2007-08, for as many years as data was available. A virtual composite was created based on the traditional school competitor, for the same number of students.	The focus was to determine if charter school students were outperforming their traditional school counterpart, as determined by academic growth on the state achievement test. Charter school impact on years of enrollment, by race/ethnicity, students in poverty, special education, ELL, and grades repeated was also studied.
The impact of charter school attendance on student performance (Booker, Gilpatric, Gronberg, & Jansen, 2006)	TX	Used student level data from grades 3-8 and grade 10, from 1995-2002. Five cohorts of students from the fourth grade were tracked.	The focus was to track student performance over time in charter schools, and to determine the overall impact of charter school attendance. The mobility effect of students who transition back to the traditional public school setting was also investigated.
Student Achievement in Charter Schools: A complex picture (Buddin & Zimmer, 2005)	CA	Used approximately 362,000 individual student records on Stanford 9 performance and student demographics, from 1998-2002. Data were divided by elementary (grades 2-5) and secondary (grades 6-11).	The focus was to examine the differences in student performance among the varying charter school models. Charter categories used for this study were (a) conversion charters, (b) start ups, (c) classroom based, and (d) non-classroom based.

APPENDIX D
UCF IRB DOCUMENTATION

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

NOT HUMAN RESEARCH DETERMINATION

From : **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To : **Shannon R. Sommella**

Date : **December 15, 2009**

Dear Researcher:

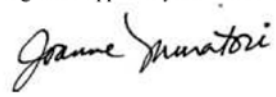
On 12/15/2009, the IRB determined that the following proposed activity is not human research as defined by DHHS regulations at 45 CFR 46 or FDA regulations at 21 CFR 50/56:

Type of Review:	Not Human Research Determination
Project Title:	A Comparative Analysis of Student Achievement in Florida Charter and Non-Charter Public High Schools 2007-2009
Investigator:	Shannon R. Sommella
IRB ID:	SBE-09-06582
Funding Agency:	
Grant Title:	
Research ID:	N/A

University of Central Florida IRB review and approval is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are to be made and there are questions about whether these activities are research involving human subjects, please contact the IRB office to discuss the proposed changes.

On behalf of the IRB Chair, Joseph Bielitzki, DVM, this letter is signed by:

Signature applied by Joanne Muratori on 12/15/2009 11:15:48 AM EST



IRB Coordinator

LIST OF REFERENCES

Allen, J., Chavous, K. P., Engler, J. M., Whitmire, R., & Williams, J. (2009). *Mandate for change: A bold agenda for the incoming government*. Washington, DC: The Center for Education Reform. Retrieved from http://mandate.edreform.com/

Associated Press. (March 10, 2009). *Presidential speech report*. Retrieved from http://www.msnbc.msn.com/id/29612995/

Booker, K., Gill, B., Zimmer, R., & Sass, T.R. (2009). *Achievement and attainment in Chicago charter schools.* (RAND Corporation Technical Report TR-585-1). Santa Monica, CA: RAND. Retrieved from http://www.rand.org/pubs/technical_reports/TR585-1/

Booker, K., Gilpatric, S. M., Gronberg, T., & Jansen, D. (2006). The impact of charter school attendance on student performance. *Journal of Public Economics 91*, 849-876. doi:10.1016/j.jpubeco.2006.09.011

Booker, K., Sass, T.R., Gill, B., & Zimmer, R. (2008). *Going beyond test scores: Evaluating charter school impact on educational attainment in Chicago and Florida.* (RAND Corporation WR-610-BMG). Santa Monica, CA: RAND. Retrieved from http://www.rand.org/pubs/working_papers/WR610/

Boston, R. (2008, May). Religious school vouchers: An obstacle to education reform. *The Humanist, 68*, 34-35. Retrieved June 28, 2008, from Academic Search Premier database.

Bracey, G. W. (2003). *What you should know about the war against America's public schools*. Allyn and Bacon: Boston, MA.

Brown et al. v. Board of Education of Topeka et al., No. 1, 347 U.S. 483, 74 S. Ct. 686, 98 L. Ed. 873, 1954 U.S. LEXIS 2094, 53 Ohio Op. 326, 38 A.L.R.2d 1180. (1954). Retrieved from LexisNexi Academic.

Buddin, R., & Zimmer, R. (2005). Student achievement in charter schools: A complex picture. *Journal of Policy Analysis and Management, 24*(2), 351-371. doi: 10.1002/pam.20093

Bureau of Student Achievement through Language Acquisition. (n.d.). Retrieved July 2009, from About Us: http://www.fldoe.org/aala/

Center for Research on Education Outcomes (CREDO). (2009a) *Charter School Performance in Florida*. Stanford, CA: Stanford University. Downloaded from http://credo.standord.edu

Center for Research on Education Outcomes (CREDO). (2009b). *Multiple choice: Charter School Performance in 16 States*. Stanford, CA: Stanford University. Downloaded from http://credo.standord.edu

Clark, C. (1996, July 26). Attack on public schools. *CQ Researcher, 6*, 649-672. Retrieved June 28, 2008, from CQ Researcher Online.

Clark, C. (2002, December 20). Charter schools. *CQ Researcher, 12*, 1033-1056. Retrieved June 28, 2008, from CQ Researcher Online.

Cooper, B., & Randall, E. (2008). Fear and privatization. *Educational Policy, 22*(1), 204-227. doi: 10.1177/0895904807311303

Crew, R., & Anderson, M. (2003). Accountability and performance in charter schools in Florida: A theory-based evaluation. *American Journal of Evaluation, 24*(2), 189-.212. doi: 10.1016/S1098-2140(03)00030-4

DeBray-Pelot, E., Lubienski, C., & Scott, J. (2007). The institutional landscape of interest group politics and school choice. *Peabody Journal of Education 82*(2-3), 204-230. doi: 10.1080/01619560701312947

Duncan, A. "National Charter Schools Conference: Leading Change in Public Education." National Alliance for Public Charter Schools. Washington. 22 June 2009. Retrieved from http://www.publiccharters.org/ArneDuncanKeynote

Florida Consortium of Public Charter Schools. (n.d.). *Find a Florida charter school*. Retrieved from http://www.floridacharters.org/public/findafloridacharterschool.asp

Florida Department of Education. (n.d.). *School accountability reports*. Retrieved from http://schoolgrades.fldoe.org/default.asp

Florida Department of Education. (2008). FCAT Scores and Reports. *FCAT achievement level definitions/table* [PDF]. Retrieved from http://fcat.fldoe.org/fcatscor.asp

Florida Department of Education, Bureau of K-12 Assessment. (n.d.a). *About the FCAT* [Web Brochure]. Retrieved from Information for the general public. http://fcat.fldoe.org/fcatpub1.asp

Florida Department of Education, Bureau of K-12 Assessments. (n.d.b). *Interactive FCAT district and school reports.* Retrieved from FCAT scores and reports. http://fcat.fldoe.org/fcat/

Florida Department of Education, Bureau of K-12 Assessments. (n.d.c). *The Florida Comprehensive Assessment Test*®. Retrieved from http://fcat.fldoe.org/fcat/

Florida Department of Education, Bureau of Research and Evaluation; Division of Accountability, Research, and Measurement. (2010). *2010 Guide to calculating school grades: Technical assistance paper*. Retrieved from http://schoolgrades.fldoe.org/default.asp?report=AYP

Florida Department of Education, Education Information and Accountability Services. (n.d.a). *Florida school indicators report*. Retrieved from http://www.fldoe.org/eias/eiaspubs/fsir.asp

Florida Department of Education, Education Information and Accountability Services. (n.d.b). *Florida public schools file: Master school ID file*. Retrieved from http://www.fldoe.org/eias/sitemap.asp

Florida Department of Education, Education Information and Accountability Services. (2010). Master school ID technical assistance paper (No. FY 2010-01). Retrieved from http://doeweb-prd.doe.state.fl.us/EDS/MasterSchoolID/index.cfm

Florida Department of Education, Office of Independent Education and Parental Choice. (n.d.a). *About Florida's charter schools*. Retrieved from Charter schools. http://www.floridaschoolchoice.org/Information/Charter_Schools/

Florida Department of Education, Office of Independent Education and Parent Choice. (n.d.b). *School choice options: Florida continues to lead the nation* [PDF]. Retrieved from School Choice Options. https://www.floridaschoolchoice.org/district/files/School_Choice_Options.pdf

Futrell, M. (n.d.). Anticipating success: Removing the barriers to educational equity and equality. *Harvard Journal of African American Public Policy.* Retrieved March 22, 2008.

Greene, J. P., Forster, G., & Winter, M. (2003). Apples to apples: An evaluation of charter schools serving general student populations. (Center for Civic Innovation Working Paper No. 1). New York, NY: Manhattan Institute for Policy Research. Retrieved from http://www.manhattan-institute.org/tools/pubs.php?pubtypes=30

Hoffman, R.G., Wise, L.L., & Thacker, A.A. (2001). *Florida Comprehensive Assessment Test: Technical report on vertical scaling for reading and mathematics*. San Antonio: Harcourt Educational Measurement. Retrieved from http://fcat.fldoe.org/fcatpub5.asp

K-20 Education Code: Public K-12 Education, Specialized Instruction for Certain Public K-12 Students, F.S. Ann. § 1003.56(2b) (2009).

Lomax, R. G. (2007). *An introduction to statistical concepts* (2nd ed.). Mahwah, NJ: Erlbaum.

Marzano, R. (2006). *Classroom assessment & grading that work.* Alexandria, VA: Association for Supervision and Curriculum Development.

Masci, D. (1997, July 18). School choice debate. *CQ Researcher, 7*, 625-648. Retrieved June 28, 2008, from CQ Researcher Online.

McArthur, E., Colopy, K.W., & Schlaline, B. (1995, July 18). *Use of school choice*. (Issue Brief No. 95-742R). Retrieved from National Center for Education Statistics: http://nces.ed.gov/

Murray, K., & Murray, B. (2007). *School law for the Florida educator* (3rd ed.). Merritt Island, FL: Intra Coastal Publishing.

National Alliance for Public Charter Schools. (2008a). About Charter Schools. Retrieved from http://www.publiccharters.org/aboutschools

National Alliance for Public Charter Schools. (2008b). About Us. Retrieved from http://www.publiccharters.org/

National Alliance for Public Charter Schools. (2009a). *Charter school achievement: What we know, 5th edition*. Retrieved July, 2009 from http://www.publiccharters.org/publications

National Alliance for Public Charter Schools. (2009b). *Public charter school dashboard 2009*. Retrieved from http://www.publiccharters.org

National Center for Education Statistics. (n.d.). About us. http://nces.ed.gov/

National Center for Education Statistics. (2005). *America's charter schools: Results from the NAEP 2003 pilot study* (NCES 2005-456). Downloaded from http://nces.ed.gov/nationsreportcard/studies/charter/

National Education Association (2009). *Overhaul the elementary and secondary education act (ESEA)*. Retrieved from http://www.nea.org/home/29896.htm

Plessy v. Ferguson, No. 210, 163 U.S. 537, 16 S. Ct. 1138, 41 L. Ed. 256, 1896 U.S. LEXIS 3390. (1896). Retrieved from LexisNexis Academic.

Rebore, R. (1997). *Unitary Status: what does it mean in the saint louis desegregation case?* Retrieved March 22, 2008, from (ED 437479): http://www.eric.ed.gov/

RAND Corporation. (2009). About RAND. Retrieved from http://www.rand.org/

Spellings, M. (2008). Web Introduction for *A nation accountable: 25 years after a nation at risk.* Retrieved from http://www.ed.gov/rschstat/research/pubs/risk25.html

The Center for Education Reform. (2009a). *Accountability lies at the heart of charter school success.* Retrieved from CER Press release http://www.edreform.com/Press_Box/Press_Releases/?Accountability_Lies_at_the_Heart_of_Charter_School_Success&year=2009

The Center for Education Reform. (2009b). *CER mission*. Retrieved from http://www.edreform.com/CER_Mission/

The Center for Education Reform. (2009c). *Race to the top for charter schools: Which state have what it takes to win*. Retrieved from Ranking and Scorecard 2009 http://www.edreform.com/Issues/Charter_Connection/?Race_to_the_Top_for_Charter_Schools

The Center for Education Reform. (2009d). *The accountability report 2009: Charter schools*. Retrieved from http://www.edreform.com/accountability/

The Center for Education Reform. (2009e). *The education establishment: The federal level*. Retrieved from BLOB Watch http://www.edreform.com/About_CER/BLOB_Watch/?The_Education_Establishment_The_Federal_Level

The Center for Education Reform. (2009f). *The education establishment: The state*. Retrieved from BLOB Watch http://www.edreform.com/About_CER/BLOB_Watch/?The_Education_Establishment_The_State

The National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. (GPO Stock No. 065-000-00177-2). Washington, DC: U.S. Government Printing Office. (ERIC Document Reproduction Service No. ED226006).

The White House. (n.d.). *Race to the Top High School Commencement Challenge*. Retrieved from http://www.whitehouse.gov/issues/education

Tice, P., Chapman, C., Princiotta, D., & Bielick, S. (2006, November 28). *Trends in the use of school choice 1993 to 2003: Statistical analysis report*. (NCES 2007-045). Retrieved from http://nces.ed.gov

U. S. Census Bureau, Housing and Household Economic Statistics Division, Fertility & Family Statistics Branch (2008). Current population survey (CPS): Definitions and explanations. Retrieved August 2009 from http://www.census.gov/population/www/cps/cpsdef.html

U.S. Department of Education. (1994). *H.R. 1804: Goals 2000: educate America act*. Retrieved from http://www.ed.gov/legislation/GOALS2000/TheAct/index.html

U.S. Department of Education. (1995). *Improving America's schools act of 1994*. (ED399649). Retrieved from http://www.eric.ed.gov/

U.S. Department of Education. (2003). *Choice Provisions in No Child Left Behind* Power Point presented at the National Title I Director's Conference, February 2003. Retrieved from http://www2.ed.gov/admins/comm/choice/choice03/edlite-index.html.

U.S. Department of Education. (2004). *NCLB Act.* Retrieved from http://www.ed.gov/policy/elsec/leg/esea02/index.html

U.S. Department of Education. (2008). *A nation accountable: twenty-five years after a nation at risk.* Retrieved from http://www2.ed.gov/rschstat/research/pubs/accountable/

U.S. Department of Education (2009). *Funding status*. Retrieved from Charter Schools Program http://www.ed.gov/programs/charter/funding.html

U.S. Department of Education (2010). *Race to the top fund: Program description*. Retrieved from http://www2.ed.gov/programs/racetothetop/index.html

U.S. Department of Education, National Technical Advisory Council. (2008). *Accountability workbook peer review*. Retrieved from http://www.ed.gov/about/bdscomm/list/ntac/index.html

U.S. Department of Education, Office of Innovation and Improvement. (2008). *Successful magnet high schools*. Washington, D.C. Retrieved from http://www.ed.gov/admins/comm/choice/magnet-hs

U.S. Department of Education, Office of Innovation and Improvement. (2009). *A commitment to quality: National charter school policy forum report.* Retrieved from http://www.ed.gov/admins/comm/choice/csforum/report.html

U.S. Department of Health and Human Services. (2009). *The 2009 HHS poverty guidelines*. Retrieved August 2009 from http://aspe.hhs.gov/poverty/09poverty.shtml

Zimmer, R, & Buddin, R. (2006). Charter school performance in two large urban districts. *Journal of Public Economics 60*, 307-326. Downloaded from Science Direct. doi:10.1016/j.jue.2006.03.003

Zimmer, R., Gill, B., Booker, K., Lavertu, S., Sass, T.R., & Witte, J. (2009). *Charter schools in eight states: Effect on achievement, attainment, integration, and competition* (RAND Corporation Monograph No. 869). Santa Monica, CA: RAND. Retrieved June 27, 2009 from http://www.rand.org/pubs/monographs/MG869/