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## Middle School Transition: How It Affects The Achievement of Hispanic Students Relative to ELL Status, Socioeconomic Status, Gender, and Previous Test Scores

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Middle School Transition: How It Affects The Achievement of Hispanic Students  
Relative to ELL Status, Socioeconomic Status, Gender, and Previous Test Scores

by

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A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Education  
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Hispanic student achievement, dual language

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## **Dedication**

This is dedicated to my wife, Evyan. You were and still are my inspiration for taking on such an awesome challenge. Thank you for all the love, support and encouragement you have given me along the way. To Kevin and Kendrick. Dad will finally get his weekends back! To Emma Jean, Myrtle (aka the best Mother-in-Law in the land), Dad, and Gwen thanks for “being there” to help with the boys. This could not have happened without the entire village.

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## **Abstract**

The purpose of this study was to examine the phenomena of middle school transition and achievement as it relates to Hispanic students. According to the 2000 U.S. census, there are more than 35 million registered Hispanic citizens. Of those, 3.6 million are public school students. The literature indicated that there was a marked regression in student achievement during the transition to middle school.

Through the use of descriptive statistics and regression analysis, sixth grade Florida Comprehensive Assessment Test (FCAT) reading and math developmental scale scores (DSS) were analyzed to determine if the mean achievement improved or declined after the transition to middle school. A purposeful sampling procedure was used to select 615 Hispanic students from more than 6,000 students that were enrolled in sixth grade during the 2008-2009 school year.

The major findings of this study did not support the literature that indicated that students experienced a decline in achievement when they transitioned to middle school. Analysis of the descriptive statistics indicated that sixth grade Hispanic students experienced a substantial increase in their mean FCAT reading DSS and a smaller increase in the mean math DSS only increasing by 30 points or 2% after they transitioned to middle school.

## **Chapter I**

### **Introduction**

In the United States, students attend school from kindergarten to twelfth grade. In some districts, they start as early as pre-school. During these formative years students make several milestone transitions. The first transition is from pre-school to kindergarten. The second transition is from elementary to middle school. The final school transition takes place when students enter high school. Transition is defined as “the passage from one state, stage, subject, or place to another” (Webster, 2001). In the context of this study, it is the passage from elementary school to middle school. The end of elementary school marks the end of childhood and the start of early adolescence. There is no other developmental period that has as many changes, in as many areas, as early adolescence (Eccles & Wigfield, 1997). Puberty alone brings about monumental changes in the psychological, social, and emotional development of children.

The phenomenon of transition has existed for as long as there has been a K-12 education system. It is characterized by leaving a small, very personable education setting and entering a larger, less personable and more controlling environment (Barber & Olsen, 2003). For many students these transitions are very difficult. The elementary school to middle school transition is associated with declines in academic achievement, low self-esteem, decreased motivation, and increased psychological distress (Akos, 2002).

For many students these transitions are very difficult. Cauley and Jovanovich (2006) stated that:

Making a transition to a new school causes anxiety in students and can challenge the coping skills of many adolescents, especially those at risk. Typically the move to a new school includes changes in school climate and size, peer relationships, academic expectations and degree of departmentalization by peers. (p. 15)

The elementary to middle school transition is associated with declines in academic achievement, low self-esteem, decreased motivation, and it increases psychological distress (Akos, 2002; Eccles & Midgley, 1989; Eccles & Wigfield, 1997). Many students also show increases in social distress during the transition to middle school. It is a time when referrals to mental health facilities increase and students are trying to re-establish who they are in an environment that is more demanding and mature. It is also a time when students experiment with smoking, drugs and alcohol, and begin to have issues with attendance and low self-esteem (Barber, 2003).

Eccles (1993) used “stage environment fit” to describe the mismatch between middle school structure and the developmental needs of preadolescents. Yecke (2006) believes the concept of middle school itself is responsible for the student achievement loss associated with transitioning from elementary school. The belief is that middle schools should create students who are in touch with their political, social and psychological selves. This whole notion of socialization has stymied the achievement of many middle school students (Yecke, 2006).

In a study conducted by Akos (2002), elementary students transitioning to middle school responded to six questions related to their expectations and experiences in middle school. The research was conducted in four phases, which included 331 students going from fifth to sixth grade. Fifty-nine percent of the students were white, 37% were black, and 4% were other. This longitudinal study started in January of their fifth grade year and ended in December of their sixth grade year. Three concerns for the fifth grade students were older students, homework and lockers. In fact, the greatest fear of students transitioning to middle school was getting lost. They were also concerned about getting into fights, being bullied and/or harassed (Akos, 2002; Elias, 2002). They felt the most positive aspects of middle school were making friends, gym/PE, and lockers. Fifth graders also thought that middle school would be exciting, cool, hard, and scary (Akos, 2002).

As sixth graders the major concerns centered on making friends and caring teachers. They felt that the educational climate of middle school is more stringent, emphasizes drill and practice, and provided less teacher support than elementary school (Daniels, 2005). Middle school students also felt that the instruction was less interesting, the management was more authoritarian, and the relationships were more distant (Midgley, Middleton, Gheen, & Kumar, 2002).

### **Statement of the Problem**

According to Alspaugh and Harting (1995) and Alspaugh (1998), achievement loss is associated with the transition to middle school. Additionally, research found that the transition combined with other life changes such as adolescents, geographic mobility,

or family disruption also had a negative effect on achievement (Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). There is substantial literature that examines literacy and language development for English Language Learners, but not the negative outcomes associated with Hispanics and the first year of middle school (Rumberger & Larson, 1998).

Akos and Galassi (2004) surveyed 173 sixth graders and 320 ninth graders using a School Transition Questionnaire. Each sample set contained a representative number of boys and girls as well as Blacks, Whites, and Latinos. The research found that Latino students perceived the transition to middle school to be more difficult, when compared with White and Black students.

In the United States, the Hispanic population has increased rapidly over the past decade. They make up about 15% of the nations' population and account for more than 10,000,000 students or 21%, an increase of more than 200,000 since 2000 (Pew, 2007). The same trends exist in Florida, where the Hispanic population has tripled from 1990 to 2007. They make up 7% of the population in Pinellas County, and 9% of the enrollment in Pinellas County Schools (PCSB, 2008; Pew, 2009). Hispanics also represent the largest group of ELL students. As Hispanic and Latino enrollment in the United States continues to grow, school districts have not adjusted at the same pace to the specific educational needs these students place on them (Donato & De Onis, 1994; Jesse, Davis, & Pokorny, 2004).

National achievement data indicated that ELL students lagged behind Whites and Blacks in reading and math, with average scale score gaps as wide as 50 points (NAEP, 2009a). Comparisons of The Florida Comprehensive Assessment Test (FCAT) data

indicate similar trends. When transitioning to middle school, ELL students experienced the highest percentage of achievement loss in reading and math, with gaps as wide as 45% (FLDOE, 2009). This lag in achievement combined with the existing achievement loss associated with the transition to middle school indicated that Hispanic students were particularly vulnerable to achievement loss during the first year of middle school.

Another factor that contributed to the lag in achievement for Hispanic students as they transitioned to middle school was the passage of federal policy that eliminated many bilingual education programs and replaced them with English-only instruction (No Child Left Behind, 2001). In addition, the curriculum supports and instructional practices for ELL students were nearly nonexistent beyond elementary school (Jesse et al., 2004). Subsequently, Hispanic middle school students performed much worse than their White and Black counterparts when it comes to academic achievement (Jesse et al., 2004; Waxman, Huang, & Padron, 1997). They are often ‘tracked’ within middle schools, and experience declines in their grade point average (GPA) during the transition to middle school (Akos & Galassi, 2004b).

Rumberger and Larson (1998) conducted a study of a large urban middle school in Los Angeles County, California. It involved two cohorts of Mexican-American middle school students in seventh and ninth grade. The measures were taken when they entered in seventh grade and again in the ninth. The sample consisted of 746 7th graders, of which 445 remained to complete 9th grade and another 39 students that left but later returned to complete 9th grade. The study found that ELL students performed well below students that spoke English or were bilingual. They had lower GPA’s, higher rates of poverty, and were more likely to be over-age for their grade. Consequently, not only

is the achievement of Hispanic students affected by the transition to middle school, but they must also contend with fact they are poor and lag behind other minority groups. In addition, the lack of bilingual instruction and the gap in language and literacy creates additional barriers to achievement for Hispanic middle school students (McLaughlin et al., 2002).

The literature indicated that there is a decline in achievement when students transition to middle school (Anderman, 1996; Alspaugh, 1998; Simmons, Burgeson, Ford, & Blyth, 1987; Whitley, Lupart, & Beran, 2007). In addition, Hispanics are the “fastest growing ethnic group, but the most poorly educated” (Gandara, 2010, p. 24). They are also experiencing tremendous growth in school enrollment (NCES, 2009, PEW, 2007). As a result of rapid growth and inadequate education, Hispanic students suffered academically. Both national and state achievement data reveal that they lag behind their White and Black counterparts during the transition to middle school (NCES, 2009, FCAT, 2009). They must also contend with gaps in language and literacy, the lack of home language maintenance, and poverty (Rumberger & Larson, 1998). Federal policy eliminated many bilingual programs and services, and there are limited studies that examined the effect of middle school transition on the achievement of Hispanic students as it relates to ELL status, SES, gender, and previous test score.

### **Conceptual Framework**

The conceptual framework for this study was developed by the review of literature that indicated that there is a marked decrease in achievement when students transition from elementary school to middle school (Alspaugh, 1998; Anderman, 1996).

The literature also revealed several theories that were associated with the transition to middle school and supported the framework of this study. They were the stage environment fit theory, goal orientation theory, and the classroom goal structure theory. The research was consistent and suggested that there were many factors that contributed to the decline. They included motivation, lowered self-esteem, the onset of puberty, and the school environment, (Akos, 2002; Akos & Galassi, 2004a; Alspaugh, 1998; Barber & Olsen, 2003; Cauley & Jovanovich, 2006; Daniels, 2005; Eccles & Midgley, 1989; Eccles et al., 1993a; Eccles & Wigfield, 1997; Elias, 2002; Hodgson, 2006; Midgley, Anderman, & Hicks, 1995).

**Stage environment fit theory.** It is the idea of the fit of school environment and the needs of students that shaped this study's framework. Eccles and Midgley (1989) refer to it as "stage-environment fit" theory. It is adapted from Hunt's (1975) person-environment fit, which suggested that teachers should provide a sufficient level of structure and challenge in the classroom, while considering the developmental needs (maturity) of the student. Ignoring this will lead to negative developmental outcomes.

Eccles et al. (1993) stated, "changes in the educational environment may be developmentally regressive" (p. 92)." In fact they suggested that:

Exposure to such changes is likely to lead to a particularly poor person-environment fit, and this lack of fit could account for some of the declines in motivation seen at this developmental period. In essence, we are suggesting that it is the fit between the developmental needs of the adolescent and the educational environment that is important . . . . Transition to a facilitative and developmentally appropriate environment, even at this vulnerable age, should



have a positive impact on children's perceptions of themselves and their educational environment. Transition into a developmentally inappropriate educational environment should result in the types of motivational declines that have been associated with the transition to junior high school. This should be particularly true if the environment is developmentally regressive, that is, if it affords the children fewer opportunities for continued growth than previous environments. (p. 92)

Research studies also supported the stage environment theory. Alspaugh (1998) found that students, who transitioned from several elementary schools into one middle school, experienced statistically significant achievement loss, when compared with students who attended K-8 schools.

**Goal orientation theory.** Anderman and Midgley (1997), conducted a study of the goal orientation of the classroom. Commonly referred to as goal orientation theory, it was used to determine student motivation, and how it affects student achievement as they transition to middle school. Two goal categories (task goal orientation and performance goal orientation) were classified in the study and were considered salient to an achievement setting.

When students are oriented to a task they engage in academic work in order to improve their competence, or for intrinsic satisfaction that comes with learning. In contrast, when students are oriented to performance goals, they engage in academic work to prove their competency or to avoid the appearance of lack of ability relative to others. (p. 270)

Midgley, Anderman and Hicks (1995) established that task orientation was associated with elementary students, and performance orientation was associated with middle school students. Because of this orientation, students experienced a teacher/student relationship that was less personal than what they experienced in elementary school (Midgley, 1988).

**Classroom goal structure theory.** Closely associated with goal orientation theory, is the classroom goal structure theory. Urdan and Midgley (2003), conducted a study that examined how changes in students perceptions of goal structure of the classroom “related to changes their motivation, affect and achievement” (p. 531). The classroom goal structures identified in the study were mastery, and performance. Students perceived a greater emphasis on mastery goals in the classroom when they were in fifth grade than when they were in sixth grade (Anderman & Midgley, 1997).

Subsequently, Urdan and Midgley found that:

The most negative pattern of changes in motivation, affect, and achievement was associated with a perceived decline in the classroom mastery goal structure.

Specifically, individual mastery goals, self-efficacy, positive affect and GPA were all significantly lower, and negative affect was higher in sixth grade than in fifth grade within the group that perceived a decline in the mastery goal structure from fifth to sixth grade. (p. 536)

All three of these theories examined different aspects of the transition to middle school. The stage environment fit theory states that the middle school environment by its very nature does not support the developmental needs of students transitioning from elementary school. Subsequently, some students experience declines in achievement. Also associated with the transition to middle school and the school environment, is the

goal orientation theory which states that as students transition to middle school, so does the orientation of the classroom. Elementary classrooms are task oriented and middle school classrooms are performance oriented.

Further advancing the idea of achievement declines and the school environment after transition was Urdan and Midgley's theory of classroom goal structure that stated that students in fifth grade perceived the goal structure or orientation of the classroom differently in fifth and sixth grade. Fifth grade classrooms were perceived to be mastery oriented and thus associated with positive outcomes. Conversely, as students transitioned to sixth grade, they perceived the class to be performance oriented. This was associated with declines in achievement, motivation, and self-efficacy.

These theories linked the idea of the correct fit between the school environment and the sixth grader, and form the foundation for this study. They conceptualized the idea of achievement and middle school transition and provided a framework for organizing the review of literature and data. Based on the transition theories of stage environment fit, goal orientation, and classroom goal orientation, this study advanced the concept of achievement associated with the transition to middle school.

### **Statement of the Purpose**

The purpose of this study was to examine the phenomena of middle school transition and achievement as it related to Hispanic English language learners (ELL). School districts across the nation are experiencing tremendous growth in Hispanic student enrollment. According to the 2010 U.S. census, there are more than 50 million registered Hispanic citizens. Of those, 3.6 million are public school students. The

literature indicated that there was a marked regression in student achievement during the transition to middle school (Alspaugh, 1998; Alspaugh & Harting, 1995; Barber & Olsen, 2004).

This study examined how the academic achievement of Hispanic students correlated with their, ELL status, SES, gender, and previous test score as they transitioned to middle school. The United States is the only country in the world that experiences achievement loss at this transition point (Yecke, 2006). These negative outcomes are attributed to a litany of changes and challenges faced by preadolescents as they deal with puberty, a larger school environment, as well as a complete shift in instructional delivery (Akos, 2002; Cauley & Jovanovich, 2006; Elias, 2002).

### **Research Questions**

Developmental scale scores (DSS) on the reading and math Florida Comprehensive Assessment Test (FCAT) were analyzed to determine how the transition to middle school affected the achievement of Hispanic students. In addition, statistical tests were conducted to determine if there was a relationship between ELL status, SES, gender, and previous test score, as it relates to their achievement. In order to evaluate the theoretical model introduced in this study, the independent variables were examined according to the following questions developed from a review of the literature.

#### **Research questions for reading.**

1. Does the mean FCAT reading DSS of Hispanic students decline when they transition to middle school?

2. What relationships exist between Hispanic students' sixth grade FCAT reading DSS and their ELL status, SES, gender, and fifth grade FCAT reading DSS?

**Research question for math.**

1. Does the mean FCAT math DSS of Hispanic students decline when they transition to middle school?
2. What relationships exist between Hispanic students' sixth grade FCAT math DSS and their ELL status, SES, gender, and fifth grade FCAT math DSS?

**Definition of Terms**

These are the key terms that were used in the study.

*Academic language:* The language used in classrooms or other academic contexts, for the purpose of acquiring knowledge (Stevens, Butler, & Castellon-Wellington, 2000).

*Accommodation:* A change in how a test is administered or responded to. They are used to provide equal opportunity for ELL students to demonstrate knowledge (Menken, 2006).

*Achievement decline:* The decline in mean scale or gain score on standardized test as students transition from fifth grade to sixth grade.

*Adolescent learners:* Students who are experiencing puberty and adolescence while attending school.

*Assessment:* High stakes standardized tests that are mandated by NCLB.

*Average Scale Score:* The average score achieved by students that take the National Assessment of Educational Progress (NAEP).

*Bilingual:* Having the ability to speak English and another language.

*Bilingual Education:* Programs and curriculum designed to promote learning English as well as maintaining the native language.

*English language learners (ELL):* Students who may be in need of English language instruction in order to acquire English language (Abedi, Hoffstetter, & Lord, 2004).

*Environment:* The physical setting students attend school in.

*Florida Comprehensive Assessment Test (FCAT):* A mandatory assessment of students in grades 3-10 on established state benchmarks. The test is a graduation requirement for all public school students.

*Hispanic or Latino:* Individuals who self-identify themselves as persons of Central American, Cuban, Dominican Republic, Mexican, Puerto Rican, South American, or Spanish Origin (U.S. Census Bureau, 2000).

*Middle School:* Organizational groupings generally containing grades 6, 7, 8 (Yecke, 2006).

*Middle school transition:* Transitioning from elementary school to middle school.

*NAEP:* The National Assessment of Educational Progress. This national assessment compares the achievement of select students from every state in America in reading, math, science and writing.

*Socioeconomic Status (SES):* A term used to identify families based on income poverty. In this study, low SES students will be identified by their free or reduced meals status in the local school district.

*Transition:* moving from one school level to the next that is typically a larger setting.

### **Limitations and Assumptions**

There were several limitations associated with this study. The accuracy of data limited the ability of the study to be generalized. Namely, the designation of SES was determined by whether a student received free or reduced meals at school. This information was self-reported by parents and historically has been misrepresented to some degree. Because data were entered into the local student information system by hand, the study was limited by the accuracy of data that was entered by humans. There were no controls for the factors of student achievement related to teacher performance in the classroom. Additionally, standardized measures of achievement were limited to the FCAT.

Several assumptions were inherent to this study. The Florida Consent Decree established the identification of ELL students in Florida, so there was an assumption that all ELL students were properly identified. Based on current data and research, the standardized achievement scores of ELL students lag behind their White and Black counterparts. Language proficiency, cultural differences, as well as the lack of parent involvement, are some of the variables that can be attributed to this gap. Because these

barriers exist, it is assumed that the achievement loss associated with the transition to middle school will be amplified for ELL students.

The study was conducted in Pinellas County Schools in Florida. The researcher examined archival student achievement data in fifth grade and again in sixth grade. The sample consisted of a cohort of sixth grade ELL students in Pinellas County Schools that transitioned to middle school during the 2008-2009 school year. Through an analysis of standardized test scores, the study sought to discover how Hispanic students achieved in the first year of middle school given their ELL status, SES, gender, and fifth grade FCAT scores. It did not investigate the relationship of ELL status, SES, gender, and previous test scores, but confirmed that a relationship exists and reported the significance of the relationship on the academic achievement of Hispanic students during middle school transition.

## **Summary**

The phenomenon of achievement loss during the transition to middle school has been documented by numerous studies and research. Critical elements that contributed to the phenomenon included the middle school environment, the onset of puberty, and the classroom orientation. The phenomenon of achievement loss during transition helped shape the theoretical framework for the study, which was established in this chapter. Legal proceedings, federal and state legislation, research as well as national and state achievement data assisted in shaping the theoretical framework for this study.

The problem statement introduced research that confirmed that the problem of achievement loss associated with the transition to middle school exists, but there is



limited research that examines how ELL status, SES, gender, and previous test scores affected their academic performance. Studies by Akos and Galassi (2004), Rumberger and Larson (1998), and population data by the Pew Hispanic Institute (2007) indicated that there is an ever-increasing Hispanic population that will be affected by the transition phenomenon. The problem is further supported by national and state achievement data that indicated that an achievement gap between ELL students and their White and Black counterparts exist.

In addition to the problem statement, the purpose of the study, along with research questions were also presented in this chapter. The study proposed to examine the achievement loss of Hispanic students as it related to ELL status, SES, gender, and fifth grade FCAT score. Beyond the purpose, the chapter concluded by defining key terms and explaining the limitations and assumptions of the proposed study.

### **Overview of Upcoming Chapter**

Chapter 2 will review the literature related to achievement loss associated with the transition to middle school and Hispanic students. The literature introduced compelling federal and state court cases that mandated bilingual education and programs, as well as landmark legislation that established the framework for these programs to be implemented. Studies and data were also introduced in Chapter 2 that validated the existence of achievement loss as students transitioned to middle school. The data also confirmed the achievement gap between ELL students and their White and Black counterparts.

## **Chapter II**

### **Literature Review**

The purpose of this chapter was to review the historical evolution and legal history of bilingual and English language learner (ELL) education, review significant data and literature related to the transition to middle school and the achievement of Hispanic students. It begins with a description of the legal proceedings and federal legislation that set forth education provisions for ELL students in public education. Next, there is a review and comparison of national, state, and local achievement data for ELL students, which seek to quantify the affect of legal proceedings and federal legislation on ELL academic achievement when compared to White, Black, and Hispanic students. Following the data comparison, there is a review of studies that have examined the effects and underlying causes of achievement loss during the transition to middle school. Subsequently, there is a discussion of how middle school transition specifically affects Hispanic students, followed by a review of literature that suggest best practices that assist ELL students in having a positive middle school transition.

#### **The Evolution and Legal History of ELL Student Education**

English language learners have been a part of the American education system since the 19<sup>th</sup> century (Blanton, 2004). During that time, there was a tremendous increase in the number of non-English speaking families relocating to the United States,

particularly from Germany. Hence, in Mid-Western America, new bilingual programs were established. They were also developed in the Southwest for large Spanish speaking populations and in Louisiana for large French speaking populations (Menchaca-Ochoa, 2006).

There are over 460 languages represented by ELL students within the United States, of which 80% speak Spanish as their native language (Kindler, 2003). These students are concentrated in California, Texas, New York, and Florida, but they also reside in Oregon, Washington, Georgia, and North Carolina (Menchaca-Ochoa, 2006). The efforts to adequately educate and assimilate immigrants into American society ignited a debate about the best method to achieve such lofty goals. There have been a plethora of laws, policy changes and legal debates about the issue, and they continue to dominate the political discourse within American society. By the start of the 20<sup>th</sup> century, the United States Congress and American judicial system served as the dominant venues for establishing public policy related to educating new citizens in a relatively new nation.

The Naturalization Act of 1906, enacted by Congress, [which (a)] established the Bureau of Immigration and Naturalization, currently known as the Immigration and Naturalization Service (INS), [(b)] standardized procedures for nationalization, and [(c)] required some knowledge of English as a pre-condition for citizenship within the United States (Ch. 3592, 34 Stat. L. 596). In *Meyer v. Nebraska* (1923) the United States Supreme Court was asked to determine if state laws, which prohibited the teaching of modern foreign languages to grade school children, violated the Fourteenth Amendment

due process clause within the Constitution. Established in 1919, the Nebraska law declared that:

No person, individually or as a teacher, shall, in any private, denominational, parochial or public school, teach any subject to any person in any language other than the English language.” Moreover, that “languages, other than the English language, may be taught as languages only after a pupil shall have attained and successfully passed the eighth grade as evidenced by a certificate of graduation issued by the county superintendent of the county in which the child resides...Any person who violates any of the provisions of this act shall be deemed guilty of a misdemeanor and upon conviction, shall be subject to a fine of not less than twenty-five dollars (\$25), nor more than one hundred dollars (\$100) or be confined in the county jail for any period not exceeding thirty days for each offense. (Neb. Rev. Stat, c249, 1919)

Plaintiff Meyers, a German language instructor at a private parochial school, was tried and convicted in the Nebraska district court for violating the state law. On appeal, the Nebraska Supreme Court reaffirmed the lower court ruling when it declared the plaintiff intentionally taught German language to a child who had not passed the eighth grade (Nebraska v. Meyer, 1922). The high court ruled in favor of the plaintiff and Justice McReynolds delivered the majority opinion, which declared that:

education of the young is only possible in schools conducted by especially qualified persons who devote themselves thereto. The calling always has been regarded as useful and honorable, essential, indeed, to the public welfare. Mere knowledge of the German language cannot reasonably be regarded as harmful.

Heretofore, it has been commonly looked upon as helpful and desirable. Plaintiff, in error taught this language in school as part of his occupation. His right thus to teach and the right of parents to engage him so to instruct their children, we think, are within the liberty of the [fourteenth] amendment. (*Meyer v. Nebraska*, 1923)

Conversely, the court ruled that the state could require all courses be taught in English, but they could not prohibit the teaching of modern languages in any school.

Consequently, the next five decades ushered in an era of increased state legislation that outlawed the use of any language other than English in teaching elementary students.

ELL students benefited from the legacy of *Brown v. Board of Education*, 347 U.S. 483, because the high court's ruling declared that when state governments provided public education, they must do so in a matter which provides all students equal protection under the law and called for the equal education of minority students to be a top priority. On May 17, 1954, the United States Supreme Court handed down its monumental ruling which affirmed education as a fundamental right. Chief Justice Warren stated emphatically that:

Today education is perhaps the most important function of state and local governments. Compulsory school attendance laws and great expenditures for education both demonstrate our recognition of the importance of education to our democratic society . . . . In these days, it is doubtful that any child may reasonably be expected to succeed in life if he is denied the opportunity of an education. Such an opportunity, where the state has undertaken to provide it, is a right that must be made available to all on equal terms. (p.496)

In addition to its impact on school segregation, *Brown* served as the catalyst for revolutionary change in almost every facet of American society. Ultimately the case would serve as a viable and useful resource in the quest for equal educational opportunity for ELL students.

### **Court Cases and Legislation Impacting ELL Students**

The United States Congress established the Bilingual Education Act (1968), which allocated federal funding to public school districts to meet the educational needs of ELL students from impoverished families. The law was further extended in 1974 to include all ELL students regardless of their family's socioeconomic status. In addition, the newly modified law established a clear definition of the requirements of bilingual education programs and services. Furthermore, the law required that these programs and services be delivered in English and the students' native languages to enhance their academic growth (Bilingual Education Act, 1968).

A civil suit was filed on behalf of non-English-speaking Chinese students in *Lau v Nichols* (1974). The plaintiffs alleged that the instructional procedures provided for non-English speaking Chinese students enrolled in the San Francisco Unified Public School District were in violation of Section 601 of the Civil Rights Act of 1964; which expressly prohibited discrimination based on race, color, or national origin in educational programs receiving federal assistance (42 U.S.C. §2000d). Ruling in favor of the defendant school district, the Court of Appeals explained that "every student brings to the starting line of his educational career different advantages and disadvantages caused in part by social, economic, and cultural background created and continued completely apart from any

contribution by the school system” (Lau v. Nichols, 483 F.2d at 797). Nonetheless, The United States Supreme Court reversed the Ninth Circuit of Appeal’s ruling by declaring that:

Under these state-imposed standards, there is no equality of treatment merely by providing students the same facilities, textbooks, teachers, and curriculum; for students who do not understand English are effectively foreclosed from any meaningful education. Basic English skills are at the very core of what these public schools teach. Imposition of a requirement that, before a child can effectively participate in the educational program, he must already have acquired those basic skills is to make a mockery of public education. We know that those who do not understand English are certain to find their classroom experiences wholly incomprehensible and in no way meaningful. (*Lau v. Nichols*, 1974, p. 566)

This ruling compelled public school districts nationwide to use their expertise to provide special instructional programs and services for ELL students. In addition, further educational provisions for ELL students were established months after *Lau* when the U.S. Congress established the Equal Educational Opportunities Act (EEOA), which declared that:

no state shall deny educational opportunity to an individual because of his or her race, color, sex, or national origin, by . . . the failure of an educational agency to take appropriate action to overcome language barriers that impede equal participation by students in its instructional programs. (20 USC sec. 1703)

Not surprisingly, federal courts were then asked to determine the appropriateness of bilingual education programs in other regions of the United States.

For example, a civil suit was filed on behalf of Puerto Rican children in *Aspira of New York, Inc. v. Board of Education of the City of New York* (S.D. N.D. 1974). The plaintiffs alleged that children, who were English language learners (ELL), could not fully participate in the instructional program due to their language barriers. The ruling of the court established a consent decree whereby the New York Board of Education agreed to provide ELL students with intensive English language instruction as well as instruction in Spanish for core subjects that would reinforce their native language. The consent decree also outlined appropriate testing methods to identify ELL students.

Three years later in *Guadalupe Organization, Inc. v. Tempe Elementary School District* (1978), the same Ninth Circuit Court ruled that neither the U.S. Constitution nor any Civil Rights statutes require public school courses, instructors, instructional materials, or testing procedures to be bilingual or bicultural. In addition, the court of appeals suggested that established compensatory education programs within the Arizona Public School District were sufficient to satisfy the high court's benchmarks in *Lau*.

Beyond the landmark decision in *Lau* and passage of the Bilingual Education Act, there were federal court cases such as the aforementioned *Aspira of New York, Inc.* (1974) and *Guadalupe* (1978) that played a major role in shaping education provisions for ELL students.

### **Federal Cases Impacting Bilingual Curriculum and Instruction**

The legal framework for school districts to establish appropriate bilingual education programs was extended in *Serna v. Portales* (1974). The plaintiffs specifically



alleged that the school district lacked an appropriate bilingual education program because it, (a) failed to hire teachers or administrators of Mexican American decent and (b) did not provide a curriculum representative of the historical contributions of Mexican and Spanish Americans, which caused Spanish surnamed students to have lower achievement rates than their White counterparts. Thus, the plaintiffs sought relief for violations of Title VI of the Civil Rights Act of 1964 and equal protection rights guaranteed under the Fourteenth Amendment of the U.S. Constitution. The court ordered Portales Municipal Schools to establish and implement a bicultural curriculum, review and reform-testing procedures associated with the new curriculum, and recruit bilingual school staff to work in the program in an effort to close the achievement gap between Spanish surnamed and White students.

In *Cintron v. Brentwood* (1978) a civil challenge was filed on behalf of thousands of children of Puerto Rican ancestry to prevent the pending reorganization of bilingual education programs within the Brentwood Public School of New York state. The defendant Brentwood asserted that declining student enrollment resulting in state-mandated teacher lay-offs were the primary cause for the termination of 15 bilingual, non-tenured teachers, a phenomenon that ultimately sparked formation of a more comprehensive bilingual education program. In its rebuke of the school district's proposed reform the Tenth District Court of Appeals ruled that the proposed amendments did not meet the educational and cultural needs of students assigned to the program. On the other hand, the court also rejected the current bilingual program because it segregated the Spanish-speaking students from their peers in Music and Art classes, and provided

self-contained instruction for core subject areas; a clear violation of the guidelines established in *Lau*. The court ruled that Brentwood must:

. . .develop a bilingual education program that must contain more specific methods for identifying on admission those children who are deficient in the English language and for monitoring the progress of such children by the use of recognized and validated tests to ascertain achievement levels and proficiency in the English language. It should have a training program for bilingual teachers and aides. The program must be both bilingual and bicultural. It must provide a method for transferring students out of the program when the necessary level of English proficiency is reached. It should not isolate children into racially or ethnically identifiable classes, but should encourage contact between non-English and English speaking children in all but subject matter instruction (in the earliest classes...i.e. kindergarten and first grade, where subject matter is of lesser importance, the program should emphasize the need for contact between non-English and English speaking children. (p. 64)

Shortly after *Cintron*, approximately 800 students of Puerto Rican decent were plaintiffs in a civil challenge to the transitional bilingual education program within the Patchogue-Medford School District, also located in the state of New York. In *Rios v. Reed* (1978) the plaintiffs claimed that the aforementioned program did not meet the needs of ELL students violating Title VI of the Civil Rights Act of 1964 and Fourteenth Amendment equal protection guarantees. In its observation, the Court of Appeals noted:

that the supervisor of the bilingual education program did not speak Spanish, was unfamiliar with ESL, and had no education or training; school principals,

responsible for evaluating bilingual teachers' performance were unfamiliar with bilingual teaching methods and did not understand Spanish; and also contained bilingual teachers who did not know Spanish and lacked formal training in the methodology of Spanish bilingual teaching. (p. 18)

The Tenth Circuit Court of Appeals again ruled in favor of the plaintiffs, indicating that the program was simply a course in English, which effectively denied students an equal educational opportunity because it did not provide academic instruction in Spanish. The court declared "denial of educational opportunities to a child in the first years of schooling is not justified by demonstrating that the educational program employed will teach the child English sooner than a program comprised of more extensive Spanish instruction" (p. 20). Finally, the court prescribed remedies similar to those it provided in *Cintron*.

The Federal Circuit Courts continued to define bilingual education when a civil suit was filed against the Raymondville Independent School District on behalf of Mexican American children in the case of *Castaneda v. Pickard* (1981). The plaintiffs alleged the absence of appropriate bilingual education programs and services within the Texas school district to be a major factor in the students' inability to rise above language barriers and fully participate in the designated school curriculum. The plaintiffs also alleged that the bilingual programs discriminated against Mexican American students. The Court of Appeals ruled in favor of the defendants declaring that although the Equal Education Opportunities Act (EEOA) did require the provision of appropriate remedial programs for ELL students; nonetheless, it also afforded school districts "a substantial amount of latitude" in doing so. Additionally, the Fifth Circuit Court of Appeals ruled

that the established bilingual education programs in the Raymondville Independent School District were nondiscriminatory and in compliance with EEOA regulations. The plaintiffs filed an appeal in the Fifth Circuit protesting what they believed to be race-based ability grouping practices in student scheduling procedures. Again, the Court of Appeals sided with the school district stating that:

We by no means imply, however, that a state must provide a program of bilingual education to all limited English speaking students in order to satisfy §1703(f) of the EEOA. We hold fast to our conviction voiced in *Castaneda I*, that in enacting §1703(f) Congress intended to leave state and local educational authorities a substantial amount of latitude in choosing programs and techniques they would use. (Castaneda v. Pickard, 1986, p. 461)

Furthermore, the court expressed its satisfaction with steps taken by the school district to ensure an appropriate bilingual education program; specifically the large number of native Spanish speaking teachers and the number of other teachers who were proficient in Spanish hired to work in the program. The court was also pleased with the school district's efforts to ensure that all teachers staffed in the program received the training needed to provide adequate bilingual education programs and services for ELL students. More importantly, the following three-part test used to determine the appropriateness of remediation programs that comply with mandates under the EEOA, emerged out of the *Castaneda I and Castaneda II*: (a) Is the school district's program based upon recognized, sound educational theory or principles? (b) Is the school district's program or practice designed to implement adopted theory, and (c) Has the program produced satisfactory student results? Soon after *Castaneda*, federal efforts to secure equal

education opportunities for ELL students returned to the United States Supreme Court when it considered one of the most polarizing issues in America for the past twenty five years—immigration reform policy.

A Texas law permitted the state to withhold funds from school districts that provided education services to children of illegal aliens; moreover, this law authorized school districts to deny enrollment to children unlawfully admitted to the United States. This state law was challenged in *Plyer v. Doe* (1982). During the proceedings, appellants invoked language within the Fourteenth Amendment that declared that:

No State shall make or enforce any law that shall abridge the privilege or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the law. (Fourteenth Amendment, § II,1868)

First, counsel for the state of Texas argued that undocumented aliens, subject to federal immigration statutes, were not classified as persons ‘within the jurisdiction’ of the state of Texas and therefore have no right to equal protection guarantees of the state’s laws.

Second, persons who unlawfully reside in the state of Texas and are subject to its laws are not legally “within the jurisdiction” of the state.

In a 5-4 decision, the highest court rebuked the state’s narrow interpretation of the phrase “within jurisdiction” and declared that due process clauses within the Fifth and the Fourteenth Amendments of the U.S. Constitution have no exclusionary language. Justice Brennan, who delivered the court’s decision, stated that [equal protection guarantees] “are universal in their application, to all persons within the territorial jurisdiction, without

regard to any differences of race, color, or of nationality; and the protection of the laws is a pledge of the protection of equal laws”. Moreover,

the Equal Protection Clause was intended to work nothing less than the abolition of all caste and invidious class-based legislation [which] is fundamentally at odds with the power the state [has asserted] to classify persons subject to its law as nonetheless excepted from its jurisdiction. (p. 203)

Summarily,

if the state is to deny any discrete group of innocent children the free public education that it offers to other children residing within its borders, that denial must be justified by a showing that it furthers some substantial state interest. No such showing has been made here. (p. 205)

One year after *Plyer* the Tenth Circuit Court of Appeals was again asked to determine the adequacy of a transitional bilingual education program for Hispanic students within the Denver Public Schools. In *Keyes v. School District No.1*, (1983), the federal district court considered the “Castaneda three-pronged remedies” as a framework to deliver its ruling. First, the court ruled that the program (which was crafted to teach English and provide understandable instruction in core subject areas simultaneously) was consistent with sound educational theory. On the other hand, the court cited the Denver Public School’s failure to hire and train qualified personnel inconsistent with practices needed to implement the theoretically based educational program. Failure of the second prong led to the court’s refusal to consider whether the transitional bilingual education program had produced satisfactory gains in English proficiency among Hispanic students within the Denver Public Schools. Although clear in its rebuke of Denver’s bilingual

education program, the court refused to endorse primary language or bilingual instruction solely as best practices for securing equal education opportunities for ELL students. The Court of Appeals ruled that if a district chooses to implement either program or a combination thereof, it must be done in an appropriate manner.

Bilingual education litigation returned to state venues in *Gomez v. Illinois State Board of Education* (1987) in which a lawsuit was filed on behalf of six Spanish-speaking students. The plaintiffs contended that loopholes in the procedures for identifying ELL students resulted in large numbers of under-served students within the defendant school district and the district “failed to provide adequate, objective, and uniform guidelines for identifying ELL children.” The plaintiff’s claims were initially dismissed in the lower court but were heard on appeal to the Seventh Circuit Court. Applying the “Castaneda Test,” the court ruled that the state had a responsibility to monitor and enforce the implementation of bilingual programs and could not delegate these obligations to other agencies in accordance with EEOA regulations. The Circuit Court affirmed a portion of the appeal regarding the Title VI claim, reversed the District Court’s dismissal of the case, and remanded further action to remedy the alleged deficiencies in educating ELL students (*Gomez et al. v. Illinois Sate Board of Education*, 1987).

In 1994, the United States Congress expanded education provisions for ELL students when President Clinton signed into law the Improving Americas School Act of 1994 (P.L. 103-382). This law amended the Bilingual Education Act by: (a) reauthorizing new classifications of local bilingual education grants, (b) establishing new categories for personnel training grants, and (c) eliminating mandatory research projects

as a pre-requisite in securing federal grant funding. According to Kramer, Robertson and Rodriguez (2005), Congressional investigation of the Bilingual Education Act prior to its reauthorization revealed “segregated education programs, unqualified and inadequately trained teachers and staff, and disproportionate and improper placement of ELL students in special education programs. As a result of these findings, the changes in the law were designed to address the noted discrepancies.

Education provisions for ELL students were expanded again in 2001 when the Bilingual Education Act was reauthorized under The No Child Left Behind Act (NCLB) of 2001. The new law, formally named the English Language Acquisition Act required states to assess ELL student performance in math and reading in grades 3 thru 8 and measure additional progress in grades 10 thru 12. In addition, the act required instructors of bilingual education to be fluid in English and any other language used within bilingual education classrooms. Lastly, the new law enforced a limit whereby after three consecutive years of enrollment, English-only instruction shall apply no matter the student’s level of English proficiency. This change essentially enacted a requirement that all students learn English as soon as possible (Pub.L.107-110, 115 Stat. 1425).

The most recent salvo among judicial and legislative efforts to secure education opportunity for ELL students occurred on January 9, 2009 when the U.S. Supreme Court granted certiorari for *Flores v. Arizona* (2009). The most significant details of the case emerged in the year 2000 when the U.S. District Court of Arizona cited the state legislature for not adequately funding ELL programs in violation of the EEOA. Arizona lawmakers responded to the citation with new legislation for ELL programs; however, the court again declared the proposed remedies within the new legislation inadequate and



subsequently imposed numerous fines and sanctions on the state legislature for several years. In its appeal to the Ninth Circuit, the Arizona Legislature invoked: (a) the recent appointment of a new Superintendent in the Nogales Unified Independent School District (NUISD); (b) the comprehensive increases in state public school funding; and (c) the authorization of NCLB (2001) as evidence, which should modify the basis for ruling applied by the lower court. Nonetheless, the Court of Appeals reaffirmed the lower court's ruling in part because Arizona lawmakers refused to comply with the initial sanctions. The U.S. Supreme Court was asked to determine if the lower court erred in its ruling and if changes in district leadership, increases in state funding, and passage of NCLB modified the basis for its original declaration. After 17 years of legal proceedings, in a 5-4 vote, the U.S. Supreme Court sided with the Arizona Legislature and remanded the case back to the Ninth Circuit to determine if the policy modifications invoked by the state are positively effecting the achievement of the ELL students within the NUISD.

### **Bilingual Education in Florida**

Students of Hispanic ancestry make up 35% of the 2.6 million students enrolled in Florida's public schools; many of which are classified as ELLs. This diverse student population presents challenges when it pertains to adequate educational services. Since the 1960's, federal laws, legislation, and guidelines –which include the Civil Rights Act of 1964; passage of the 1968 Bilingual Education Act; the landmark *Lau* decision; Office of Civil Right's *Lau Remedies*; and the Equal Education Opportunities Act of 1974; have mandated educational programs and services for ELL students. It was not until passage of the Florida Consent Decree (FCD) that changes in education program offerings for

Hispanic students became a focal point of the Florida Legislature. The FCD became the framework for school districts to comply with federal and state laws governing the development and education of ELL students in the state. It was the result of a class action complaint filed on behalf of a coalition of eight minority rights and advocacy groups in Florida. The plaintiffs alleged that the State Board of Education had not complied with federal and state law that mandated equal and comprehensible instruction to ELL students (Office of Multicultural Student Language Development, 2001).

On August 14, 1990, the United States District Court of Southern Florida reached a settlement agreement in *League of United Latin American Citizens (LULAC) et al. v. Florida Board of Education*, (1990). The FCD required that all ELL students be appropriately identified in order to receive appropriate educational services. A language survey would be administered to determine the primary language spoken at home. The FCD also required that students identified as ELL be tested in order to ascertain their degree of proficiency in speaking, listening, and comprehending (LULAC v. Florida Board of Education, 1990). Upon completion of the assessment, each student identified as ELL was provided equal access to educational programs that are appropriate to his or her level of English proficiency. These programs were designed for students to develop skills in speaking, listening, reading, and writing. The FCD also required ELL students to have equal access to non-traditional programs and support services such as exceptional, early childhood, vocation, adult and compensatory education, in addition to drop-out prevention.

In order to ensure that ELL students received an equal education, the FCD required teachers who instructed ELL students to be trained or become certified or

endorsed in ESOL teaching strategies. In addition to that, the FCD also set standards for personnel delivering ESOL instruction. The aforementioned training requirement could be met through university coursework or through district in-service training which teachers were required to complete 300 hours in methods, curriculum, testing, linguistics, and culture.

The FLDOE must monitor local school districts on a regular basis to ensure compliance with the Consent Decree pursuant to federal and state law including Section 229.565 of the Florida Statutes (Educational Evaluation Procedures) and Section 228.2001 of the Florida Statutes (Florida Educational Equity Act). In addition to monitoring, the FLDOE was also required to develop an evaluation system containing outcome measures for assessing the fulfillment of federal and state laws pertaining to ELL students. The evaluation system was to be completed by October 1, 1991, amended with the necessary data items by June 30, 1992, and implemented in the 1992-1993 school year (*LULAC v. Florida Board of Education*, 1990).

A modification to the FCD was negotiated between the State Board of Education and LULAC through coalition representation. The Stipulated Agreement, signed by U.S. District Court Judge Federico Moreno on September 10, 2003, is currently active in all Florida School districts. It does not diminish any ESOL options outlined in the FCD; rather, it expands some of the original provisions. First, it provides an additional option through which a certified teacher may obtain ESOL coverage. Second, the amendment requires training, including post-certification hours, for all persons holding administrative and guidance counselor positions (60 hours). Last, the new 2003 amendment allows the plaintiffs to secure access to the ESOL teacher test and provide input that becomes part of

the test's design (*LULAC et al. v. Florida Board of Education et al.*, 2003).

A review of the legal history of ELLs in the United States and Florida revealed several significant trends in policy, political ideology, and legislation related to bilingual education programs and services. As early as the 19<sup>th</sup> century, bilingual education services were provided to non-English speaking immigrants; however, as time passed, a public policy debate emerged from congressional and judicial proceedings aimed at securing the most effective and fiscally efficient methods for serving ELL students. Unfortunately, history implies that the political will required to secure appropriate public education programs and services for ELL students may be grounded in partisan ideology. For example, historically when the democrats have controlled both the White House and Congress, legislation introduced for bilingual education programs have expanded significantly. During President Lyndon B. Johnson's administration, the Bilingual Education Act (1968) was passed, and bilingual programs expanded nation-wide. Similarly, during the Clinton administration, the Bilingual Education Act was reauthorized under the Improving Americas Schools Act (1994) to provide federal funding to states in support of their development of additional bilingual education programs and service. Conversely, when republicans have controlled the White House, support for bilingual education has been repealed and oftentimes legislated as an English proficiency program. For instance, during the Reagan administration, the Bilingual Education Act was amended in 1984 to allow state and local agencies to use English-only instruction as a remedy for servicing ELL students. Subsequently, the Bush administration reauthorized the Bilingual Education Act as the English Language Acquisition Act under NCLB (2001). The new law removed any reference to bilingual

education, including the Office of Bilingual Education and Minority Languages, and renamed it the Office of English Language Acquisition. Under NCLB all ELL students were required to take high-stakes accountability tests, and English instruction is mandated as the remedy for establishing English language proficiency among ELL students (Pub. L. 107-110, 115 Stat. 1425).

History has documented how the country has vacillated between embracing the education of ELL students through maintenance of their home language or mandating that they learn English as quickly as possible, and politics have played a major role in determining which doctrine was supported. Instead of promoting bilingualism, NCLB redirected federal policy to an English-only model of bilingual education. As heads of policy reform, government, and education changed, so has the philosophy and belief about language policy. These changes directly impacted the future success of the millions of ELL students in the United States. Despite Congressional findings and research that validated the benefits of home language maintenance in bilingual education, politicians continued to take party lines as it related to the programs and services provided for ELL students (Blanton, 2004).

The passage of the Bilingual Education Act (1968) established guidelines that assisted in shaping the legal framework for bilingual education in the 1960s and beyond. Over the last 40 years there has been a tremendous amount of litigation on the matter of appropriate bilingual education programs and services. Although the law compelled states and districts to act in good faith on behalf of ELL students, compliance was not done voluntarily nor was it expeditious. Case law has demonstrated that many states and

local school districts had to be court ordered to comply with legislation that was set forth by the United States.

While the Bilingual Education Act recognized the special academic needs of ELL students and called for financial assistance to local education agencies, ELL students continued to be at a disadvantage academically (Kramer, 2005). Today, scores of ELL students are concentrated in urban school settings with inadequate funding, and demographic data indicate that about half of all ELL students attend schools in which 30% or more of the population is ELL (Black & Valenzuela, 2004; Ruiz de Velasco & Fix, 2002). Conversely, achievement data revealed that while guidelines for appropriate bilingual programs and services were ordered and legislated, ELL students still underperformed when compared to their counterparts.

### **ELL/Hispanic Demographics**

During the 2003-04 school year, 3.8 million U.S. students received ELL services (United States Department of Education, 2006). The ELL and Hispanic population continues to grow exponentially and their enrollment in public schools has mirrored this same growth. They make up about 5% of the total student enrollment in the nations K-12 public schools (School Data Direct, 2007). The largest group of ELL students, are Hispanics, which make up 15 % of the nation's population (Pew, 2007). They also comprise about 21% of the nations K-12 public school students, totaling more than 10,000,000 (School Data Direct, 2007). That is an increase of nearly 2,000,000 students since 2000 (Pew, 2007).

In Florida, the Hispanic population increased more than 40% since the year 2000 (Pew, 2007). Hispanic students make up 11.44% of the total student population in Florida. They also make up the largest group of ELL students totaling over 650,000 students (Florida Department of Education, 2007a). The districts with the largest enrollments include Dade, Orange, Broward, Hillsborough, and Palm Beach (Florida Department of Education, 2007a).

In Pinellas County, the Hispanic population tripled from 1990 to 2007, increasing from 20,069 to 63,787. This ranks Pinellas County 119<sup>th</sup> among the 3,141 counties in the United States. Hispanics make up 7% of the total population in Pinellas county, however that population increased 163% from 1990 to 2007 (Pew, 2009). There are approximately 3,592 ELL students in Pinellas County Schools, which make up 3.2% of the student population (Florida Department of Education, 2007a). Similarly, there are 9,765 Hispanic students in Pinellas County Schools, which make up 9.3% of the total student population (PCSB, 2008).

National demographic data indicates that ELL and Hispanic populations and student enrollment have dramatically increased since the year 2000, and a similar trend occurs at the state and local level. In the following sections we will analyze the achievement data related to these student groups. Because NCLB has mandated that all ELL students be assessed, instructed in English, and become proficient as quickly as possible, it is imperative that the results of standardized testing be analyzed for effectiveness as a conduit for English language acquisition and student achievement.

## National ELL/Hispanic Academic Performance

Table 1 presents national trend data on the mathematics achievement of fourth grade ELL students on the National Assessment of Educational Progress (NAEP) for the last three assessment cycles. NAEP is the only national and continuing assessment of what students know and can perform. The assessments are conducted every other year in mathematics, reading, science, writing, the arts, civics, economics, geography, and U.S. History (United States Department of Education, 2009). For the purposes of this study, mathematics and reading scores will be analyzed. The mathematics scores of Whites, Blacks, and Hispanics, are compared to ELL students over three assessment cycles. The data indicates that ELL students are significantly behind their White, Black, and Hispanic counter parts in mathematics and the achievement gap spans as much as 30 points between ELL and White students. For example, in 2005 White student's Average Scale Score (AvSS) were 246 points yet ELL students only scored 216 points. However, ELL's AvSS showed small gains from 216 points in 2005 to 218 points in 2009, showing an increase of 2 points.

Table 1

### *NAEP Grade 4 ELL AYP Subgroup Math Average Scale Scores by Year*

AYP	AvSS		
	2005	2007	2009
White	246	248	248
Black	220	222	222
Hispanic	226	227	227
ELL	216	217	218

*Note.* The National Assessment of Educational Progress (NAEP) Mathematics scale ranges from 0 to 500. AYP=Adequate Yearly Progress. AvSS=Average Scale Score.

*Source:* USDOE, Institute of Education Sciences, National Center for Education Statistics (NCES) NAEP, 2005, 2007 and 2009



Table 2 presents NAEP data on the reading achievement of the same students that were compared for mathematics. White, Black, Hispanic, and ELL students realized a noticeable decrease in the reading AvSS in comparison to mathematics. For ELL students the reading AvSS is 30 points lower than the mathematics AvSS, but again they increase by 2 points from 2003 to 2007. When ELL reading achievement scores are compared to Whites, Blacks, and Hispanics, the same gap exists, with a difference of 43 points. For example, in 2003 White students earned 229 points while ELL students only earned 186 points. The gap is larger for reading than it was for mathematics.

Table 3 presents NAEP data on the mathematics achievement of eighth grade ELL students compared to White, Black, and Hispanic students. The data indicated that, although the AvSS improved from 2005 to 2009 for Whites, Blacks, and Hispanics, that is not the case for ELL students. In fact, by 2009 the AvSS decreased 1 point from 244 points to 243 points. This highlights the growing gap between ELL students and their counterparts spanning as much as 50 points.

Table 2

*NAEP Grade 4 ELL AYP Subgroup Reading Average Scale Scores by Year*

AYP	AvSS		
	2003	2005	2007
White	229	229	231
Black	198	200	203
Hispanic	200	203	205
ELL	186	187	188

*Note.* The National Assessment of Educational Progress (NAEP) Reading scale ranges from 0 to 500.

AYP=Adequate Yearly Progress. AvSS=Average Scale Score.

*Source:* USDOE, Institute of Education Sciences, National Center for Education Statistics (NCES) NAEP, 2003, 2005 and 2007

Subsequently, similar conclusions can be made about the reading data in Table 4. Although the scores have improved from fourth grade to eighth grade, ELL students still lag behind their White, Black, and Hispanic counterparts. There is a gap as high as 49 points in 2007, when ELL students are compared to White students.

Table 3

*NAEP Grade 8 ELL AYP Subgroup Math Average Scale Scores by Year*

AYP	AvSS		
	2005	2007	2009
White	289	291	293
Black	255	260	261
Hispanic	262	265	266
ELL	244	246	243

*Note.* The National Assessment of Educational Progress (NAEP) Mathematics scale ranges from 0 to 500. AYP=Adequate Yearly Progress. AvSS=Average Scale Score.  
*Source:* USDOE, Institute of Education Sciences, National Center for Education Statistics (NCES) NAEP, 2005, 2007 and 2009

National achievement data indicated that ELL students are making gains in reading and math when scores are measured at fourth and eighth grade. However, when ELL scores are compared to non-ELL scores, an achievement gap exists and it increases from fourth to eighth grade. As the focus turns to state data, the fifth and sixth grade ELL scores from the Florida Comprehensive Assessment Test (FCAT) will be compared in order to get a better understanding of ELL student achievement after transitioning to middle school. The FCAT is administered to students in grades 3-11 in mathematics, reading, science, and writing and it monitors students' progress towards state benchmarks (Florida Department of Education, 2009).

Table 4

*NAEP Grade 8 ELL AYP Subgroup Reading Average Scale Scores by Year*

AYP Group	AvSS		
	2003	2005	2007
White	272	271	272
Black	244	243	245
Hispanic	245	246	247
ELL	222	224	223

*Note.* The National Assessment of Educational Progress (NAEP) Reading scale ranges from 0 to 500.

AYP=Adequate Yearly Progress. AvSS=Average Scale Score.

*Source:* USDOE, Institute of Education Sciences, National Center for Education Statistics (NCES) NAEP, 2003, 2005 and 2007

### State Academic Performance

Table 5 presents state FCAT math data for the years 2007-2009. White, Black, Hispanic, and ELL achievement scores are compared at fifth and sixth grade. Similar to NAEP data, ELL students have the lowest achievement results when compared to Whites, Blacks, and Hispanics; however they improved 2% from 2007 to 2009. When scores are compared from fifth to sixth grade, all students experience achievement loss. With the exception of 2007, ELL students experience the highest percentage of achievement loss from fifth to sixth grade. For example, in 2008 ELL students' scores went from 33% to 19 % showing a decrease of 14%.

Table 6 presents state FCAT reading data for the years 2007-2009. Again, White, Black, Hispanic, and ELL achievement scores are compared at fifth and sixth grade. Similar to the math data, ELL students have the lowest achievement results when compared to Whites, Blacks, and Hispanics. The gap is as high as 45% in 2007 and 2009 when fifth grade ELL scores are compared to Whites. When scores are compared from 5<sup>th</sup> to 6<sup>th</sup> grade however, all students experienced achievement loss. Unlike math scores,

ELL students experience the highest percentage of achievement loss from fifth to sixth grade every year.

Table 5

*FCAT Math State Performance Results Grades 5 and 6:  
Demographic Report 2007-09*

AYP Group	% $\geq$ 3					
	2007		2008		2009	
	5th 6th	%	5th 6th	%	5th 6th	%
White	69 61	-8	72 64	-8	72 66	-6
Black	39 29	-10	41 32	-9	43 35	-8
Hispanic	53 44	-9	58 47	-11	58 51	-7
ELL	29 20	-9	33 19	-14	31 21	-10

*Note:* FCAT math scale ranges from 1 to 5. Mastery is 3 and above. AYP=Adequate Yearly Progress  
Source: Florida Department of Education, 2009.

Table 6

*FCAT Reading State Performance Results for Grades 5 and 6:  
Demographic Report 2007-09*

AYP Group	% $\geq$ 3					
	2007		2008		2009	
	5th 6th	%	5th 6th	%	5th 6th	%
White	82 73	-9	78 74	-4	81 78	-3
Black	55 42	-13	50 46	-4	55 48	-7
Hispanic	65 55	-10	61 56	-5	66 60	-6
ELL	37 22	-15	32 23	-9	36 24	-12

*Note:* FCAT Reading scale ranges from 1 to 5. Mastery is 3 and above. AYP=Adequate Yearly Progress  
Source: Florida Department of Education, 2009.

Table 7 presents district FCAT math data for the years 2007-2009. White, Black, Hispanic, and ELL achievement scores are compared at fifth and sixth grade. Similar to state FCAT data, ELL students had the lowest achievement results when compared to Whites, Blacks, and Hispanics, lagging by as much as 48% in 2008. ELL scores improved as much as 5% from 2007 to 2009. Again, when scores are compared from fifth to sixth grade, all students experienced achievement loss. ELL students however, experience the highest percentage of achievement loss from fifth to sixth grade in 2008.

Table 8 indicates that ELL students continue to lag behind their counterparts in reading however, unlike state data, all subgroups perform at a higher level than they do in math. When transition data is compared, ELL students experienced the highest achievement loss, showing a decrease of 20% in 2007.

While ELL students are making gains in reading and mathematics achievement, they still lag behind White, Black and Hispanic students. Of particular interest is the fact that while all groups realized a decrease in achievement when fifth and sixth grade scores are compared for reading and math, ELL students realized the largest decrease.

Table 7

*FCAT Math District Performance Results for Grades 5 and 6:  
Demographic Report 2007-09*

AYP Group	2007		% $\geq$ 3 2008		2009	
	5th 6th	% Change	5th 6th	% Change	5th 6th	% Change
White	70 62	-8	71 65	-6	73 63	-10
Black	30 23	-7	34 23	-11	31 28	-3
Hispanic	47 43	-4	54 43	-11	51 47	-4
ELL	24 17	-7	29 17	-12	28 22	-6

*Note:* FCAT math scale ranges from 1 to 5. Mastery is 3 and above.  
Source: Florida Department of Education, 2009.

Consequently, the same scenario prevails in the comparison of NAEP and state FCAT scores. One factor that may contribute to the achievement gap is the change in the group composition. Higher achieving ELL students are taken out of the group, while newly arrived language challenged students are added (Fry, 2007).

Table 8

*FCAT Math District Performance Results for grades 5 and 6:  
Demographic Report 2007-09*

AYP Group	% $\geq$ 3					
	2007		2008		2009	
	5th 6th	%	5th 6th	%	5th 6th	%
White	81 74	-7	77 74	-3	79 75	-4
Black	47 33	-14	42 38	-4	47 41	-6
Hispanic	62 51	-14	56 54	-2	64 57	-7
ELL	30 10	-20	30 14	-16	34 27	-7

Note: FCAT Reading scale ranges from 1 to 5. Mastery is 3 and above.  
Source: Florida Department of Education, 2009.

Other factors that may contribute to the widening achievement gap are the change in educational setting, and the onset of puberty. A close examination of these and other mitigating factors may reveal why ELL achievement loss may exist during the transition to middle school. This phenomenon is not specific to ELL students; however, as both NAEP and FCAT achievement results have been analyzed, the data indicated that ELL students are the most affected by the transition.

**Elementary to Middle School Transition Phenomenon**

Elementary school is characterized by the use of multiple instructional strategies that include whole group, with students gathered in close proximity to the teacher; small

group, where the students get more individualized instruction; and independent study. During that time the students are reading silently, enhancing their skills through computer-assisted instruction, or participating in direct instruction with the teacher. The transition to middle school involves dramatic changes in how these recent elementary school graduates are educated (Barber & Olsen, 2003). Sixth graders struggle to find their classes, open their lockers, and adjust to the enormity of middle school (Elias, 2002). They worry about bullies, too much homework, and making friends (Akos, 2002; Elias, 2002). They also experience a myriad of hormonal and physical changes associated with puberty and adolescence (Cauley & Jovanovich, 2006).

For most adolescents, healthy development occurs throughout the elementary and secondary levels of schooling, but about 25% to 50% of students do not experience this healthy development, and are at great risk (Elias, 2002). They begin to manifest negative self-perceptions after transitioning from elementary to middle school. According to observational and survey research, secondary environments are less motivating and students have reported that the instruction is less interesting. Students have also reported that management is more authoritarian and teacher–student relationships are more distant (Deemer, McCotter, & Smith, 2003).

Making the transition to middle school also causes anxiety in young adolescents. This is further complicated by changes such as puberty, social and emotional development, the growing importance of peer relationships, and the development of higher order cognitive skills (Cauley & Jovanovich, 2006). Many students also show considerable increases in psychological and social distress during the transition to middle school. It is a time when referrals to mental health facilities increase and students are

trying to re-establish who they are in an environment that is more demanding and mature. It is also a time when students experiment with smoking, drugs and alcohol, and begin to have issues with attendance and low self-esteem (Elias, 2002).

Simmons, Burgeson, Carlton-Ford, and Blyth (1987) conducted a study of the impact major life transitions on early adolescents. Titled *The Impact of Cumulative Change in Early adolescence*, the longitudinal study followed children from sixth to seventh grade in two different school systems. The focus of the study was to examine if a change into a new type of organizational environment is more difficult if it does coincide with other aspects of the transition out of childhood into adolescence (p. 1221). For this study, it was the transition to junior high school or from sixth to seventh grade.

The study included participants from 18 schools within Milwaukee Public Schools from 1974 to 1979. Using a stratified random sampling method, participants were chosen from K-8, K-6, and K-6 schools that were predominantly Black. This study dealt specifically with White children from eight K-6 schools and six comparable K-8 schools. Participation was secured through invitation, and parent permission was received from 82% of those that were invited. Six hundred and twenty-one White students were studied in sixth grade and followed in seventh, ninth, and tenth grade. Each participant was examined several different times throughout the study to determine his or her level of physical development. With all variables considered, there were 447 (*N*) participants available for analysis. The analysis for this study dealt with the first two years of the study—transitioning from sixth to seventh grade (Simmons et al., 1987).

Three dependent variables were identified. They were self-esteem, grade-point average (GPA), and participation in extracurricular activities. Major life changes



(transition variables) were measured in five categories: school change, pubertal change, early dating, geographic mobility, and major family disruption. A linear regression model was used to determine the effect of the number of transitions on each dependent variable. The square of the first regression was entered into a second regression equation in order to examine both linear and non-linear components (Simmons et al., 1987).

The findings of this study indicated that there is an inverse relationship between the dependent variables self-esteem, GPA, and participation in extracurricular activities, and the individual transition variables. Specifically, they suggested that the entry into junior high school alone had significant negative effects on girls with regard to self-esteem and extracurricular participation and boys with regard to GPA and extracurricular participation. GPA was found to be the most responsive to a variety of life changes or transitional variables. In all cases, the GPA was affected negatively, with an average decline of .3 points across all five categories of the independent transition variables.

This study was very comprehensive. It was part of a larger longitudinal study that examined students in sixth grade as they transitioned into seventh grade and followed them through the tenth grade. While the study indicated a correlation between major life changes and a decline in student achievement, and it supported the idea that there are negative outcomes for adolescents who experience multiple transitions at once, it is not generalizable. This study only examined the impact of transitions on White students. There is a need for a similar study to be conducted that would include a more heterogeneous sample that includes Hispanics and Blacks.

**School environment.** The school environment also plays a major role in motivational declines and student achievement loss during the transition process. Middle

school is a time when students have a keen sense of self. They become more self-conscious about their looks, the way they are perceived by others, and their popularity (Hodgson, 2006). Research suggests that at a time when students' cognitive abilities are soaring, middle school teachers are emphasizing lower-level cognitive strategies. Middle school environments appear to be doing the exact opposite of what students need as they transition to middle school and from pre-adolescence to adolescence. This occurs at a time when adolescents' desires for autonomy are growing and their higher order thinking skills are developing (Cauley & Jovanovich, 2006).

One of the most noteworthy changes to the school environment that students must adjust to is the organization of the school day. In elementary school the students have one teacher who teaches all subjects (Weldy, 1991). These schools have caring and nurturing teachers that are more concerned with the students' ability to complete a task rather than their ability to get a correct answer (Alspaugh, 1998). When the students go to lunch or enrichment classes, they walk in a straight line. The whole environment is one of routine, repetition, and order. Students thrive both academically and socially in this environment for six consecutive years.

Akos & Galassi (2004b) conducted a study of student's perception of the transition to middle school as it relates to race and gender. A sample of 173 sixth graders that included 83 boys (48%) and 86 girls (49.7%) was used. The racial composition of the sample was 57.2% White ( $n = 99$ ), 19.7% African-American ( $n = 34$ ), 8.7% Asian American ( $n = 15$ ), 8.1% Latino ( $n = 14$ ), 4% multiracial ( $n = 7$ ), and 2.3% undecided ( $n = 4$ ). The sample was representative of the entire sixth grade. A 4-point Likert type

questionnaire (1-difficult, 4-easy) was used to collect data during the fall semester. The research design used for the study was a causal comparative 2x4 ANOVA.

The results of the study indicated that students did not perceive that the transition to middle school was difficult ( $M = 3.00, SD = .96$ ). Gender was not a significant variable in the overall perception of difficulty, however, gender was significant as it related to feelings of connectedness when transitioning to middle school. Girls ( $M = 15.6, SD = 2.7$ ) felt more connected than boys ( $M = 14.4, SD = 3.6$ ). There was also a significant difference between race and the perception of the difficulty of the transition to middle school. When compared with Whites ( $M = 3.2, SD = .09$ ) and African Americans ( $M = 3.15, SD = .16$ ), Hispanics perceived the transition to middle school to be more difficult ( $M = 2.07, SD = .25$ ).

This study specifically deals with students' perception of the transition to middle school and is very representative of the different groups that are found in today's schools. Overall students perceived very little difficulty with the transition, but certain groups did perceive certain aspects of the transition to be difficult. The authors note that the district in the study was high performing, however, many diverse districts that serve Hispanic students are not high performing. Thus making it difficult for this study to be generalized. Additionally, the study did not link perceptions of transition to actual student performance measures such as GPA or standardized test scores. Including that type of information in the study would allow perceptions to be quantified by actual performance data.

In middle school, the campus is considerably larger. Students are concerned about getting lost, rules, and the increased amount of homework that is associated with

middle school (Akos & Galassi, 2004a). Being safe becomes a major concern for students transitioning from elementary school to middle school (Akos, 2002; Elias, 2002). They also encounter lockers, showering, and changing classes for the first time in their school career. They share space with students that come from four or five different elementary schools, and attend classes with people they are not familiar with. As brand new students, sixth graders are the low men on the totem pole. They are frequently ridiculed and in some instances, become the victim of bullies (Elias, 2002).

Middle school classes change every 45 to 50 minutes. Sixth graders shuffle through crowded hallways, attempt to open their lockers, and get to one of their six or seven classes in 4 to 5 minutes. The teachers in these classes are concerned with how well students perform on homework, tests, projects, and other class assignments, rather than if they completed it. The students must quickly adjust to a setting that requires more organization, their ability to navigate a much larger building, and increased demands to perform academically (Midgley, Anderman, & Hicks, 1995). This causes anxiety and stress, and eventually decreased academic achievement (Alspaugh, 1998; Daniels, 2005).

**School environment fit.** Besides the changes in the school and class environment, adolescents are experiencing puberty and many other social and psychological changes (Eccles et al., 1993a). They desire autonomy from adults, such as teachers and parents (Steinberg, 1990; Buchanan, 1992) and are concerned about social acceptance, their identity, and developing sexual relationships (Brown, 1990). They show increased self-focus, self-consciousness, and are able to engage in more abstract, cognitive activities (Brown, 1990; Katchadourian, 1990).

Eccles et al. (1993) suggested that these changes in the adolescents are related to the change in the school and classroom environment in middle school. The environment they experience when they transition to middle school is the exact opposite of what they need. Their environment should be safe, intellectually challenging, and be able to meet their developmental needs (Blyth, 1978). Because these conditions were not met, Eccles et al. (1993), believed that traditional middle schools were developmentally inappropriate for many early adolescents. In fact, this “mismatch” between the needs of early adolescents and the environment of middle school classrooms results in decreased motivation and academic performance (Eccles et al., 1993).

Hunt (1975) suggested that the negative motivational consequences associated with the transition to middle school are a direct result of the school environment that does not fit the needs of adolescent students. The term “stage environment fit” was used to describe and argue that the fit between the developmental needs of students and the school environment is vital to the motivation and academic achievement of adolescents (Eccles & Midgley, 1989). An environment that is responsive to the needs of pubescent students will stimulate and promote continued increases in motivation and achievement. Environments that are not responsive and do not cater to the needs of adolescents will see motivation and academic achievement decline as students transition to middle school (Eccles et al., 1993).

To be more specific, Eccles et al. (1993) stated that, “the environmental changes experienced by students as they transitioned to middle school, were found to be especially harmful.” The emphasis in middle school is on competition, social comparison, and ability self-assessment. There are decreased opportunities for close

adult-child relationships and an emphasis on lower level cognitive strategies at a period in an adolescent's life when they want to make more of their own decisions and may be in need of a close adult relationship outside of the home (Eccles et al., 1993).

**Classroom goal structure.** Most U.S. elementary schools are characterized as having one teacher that teaches students all subject area. This is in sharp contrast to classrooms in most middle schools. When students transition to middle school, they have one teacher for each subject. These teachers place a huge emphasis on control and discipline (Brophy, 1978). The students experience a less personal positive relationship with their teachers than they did in elementary school (Midgley, 1988). The instruction focuses more on the content being taught. The primary instructional strategy is lecture style with students seated in rows. The lecture is followed up with seatwork. This routinely involves answering questions, completing vocabulary words or a worksheet associated with the lecture. They no longer receive small group direct instruction; instead, the teacher relies heavily on "whole-class task organization" (Rounds & Osaki, 1982) and the age-old practice of exchanging papers to be graded (Gulickson, 1985). In fact, the first year of middle school is marked by class work that is cognitively lower than the work they had in elementary school (Rounds & Osaki, 1982).

In a study conducted by Urdan and Midgley (2003), perceptions of the classroom-goal-structure as students transitioned from elementary school to middle school were examined. It was derived from a larger longitudinal study that included four ethnically and economically diverse school districts in southeastern Michigan. The students were selected with the assistance of the school district to ensure that a representative sample was chosen. The students came from 39 classes in 21 elementary schools as they

transitioned into 10 middle schools. Permission was granted by 83% of the students and parents, the sample size was 555. Surveys were used to collect data in the spring semester of the fifth, sixth and seventh grade year of each student in the sample. The surveys used a Likert-type scale ranging from 1-5 (Urda & Midgley, 2003).

The two variables measured in this study were aligned to classroom goal structure perceptions mastery and performance. Three groups were created for each variable: (1) increase in perceived goal structure from fifth to sixth grade; (2) no change in perceived goal structure; and (3) decrease in perceived goal structure. A cut of score of .67 standard deviations was used to distinguish group membership. A series of repeated measures ANCOVAs were conducted to examine the interaction between and within the groups (Urda & Midgley, 2003).

The results of the study indicated that students who perceived a decrease in the emphasis on mastery after transitioning to middle school, also experienced declines in motivation and achievement. A change in the perceived goal structure of the classroom was strongly related to students' motivation and achievement outcomes. After students transitioned to middle school, they perceived their classrooms to be less mastery-goal oriented, and more performance oriented. An analysis of main effect indicated that students had lower academic self-efficacy ( $F = 8.56$   $p < .01$ ,  $\eta^2 = .02$ ), lower GPA's ( $F = 51.15$   $p < .001$ ,  $\eta^2 = .09$ ), and endorsed personal mastery less ( $F = 17.93$   $p < .001$ ,  $\eta^2 = .03$ ), as they transitioned from fifth to sixth grade. These students were associated with the sharpest declines in adaptive outcomes and the steepest increase in negative affect as it related to the transition to middle school (Urda & Midgley, 2003).

This study examined students' perception of the goal orientation of the classroom as they transitioned to middle school. While the research suggested that a decrease in students perception of the mastery orientation of the classroom was associated with declines in adaptive outcomes (self-efficacy, positive affect, and GPA), It did not indicate how these adaptive outcomes might be associated with the perceptions of Hispanic or ELL students. The participants in this study were White or African-American of which 50% were female. A more generalizable study would include a more diverse student population that reflects the current population trends in public schools.

**Achievement/motivation loss.** International studies, such as the Trends in International Mathematics and Science Study (TIMSS) indicated that achievement of U.S. students begins to plummet in middle school (Yecke, 2006). The research suggests that the reason this occurs is that educators expect very little from the students academically or behaviorally. The whole notion of the middle school concept has convoluted the intellectual development of many middle school students. In addition, the parents feel the discipline is too lax and intermittent (Yecke, 2006).

Student achievement declines once a student enters middle school. According to standardized test data, students in grades 3-5 outperform students in grades 6-8 (Florida Department of Education, 2008c). When they reach middle school, the gains they have made in elementary school decrease and stagnate. Several studies (Akos & Galassi, 2004a; Alspaugh, 1998; Eccles & Midgley, 1989) indicated that middle school transition has a profound affect on student achievement and motivation. Deemer, McCotter, and Smith, (2003) believe that the size and the bureaucratic nature of secondary schools limit their effectiveness. Eccles et al. (1993a) believe that the school and classroom



environments in middle school are responsible for the declines. Other variables that might affect student achievement during the transition to middle school include lack of connection to the community, departmentalized teaching, ability grouping or tracking, normative grading and large student loads (Deemer et al., 2003).

As students transition from elementary to middle school, school and classroom environments no longer foster mastery and task completion. They promote performance and ego goal orientation (Wigfield, Eccles & Rodriguez, 1998). These changes in the school and classroom environment are associated with declines in academic competence, interest, achievement, and motivation (Eccles et al., 1993a).

Alspaugh (1998) conducted an ex post facto study of 48 (*N*) school districts organized into three sets of 16 to determine if there was significant achievement loss associated with the transition to middle school. Each set of districts was characterized by how the elementary and middle schools were associated with one another. The first set consisted of a K-8, 9-12 organization, with an elementary school and a high school. The second set consisted of an elementary school, a middle school, and a high school. The third set of districts included two or three elementary schools, one middle school, and one high school. The author referred to the third set of districts as a “pyramid transition arrangement”. The schools in these districts were all small rural schools.

The Missouri Mastery and Achievement Test were used to measure student achievement from one grade to the next. The method of analysis was a two-way ANOVA with repeated measures. It was used to compare achievement scores, across subject areas. Scale scores from all core content areas (reading, math, social studies, and

science) were measured to determine if student achievement increased or decreased across the transition.

The findings of the study suggested that there was significant loss in achievement as students transitioned from fifth grade to sixth grade, particularly those students that transitioned from elementary to middle school. Students that transitioned from three or four elementary schools into one middle school (pyramid transition) experienced the most achievement loss dropping from an Average Scale Score of (AvSS) 307.13 in fifth grade to 300.06 in sixth grade across all subject areas. Students that experienced a linear transition (moving from one elementary school to one middle school) experienced a 5.00 AvSS reduction, dropping from 307.13 in fifth grade to 302.13 in sixth grade. Students that transitioned from a K-8 elementary school to a 9-12 high school realized a 7.40 AvSS gain, when compared with students that transitioned a second time to high school; increasing from 293.02 in fifth grade, to 300.42 in sixth grade. (Alspaugh, 1998).

Additionally, mixing students from multiple elementary schools into one middle school might increase achievement loss. The fact that students transition once in sixth grade, then again in ninth grade did not moderate the achievement loss. These students instead faced a “double jeopardy” by having to transition twice (Alspaugh, 1998). When compared to their counterparts that attended a K-8 school, the results indicated that students attending middle school scored well below their K-8 counterparts.

The study was limited by the fact that it took place in rural and small town settings. It did not account for variables that would be found in large urban or suburban districts. While the findings indicated a correlation between the number of transitions, and achievement loss, it did not give any indication of how this same study would affect

Hispanics or students in poverty. There is a need for a similar study to be conducted in a large urban school district that has a diverse student enrollment.

### **Hispanics and Transition**

Since 1980, the enrollment of Hispanic students in public schools has increased considerably and continues to increase every year (Donato & De Onis, 1994; Stevens, Hamman & Olivarez Jr., 2007). The American Community survey indicated that as of 2009, there are more than 48 million people of Hispanic decent in the United States. They comprise nearly 16% of the total population and represent the largest minority group (U.S. Census, 2009). Hispanics also account for 77% of all ELL students (Gandara, 2009).

There are 228,127 ELL students in Florida's public schools. That accounts for nine percent of all students enrolled (OPPAGA, 2009). Of all racial/ethnic groups, Hispanics had the highest percentage (27.6%) of ELL students (NCES, 2006). As a proportion of the race, that is a 4.8% increase from the 1997-1998 school year.

The state of Florida identifies ELL students in one of eight sub-categories. These categories were created as a direct result of *LULAC vs. State Board of Education* (1994). They represent the current service status of an ELL student in Florida's public schools. Table 9 identifies these categories and explains the differences. Locally, ELL students account for 3.8% of the PK-12 enrollment. That is approximately a 2% increase from the 1997-1998 school year (Florida Department of Education, 2007).

In Florida, Hispanics are also the largest minority group represented in our public schools, outnumbering African-Americans by 43,000 students (FL DOE, 2008b). As the

number of Hispanic and Latino students in the United States continues to grow, schools have not adequately adjusted to the demands that the special needs of these students may place on them (Donato & De Onis, 1994; Jesse, Davis, & Pokorny, 2004). In many instances, districts hustle to find teachers for special courses such as ESOL, or try to implement policies and procedures to address their needs (McLaughlin, Liljestrom, Lim, & Meyers, 2002)

Table 9

*FLDOE Categorization of ELL Students*

FLDOE Categorization of English Language Learners	Status of Students
LY	Students enrolled in classes specifically designed for LEP students. <ul style="list-style-type: none"> <li>• LY&lt;2: designated LEP for less than 2 years</li> <li>• LY&gt;2: designated LEP for more than 2 years</li> </ul>
LN	Students Classified as LEP, but not enrolled in LEP classes
LP	Students in grades 4-12; tested fully English proficient on an aural/oral test but awaiting reading and writing assessment
LF	Students who left the LEP program within past 2 years
LZ	Students who left the LEP program more than 2 years ago
ZZ	Non-LEP students.

Source FLDOE, 2001

ELL students need. . .

the same broad based curriculum that most parents contend they want for their children. But they also need more: They need additional instructional time to acquire English skills and standard curriculum; they need explicit instruction in academic English; they need explicit instruction in the culture and norms of American society; they need emotional and often social service support to address the traumas of refugee and migrant experiences; and they need a roadmap for navigating the educational and occupational systems in this country. In spite of this, they often receive less, not more, instructional attention. (Gandara, 2009, p. 755)

The transition to middle school brings with it an enormous amount of negative outcomes in the areas of achievement, motivation, and social adjustment. What has not been examined to this point is how that same transition affects Hispanic students. Often, Hispanic students face a triple edge sword. Not only do they have to navigate the transition to middle school, but they must also deal with learning a new language, and culture (Rumberger & Larson, 1998). They perceive the transition to middle school significantly more difficult than their White and African-American counter parts (Akos & Galassi, 2004b). In addition to having to navigate a larger environment, adjust socially and physically, ELL students also experience a decrease in language support as they transition to middle school.

Another consideration for Hispanic students as it relates to school, is the role the parent takes in educating their child. Traditionally, Hispanic parents, particularly those

of Mexican heritage, have stayed away from the school. It is their belief that their children's education is the responsibility of the school (Valdes, 1996). Parents often lack the resources necessary to take an active role in their child's education. Many have not had formal education beyond the sixth grade, and most mothers dropped out after only three years of schooling; most often to assist their mothers with responsibilities at home. Consequently, few parents would have the skills necessary to help with homework or communicate effectively with school personnel. Other obstacles for Hispanic students to have a good network of support outside of school include transportation, work and child care, as well as their parents immigrant status (Clearinghouse, 2003).

As part of the Florida Consent Decree, the state requires that any Language Arts or Reading instructor that teaches ELL students must receive the necessary training, endorsement, or certification in ESOL instruction (*LULAC v. Florida Board of Education, 1990*). For elementary teachers, this requires them to take five in-service courses totaling 300 hours, take and pass the subject area exam and two in-service courses totaling 120 hours, or take five college courses in ESOL. This gives teachers extensive training in language strategies that will help ESOL students become successful. In middle school, only the Language Arts and Reading teachers are required to take the extensive 300 hours or its equivalent of ESOL training. All other subject area teachers are only required to take 60 hours of in-service courses to assist them in providing language support for middle school ELL students. Subsequently, as Hispanic students transition to middle school, the language support they receive is diminished by the amount of teachers not fully trained and educated in the use of ELL language strategies.

Across the country, the middle schools that Hispanic students attend look very similar. Most are in large urban areas, where segregation is the norm, not the exception (Donato & De Onis, 1994; Jesse, et al., 2004). A large percentage of these middle schools are culturally subtractive, and very few provide services for the home language of the increasing number of Hispanic students that are enrolled in them (Jesse et al., 2004). Recent federal policy reauthorizations have eliminated funding for most bilingual education programs, replacing them with ESOL programs that focus on English-only instruction (NCLB, 2001). In Texas, bilingual instruction is not required after the sixth grade (Jesse et al., 2005; Kramer et al., 2005). Many Hispanic middle school students can be heard speaking Spanish in the hallways or on the playgrounds, but little is done in the way of curriculum or instructional practices to address their language needs (Jesse et al., 2004).

### **Hispanic Student Achievement and Assessment**

Hispanic middle school students typically perform much worse than their Anglo counterparts do when it comes to academic achievement (Jesse et al. 2004; Waxman, Huang, & Padron, 1997). They are often ‘tracked’ within middle schools, and experience significant declines in their GPA during the transition to middle school (Akos & Galassi, 2004b). Besides being tracked, Hispanic middle school students are routinely exposed to a different curriculum than their White peers. This prolonged exposure to substandard curriculum, hinders their academic achievement, and eventually limits their opportunities for admission to college and post-secondary education (Donato & De Onis, 1994).

In a study by Rosenthal, Baker, & Ginsburg (1983), language was studied to determine its effect on achievement and learning for elementary school students. The sample was taken from the 1977 Hoepfner et al. Title I Sustaining Effects Study. More than 81,000 students participated in the initial study, of those 15,579 were randomly selected. The students were from more than 240 elementary schools in grades one through six and were classified in two groups: (1) all students who spoke Spanish at home regularly and (2) all students who regularly spoke English at home.

The variables for the study were divided into three categories; achievement, home background, and language. The achievement variable was two tiered and examined students' achievement level and learning in reading and math. The fall CTBS score designated achievement level and the spring score minus the fall score represented learning. The home background variables were tiered as well and included socioeconomic status and race/ethnicity. The language variables were divided into three subgroups to determine what language was used regularly at home, and to assist with homework. These variables were dummy coded for the purposes of statistical analysis.

The statistical methods used in the study included a linear, non-additive regression equation for learning using data from the fall and spring CTBS. Each equation was designed as a function of the two home background variables (socioeconomic status and race/ethnicity) and language. The tests were used to determine the level of interaction needed to explain student achievement and learning.

The results indicated that students with a strong Spanish language background had lower achievement levels in reading and math when compared to students who spoke English as their first language at home. The difference was larger in reading, with scores



ranging from -.48 to -1.01 standard deviations below the mean across the groups. This difference in achievement was significant beyond  $p < .01$ . The results for learning were similar, but they were not consistent across the groups. While the decreases associated with language were the same, the difference across the groups was very small.

The study clearly indicated that home language effects student achievement and learning. While this study examined baseline and end of year data to determine achievement and learning by comparing language groups, it did not isolate Spanish speaking students to determine if they have made actual learning gains within their groups, which explains why learning difference scores across groups were small. It would be helpful to see what impact the transition had on student achievement combined with language.

In a study by Rumberger and Larson (1998), two cohorts of Mexican-American language minority middle school students were examined to determine the impact of language on student achievement. The cohorts were taken from a large urban middle school in Los Angeles County, California. The sample size consisted of 746 7th graders, of which 445 remained to complete 9th grade. Another 39 students left but later returned to complete 9th grade.

The cohorts were identified as transient and stable. Within each cohort, two dependent variables were identified, GPA and transiency. For the entering cohort (those entering seventh grade), the GPA was measured in the fall semester along with whether they left school early. The spring semester GPA was measured for the exiting cohort (those exiting 9<sup>th</sup> grade), along with the amount of first quarter ninth grade credits

Additional family and background variables were also included in the study. One of the most important was the students' language classification. For the study, Rumberger and Larson classified the students into three language groups: limited English proficient (LEP); initial fluent English proficient (IFEP); and reclassified as fluent English proficient (RFEP). The study also examined gender, poverty (as measured by the school lunch program), and age.

The statistical methods used in the study included least squares regression and logistic regression. A series of recursive statistical models were also used. Data was collected and analyzed over a three-year period. Once when they entered as 7th graders and again when they left as 9th graders. The results of the study found that LEP (also referred to as ELL) students performed below students that spoke English or were bilingual. They had lower GPAs (2.13; 2.33; 2.44), higher rates of poverty (.78; .61; .71), and were more likely to be over-age for their grade.

This study examined the impact of language on student achievement specifically for Mexican-American middle school students. The findings suggested that LEP students had lower GPA's, higher poverty, and were older. Language was not a predictor nor could it explain achievement among low-income urban Mexican-American students. While it clearly indicated that language plays a role in the achievement of ELL students, Rumberger and Larson suggested that the findings were preliminary and that language proficiency is necessary for ELL student success, but not sufficient. Additional research is needed to determine what other variables may contribute to increasing ELL student achievement.

One of the keys to determining how successful Hispanic/ELL students will be is how well they perform on achievement tests. Although there have been modest gains in the achievement of Hispanic students, they still lag behind their Anglo counterparts (Jesse et al., 2004). Since the reauthorization of the Elementary and Secondary Education Act as the Improving America's Schools Act in 1994 and as the No Child Left Behind Act in 2001, all state assessments are now known as "High Stakes Tests" (Menken, 2000). This policy reform has mandated the inclusion of ELL students in high-stakes testing.

The Bush administration implemented an education accountability system that requires that more than 3 million English language learners in the United States learn English "as quickly as they possibly can (NCLB, 2001)." The legislation calls for English fluency among ELL students in 3 years, which defies the findings of language acquisition research (Krashen, 1997; Ovando & Collier, 1998).

States must now assess ELL students for academic content as well as language proficiency (Menken, 2006). Historically in the United States, ELL students have not participated in large-scale student assessment because educators were concerned about the correlation between language proficiency and academic achievement (Mahon, 2006; Abedi, 2002). The practice of non-inclusion has resulted in little or no accountability for the academic progress of ELL students .

ELL students have not benefited from the educational reforms associated with high-stakes testing. Even after the passage of NCLB, many states still exempt ELL students from high-stakes testing if they have been in the United States for less than three

years. This has resulted in ELL students not being considered in the design of bilingual education programs and instruction.

### **Dual Language Programs**

Dual language or two-way immersion programs were designed to pair language minority and language majority students in the same class. The goal of these programs is to increase academic proficiency, bilingualism, and self esteem (Potowski, 2004). The predominant minority or heritage language in these programs is Spanish, which is consistent with population data that indicates that the largest minority group in the United States is of Hispanic decent (U.S. Census, 2009). Most of these programs occur in elementary schools and provide four to six years of core content bilingual instruction. The most popular program designs include a 90/10 model that provides instruction in the target language for 90% of the day in the early grades and gradually moves to 50% English instruction in the upper elementary grades. There is also a 50/50 model that provides 50% of the instruction in English and 50% of the instruction in Spanish across all grade levels (Christian, 1996).

In a study by Lindholm-Leary & Borsato (2002), high school students who previously participated in a two-way immersion program in elementary school were examined to determine the impact on their language and achievement. Three groups of students were studied: 1) Hispanic students who entered the program as ELL's; 2) Hispanic students who began the program as predominantly English speakers; and 3) Non-Hispanic English only students.

The sample included 142 bilingual high school students that were classified as native English or Spanish speakers according to how they entered kindergarten. Sixty six percent were native Hispanic speakers of Spanish, 20% were Hispanic native English speakers, and 13% were non-Hispanic native English speakers. A sample of 17 Hispanic native Spanish-speaking students who did not participate in the two-way immersion program was chosen for comparison. Each student completed a five-point Likert scale questionnaire. They answered questions with regard to motivation, attitude about school, school path, college ambitions, and attitude toward bilingualism and two-way immersion programs. The comparison group did not answer questions about bilingualism or the two-way immersion program (Lindholm-Leary & Borsato, 2002).

The results of the questionnaire indicated very few differences among the three groups of two-way students. Most reported high levels of motivation and academic competence; education was strongly valued and believed to be the way to a better life. In fact 93% of all Hispanic students felt that good grades were essential to getting into college. Two-way students also engaged in activities that were aligned to doing well in college. Of the 142 two-way students that were sampled, only six were enrolled in basic math classes. Hispanic Spanish speakers had the lowest grades (B's/C's/D's), but a higher percentage earned A's and B's in language arts and social studies classes. All of the students reported positive attitudes towards the two-way program, and most felt that being bilingual would help them get a better job (Lindholm-Leary & Borsato, 2002).

While this study indicated very positive results for those students that participated in two-way immersion programs, the researchers indicated that the comparisons between the two-way students and the comparison students were not statistically significant. It

should also be noted that the comparison sample was very small and may not be an appropriate size for more general considerations. This study would have benefited from an examination and comparison of GPA's and standardized test scores of the two groups in order to ascertain if participation in a two-way immersion program actually impacts student achievement.

Barnett, Yaroz, Thomas, Jung, & Blanco (2007) conducted a study that compared the effect of dual language or two-way immersion (TWI) and monolingual English immersion (EI) on the learning of preschool aged students. The study was conducted in a Northeastern city that had a population that was approximately 50% Hispanic. The sample was randomly selected from a pool of 1000 3-and 4-year olds that applied for the TWI program, 79 were TWI and 52 EI.

Each student was given a pre and posttest during the fall and spring of the 2003-2004 school year to determine learning growth. The assessments included the *Peabody picture vocabulary test (PPVT-III)*, the *Test de Vocabularion en Imagenes Peabody (TVIP)*, the *Woodcock-Johnson psycho-educational battery-revised (WJ-R)* and the *Bateria Psio-Educativa Revisada de Woodcock-Munoz-Revisada (WM-R)*. Assessments were also given to measure acquired literacy skills and literacy support as well as classroom environment and quality. The students were tested on rhyme and alphabet recognition and phoneme deletion. Classroom measurements included the *Early childhood environment rating scale revised (ECERS-R)*, the *Supports for early literacy assessment (SELA)*, and the *Supports for English language learners classroom assessment (SELLCA)* (Barnet et al., 2007).

The statistical test used in the study included simple independent *t*-test, matched pairs *t*-tests regression analysis and a hierarchal linear model, ANOVA, and Glass' delta. The results indicated that all children made substantial learning gains increasing six points on the PPVT, five points on the WJ-R Picture Vocabulary and three points on the WJ-R Applied Problems test. Gains were also realized on literacy measures with students gaining five to six points on letter recognition. Program analysis revealed nearly identical effects for TWI and EI at  $p < .05$ . Spanish language measures on Spanish speaking TWI students indicated significant gains on the TVIP ( $es = .61$  and  $.56, p < .001$ ) when compared with EI students, and the Spanish language rhyme test ( $es = .45, p < .05$ ). *T*-tests indicated no significant difference in the mean ECERS-R and SELA in the TWI and EI classrooms, but there were significant differences in the use of primary language ( $F(2,33) = 34.87, p < .05$ ) and support of cultural background ( $F(2,33) = 34.87, p < .05$ ) (Barnet et al., 2007).

While the findings suggested that learning gains were made for students participating in the TWI program, there was not a significant difference for TWI students when compared with EI students. Given the relatively small sample size for this study, it would be very difficult to make any generalizations with regard to the impact of two-way immersion programs on the learning of the students that participated in it. Additionally, the length of the study and the age of its participants make it difficult to realistically conclude how effective a TWI program is. It would be beneficial to see this study duplicated in a longitudinal protocol.

In a study by Lindholm-Leary & Block (2009), Hispanic students in dual language immersion programs from predominantly low SES or segregated schools were

examined to compare their performance on standardized test relative to mainstream students in other schools and the state. The study was a collaboration of two separate studies being conducted at the same time by the authors. They are identified as Study 1 and Study 2. The sample consisted of 659 Hispanic students from four schools in three school districts in California. Each school was at least 66% low SES and 80% Hispanic and used a 90:10 dual language model.

The students were categorized as English proficient (EP) or ELL when they entered school. Students who reclassified as EP were not reclassified in the study because the focus was on trajectory scores for those who started as predominantly Spanish speakers. The measures in the study included the passing rates on the English language arts and the Mathematics subtest of the California Standards Test (CST), a criterion-referenced state assessment. The test included five achievement classifications: Far Below Basic, Below Basic, Basic, Proficient, and Advanced. Passing the CST required an achievement level of at least proficient or a scale score of 350 or better (Lindholm-Leary & Block, 2009).

The results of Study 1 indicated that both EP and ELL dual language students passed the English (38% vs. 27%, 50% vs. 42% and 33% vs. 24%, 22% to 20%) and Mathematics (56% vs. 31%, 39% to 43% and 67% vs. 53%, 67% to 25%) CST at higher rates than their fourth and fifth grade mainstream counterparts. Study 2 finds similar results for passing rates for EP and ELL dual language students on the CST and also examined scale score differences from fourth to sixth grade that indicated significantly higher performance levels for dual language students in English (EP:  $M = 355.8$ ,  $SD = 41.8$  vs.  $M = 324.6$ ,  $SD = 45.5$ ,  $t(204) = 4.5$ ,  $p < 0.001$ , Cohen's  $D = .71$ ; ELL:  $M =$



326.1, SD = 40.3 vs.  $M = 310.8$ , SD = 45.8  $t(258) = 2.9$ ,  $p < 0.01$ , Cohen's  $D = 0.35$ ) and Mathematics (EP:  $M = 372.3$ , SD = 55.1 vs.  $M = 325.5$ , SD = 65.3,  $t(204) = 4.8$ ,  $p < 0.001$ , Cohen's  $D = .77$ ; ELL:  $M = 336.4$ , SD = 61.5 vs.  $M = 303.9$ , SD = 49.3  $t(256) = 4.5$ ,  $p < 0.001$ , Cohen's  $D = 0.58$ ).

The findings of this study suggested that even in segregated low SES educational settings, dual language instruction helps Hispanic EP and ELL students perform at higher levels on the CST when compared to mainstream EP and ELL peers. The schools in this study were at least 80% Hispanic, so the comparison was to students in similar demographic schools. A stronger indicator of the benefits of dual language instruction on student achievement and closing the gap would be to compare the achievement of bilingual Hispanic students to White English only speaking students. It is not clear if that comparison was made in this study.

### **Transition Interventions**

For many middle school students transitioning is seamless. However, for some it is quite difficult. Hodgson's (2006) dissertation research examined the social aspects of the elementary to middle school transition. The review of the literature identified contradictions in the current research as well as inconsistencies in conception and methodology of transition research.

The study addressed the inconsistencies and contradictions in transition research by looking at several social aspects of students and their teachers during the elementary to middle school transition. Over 900 fifth and sixth graders participated in the study. The intent was to get a better understanding of the sophisticated social relationships that

develop early on in middle school. The results of this study indicated that social constructs diverged at transition for boys and remained constant for girls. Aggression was found to be negatively correlated with social preference and positively correlated with social prominence. The findings of the research were intended to support the development and use of social interventions at the beginning of middle school.

In order to combat the multitude of complex factors involved in transitioning from elementary to middle school, many schools have become creative in dealing with the low achievement phenomena associated with it. When ELL students are considered, these programs must also include strategies that will specifically address their language needs.

At a middle school in New Rochelle, NY, administrators and teachers were concerned with the transition difficulties that many sixth graders faced. They developed a three-phased approach to easing the transition from elementary school to middle school. It included a 5th grade visit, orientations, a summer academy for struggling students, and mini workshops at the start of the school year. The workshops focused on strategies that should ease their transition into middle school (George, Breslin, & Evans, 2007).

The summer academy at the New York middle school was for students needing extra support. Their standardized test scores drove the student selection process. Participation in the summer academy was voluntary. Students were invited, but not required to attend. The instructional model that was used included a balanced literacy approach, as the teachers used whole group, small groups, and independent work to deliver instruction (George et al., 2007).

One powerful transition strategy was to have incoming sixth graders listen to current sixth graders tell about their first-year middle school experience. This was

proven very successful over the years, and many students walked away feeling confident about starting sixth grade. The parents reported feeling confident about their children starting middle school (George et al., 2007). Other strategies that were used or suggested included, providing students with their schedules ahead of time, providing tours so that they may walk the campus and locate their classes prior to the start of school, and establishing a buddy system (Shoffner & Williamson, 2005).

Other districts across the nation have taken a different approach to addressing the middle school transition phenomenon. Instead of developing a transition program, school districts in Milwaukee, Baltimore, and Philadelphia have adopted a K-8 school model (Yecke, 2006). Their goal was to increase academic achievement, create an environment that promotes learning, and pull middle grades education out of the stronghold of the middle school concept (Chaker, 2005). Each one of these districts conducted a K-8 study, all were longitudinal, and all of them found that students who were in the K-8 school outperformed their elementary-to-middle school counterparts on standardized achievement test.

In a large-scale empirical study by Byrnes & Ruby (2007) a comparison of Philadelphia's K-8 and middle schools was made in order to determine the affect on student achievement. A sample of 40,833 eighth grades from 95 schools and 5 cohorts were examined over a period of five years. Using a multilevel model, the outcome measure for the study was the eighth grade state assessment (the Pennsylvania State System of Assessment or PSSA). The metric used was normal cure equivalents (NCE). Fifth grade scores were also included as a control for their prior achievement level. A dichotomous variable was used for gender, while dummy coding was used for ethnicity,

ESE and ELL status. There were also measures for teacher qualities, school size, school structure, and school transition.

The findings showed that older K-8 schools had significantly higher levels of achievement in both fifth and eighth grade on the math and reading PSSA over middle schools, more than 8 NCE (math:  $\beta = 8.55$ ,  $t^* = 5.89$ ,  $p < .000$ ; reading:  $\beta = 8.23$ ,  $t^* = 5.70$ ,  $p < .000$ ). Newly established K-8 schools did not show any significant differences. However, adding prior achievement results in measure of (math:  $\beta = 3.60$ ,  $t^* = 5.12$ ,  $p < .000$ ; reading:  $\beta = 3.97$ ,  $t^* = 6.24$ ,  $p < .000$ ) established achievement differences in the fifth grade that were over 3 NCE. Student demographic data were significant for all variables except ethnicity. On average, female, Hispanic and Asian students all scored significantly higher than Black and male students (Byrnes & Ruby, 2007).

The study conducted by Byrnes & Ruby is very thorough. It considers not just K-8 schools when comparing them to middle schools, but also if they have been established for some time. Variables for teachers, students, the school, and transition, were also included in this multilevel model. By controlling for these variables, the authors were able to get a complete and accurate account of how student achievement was affected by attending or not attending a K-8 school. Although older established K-8 schools and their students outperformed middle schools, it should be noted that those schools enrolled significantly more White and Asian students thus skewing the generalizability of the data.

**Alternative Scheduling.** One of main characteristics of middle school that is in stark contrast to elementary school is the schedule. Students in an elementary school are

used to having one teacher teach them their core subjects. In middle school, the students move between four different teachers to receive their core instruction. In addition to the four core-subject area teachers, students will have a teacher for P.E, and at least one elective teacher.

There are several variations of the block schedule; the most common type of block scheduling found in U.S. schools is the 4x4-semester plan where students have four 90 minute classes that meet daily for one semester and receive a years worth of instruction (Lewis, Dugan, Winokur, & Cobb, 2005). More than half of the successful Latino middle schools studied by Jesse et al. (2004) used a block schedule, or a modified form of it. Students gained a greater depth of knowledge, and scored higher on achievement test than students on the traditional middle school schedule (Reid, 2000). Grimwood (2000) espouses that block scheduling helped to improve the grades of ELL students by allowing them more time to practice new language constructions and engage in longer periods of sustained silent reading.

In a study of the impact of block scheduling on student achievement, (Lewis, Dugan, Winokur, & Cobb, 2005) matched 355 student scores from ninth and 11<sup>th</sup> grade standardized test and compared the effect of 4x4 block scheduling to traditional scheduling and alternate day A/B block scheduling on student gain scores. The study was an ex post facto longitudinal design conducted over three years. A 3x2x2 factorial ANOVA was used to measure the main effect of scheduling, gender, and ethnicity. The unit of measure was the Colorado School Accountability Reports (CASP) and the mean reading and math ACT score.

Lewis et al. (2005) found that the 4x4 schedule produced significant achievement gains when it was compared to a traditional or A/B block schedule. Students that attended school on the 4x4 schedule outperformed their traditional schedule counterparts on the CASP ( $d = -.0.11$  in reading and math  $d = -.0.09$ ) in reading, with a very large effect size ( $d = 1.93$ ) and math ( $d = .19$ ) as well as the ACT test. Main and interaction effects were also tested for attribute variables. There was not a statistically significant difference for gain scores in math, however in reading, there was a significant difference in gain scores for each independent variable and significant main effects for the type of schedule  $F(2, 310) = 53.931, p < 0.021$  and ethnicity  $F(1, 310) = 15.408, p < 0.001$ . The study also found that teachers appreciated the flexibility in classroom instruction, longer planning periods, greater course offerings, and more time for in-depth study that the 4x4-block schedule provides.

While the results of the study suggested that students that attended school on a block schedule outperformed their traditional schedule counterparts, it is not conclusive. The gains were moderate, and only indicated gains in reading. Additionally, the minority representation in the study was small and not consistent with the demographics that would be found in schools that serve large numbers of Hispanic or other minority students.

As many as 50% of American high schools have tried some form of block scheduling. Many school districts throughout the country have documented measurable student gains in academics (Gullatt, 2006). School leaders have responded to national, state and local reform mandates by adopting a block schedule (Gullatt, 2006). The reasons for choosing the block schedule include fewer school-wide discipline problems,

higher student achievement, more time for teachers to plan, better teaching strategies, reduced fragmentation, and greater productivity from students (Canady & Rettig, 2000; Howard, 2000). Block schedules can ease the transition from the homelike atmosphere of elementary school to the departmentalized world of secondary education. It reduces the need for constant class changes, and the number of classes attended on a daily basis (Mowen & Mowen, 2004). The block schedule can also be used to vary time for those that need extended instructional time.

**Varied Instructional Strategies.** Besides scheduling, other issues that may impede the successful transition to middle school are the methods and strategies that teachers use to deliver the curriculum. Elementary schools tend to be task oriented; middle schools on the other hand are more performance oriented (Alspaugh, 1998). Middle schools tend to have more students for shorter periods; hence, the student-teacher relationship changes (Feldlaufer, Midgley, & Eccles, 1988).

Effective instruction for 12 year olds appears different than it does for eight year-olds. Combining the need for effective instruction with the developmental needs of a typical middle school student and you will quickly discover that it takes special skill to teach and motivate them (Wormeli, 2006). Differentiated instruction is a strategy teachers use to address the multifaceted needs of adolescents as they migrate through the first year of middle school. “Teachers who differentiate instruction simply do what is fair for students, when regular instruction does not meet their needs” (Wormeli, 2006, p. 14).

Wormeli (2006) stated that adolescents crave seven conditions: competence, achievement, opportunities for self-definition, creative expression, physical activity, positive social interactions with adults and peers, structure and clear limits, and

meaningful participation in family, school and community. In addition, teachers could meet those needs by utilizing five principles that centered on differentiated instruction. The strategies included teaching to the developmental needs of the student; treating academic struggles as strength; providing multiple pathways to standards; giving formative feedback, and daring to be unconventional.

In a study conducted by Castle, Baker-Deniz, and Tortora (2005) flexible grouping was used as an organizational strategy to address a broad range of student needs. The five-year study focused on 133 non-transient students in grades 2 through 6 in a high need school similar to those that many Hispanic students attend. The researchers collected data on student learning, the use of flexible grouping, and the contribution of flexible grouping. To measure student learning, progress was calculated for the reading and writing test. To determine the level of use of flexible grouping, lesson plan interviews were conducted. Additionally, teacher interviews were conducted to determine the contributions of flexible grouping. Both were coded and analyzed.

The results indicated that students increased their mastery on standardized test, qualitative reading inventories, and writing over the five years that were studied, with gains as high as 19% in reading, and 27% in writing. Teachers increased their use of flexible grouping from 25% in the first year, to 95% in year five. They also reported that students' confidence was higher and their understanding of the task required of them improved as well. Student gains were contributed to focused instruction and the teachers' ability to keep students on task (Castle et al., 2005).

While this study indicated flexible grouping resulted in learning gains, the research is very limited, and more in depth research is still needed. Additionally, teachers



would have to be appropriately trained in the set up and use of this type of grouping. Moreover, this study was conducted at a small urban elementary school; it is not certain how flexible grouping would work in a similar demographic middle school.

**ELL accommodations.** Accommodations are defined as “support provided students for a given testing or learning event either through modification of the material or procedures. These strategies and modifications help students access the content in English and better demonstrate what they know” (Butler & Stevens, 1997, p. 5). They are an integral piece of equalizing the learning process for ELL students.

Accommodations can be classified in four distinct categories; timing/scheduling, setting, presentation, and response (Coltrane, 2002; Menken, 2000). The most commonly used accommodations are giving extra time and providing a smaller setting. They are easy to do, have no financial consequences, and do not require any changes to the test.

The most effective accommodations are presentation and response. Presentation accommodations permit repetition, explanation, and translation to home language. Response accommodations allow students to dictate their answers and to respond in their home language . Both of these accommodations directly address ELL’s language needs, and may increase the chances that the learners will be able to demonstrate their knowledge and improve their achievement (Coltrane, 2002; Menken, 2000).

A qualitative study by Jia, Eslami, and Burlbaw (2006) analyzed teachers’ perceptions of classroom-based reading assessments. Convenience sampling was used to select the study participants. A total of 13 teachers (six middle school and seven elementary) from nine schools in four districts participated in the study. Data were

collected through interviews, observations, and analysis of teacher assessment materials and analyzed using the constant comparative method.

It was found that the classroom teacher could improve ELL student achievement by using teacher made classroom assessments. The assessments had greater impact on instruction and student learning than formal standardized tests. Teachers were also able to receive an instant measure of student progress and achievement. Furthermore, ELL students benefited from the classroom assessments, because they allowed the teacher to integrate multiple learning modalities related to language acquisition. They also provided the teacher with information about the student's strengths and weaknesses and helped guide instruction. In addition, the teacher was able to consider the needs and abilities of the student (Jia et al., 2006).

The findings of this study suggested that teacher-made classroom assessments were a better method of assessing an ELL student's progress and achievement. They allowed the teachers to make decisions about instruction and student placement. While the study gave great insight into what teachers needed in order to help their language challenged ELL students be successful, it did not report on or measure how instruction based on the results of the teacher-made assessments affected the student's ability to perform on mandated state assessments.

Beyond making their own assessments, teachers can employ additional instructional strategies that will assist them in accurately measuring student progress. August, Francis, Hsu, and Snow (2006) conducted three pilot studies of ELL students to determine if the Diagnostic Assessment of Reading Comprehension (DARC) was a valid measure. The first study consisted of 16 second through fourth grade ELL students. The

second study included 28 native Spanish-speaking 4th graders. The third study included 528 Spanish-speaking students in kindergarten through grade 3. They found that the DARC is feasible to use with students as young as kindergarten, different aspects of comprehension can be measured independently by using simpler decoding, syntax and vocabulary. They also found that students who scored poorly on the Stanford-9 or Woodcock Language Proficiency Battery performed well on the DARC.

The findings of this study suggested that the DARC would be a viable alternative to the Woodcock Language Proficiency Battery. The results of the pilot studies indicated that some ELL students performed well and others did not, thus eliminating the potential of bias based on language skills. The internal consistency (Cronbach's Alpha) of the DARC ranged from .41 to .54 in English and .21 to .50 in Spanish, indicating that additional work is needed to have a totally reliable assessment instrument.

Teachers who are bilingual, use their home language as a strategy to assist their Spanish-speaking students with the learning process. This gives the student more opportunities to demonstrate content mastery. They also focused on grading ELL students on what they can do rather than what they cannot. Consideration was given to past learning as well as current performance on assessments. Any progress the students made, they received credit.

## **Summary**

A thorough examination of the literature about elementary to middle school transition suggests that this is a monumental event in the life of an early adolescent. Not only are they leaving the secure, nurturing environment of elementary school, but they

are also embarking on a journey into the vast and largely unknown world of middle school. The anxieties they face include getting, to class on time, finding their lockers, as well as knowing all the rules (Elias, 2000).

Alspaugh (1998) suggested that students transitioning from fifth to sixth grade suffer a significant achievement loss. Students that transition from several elementary schools into one middle school experience the largest achievement loss when compared to students that attend K-8 schools. Although the transition alone is responsible for most of the achievement loss, the literature indicates that the school environment is responsible as well. In addition, the classroom emphasis on performance rather than mastery is also a mitigating factor.

There is limited amount of literature on how elementary to middle school transition affects Hispanic students specifically, but the literature does suggest that Hispanic students perform well below their Anglo counterparts (Jesse et al., 2004; Waxman, Huang, & Padron, 1997). It also indicates that Hispanic students perceive the transition to middle school to be much harder than their African-American and White counterparts do (Akos & Galassi, 2004b).

Quite often service for the Hispanic student's home language is not available, and recent policy changes have rescinded many of the laws that supported bilingual education (NCLB, 2001). Even in states with high Hispanic populations such as, Texas, bilingual instruction is not offered after 6th grade Furthermore, states like California, Arizona, and Florida have proclaimed English as their official language (Jesse et al., 2005; Kramer et al., 2005; Lee, 2006). Although decades of laws and legislation have been written, court ordered remedies have not closed the achievement gap for ELL students.

The literature revealed that many school districts have turned to transition programs to help ease the anxiety of middle school transition and improve student achievement. Other districts have taken a more aggressive approach to the remedy and have developed K-8 schools that eliminate the transition altogether. Early research shows that this is a viable option for improving the academic achievement of students in the middle grades; however, it does not state specifically how K-8 schools affect the achievement of Hispanic students.

Besides transition programs, the literature indicates that block scheduling can also improve the achievement of students transitioning to middle school. The most successful Hispanic middle schools use some form of block schedule (Jesse et al., 2004). Block schedules reduce the number of times classes change and allows ELL students more time to work on language constructs (Grimwood, 2000; Mowen & Mowen, 2004).

What was absent from the literature were specific studies on how Hispanics, Latinos, or ELL's deal with the transition to middle school. There was an abundance of information on how it affects the majority, but few studies had taken the time to either analyze data or conduct interviews to determine the impact middle school transition is having on the rapidly increasing Hispanic population. The lack of current research warranted study on the effectiveness of court ordered bilingual programs and how they affect the academic achievement of ELL students as they transition to middle school.

## **Conclusion**

The transition from elementary school to middle school negatively affects some students. They experience losses in achievement, motivation, and cognition. There is not

one single aspect of middle school that is responsible for this; however, there are several aspects of middle school that confound the notion of transition. This includes the school overall as well as the classroom.

The school environment plays a tremendous role in the negative outcomes associated with the transition to middle school (Eccles, et al., 1993a). Many middle school classrooms are focused on how well students can perform on the tasks they are assigned. If students perceive that the focus of the class is on performance, they are more likely to experience declines in achievement, motivation, and self-efficacy (Anderman & Midgley, 1997; Urda & Midgley, 2003).

Besides the school and classroom environment, students must also deal with the physiological and psychological changes associated with puberty and adolescence (Eccles & Wigfield, 1997). They desire more autonomy, decision making, and are concerned about identity and acceptance. They are able to engage in more advance cognitive activities, but typically, the work for first-year middle school students is less challenging than what they had in elementary school. They are victims of a “mismatch” in their needs and the provisions of the school environment (Eccles et al. 1993a).

The intent of this study was to conduct quantitative research on all Pinellas County Schools Hispanic students as they transitioned from fifth to sixth grade. Archival FCAT reading and math scores were analyzed to determine if gains or losses in academic achievement occurred during the transition to middle school. Students must be enrolled in fifth grade and be promoted to sixth grade to qualify for the sample. They must also take the FCAT reading and math in both grades. A correlational analysis was used to determine if there was a relationship between the independent variables ELL status, SES,

gender, and previous test score and the dependent variables FCAT reading and math DSS scores as students transitioned to middle school.

Chapter 3 will reintroduce the problem being investigated; give a brief overview of the chapter, and a detailed description of the population being sampled. The research questions and the hypothesis that guided the study are also presented in this chapter. The research design, data collection and analysis, testing and assumption along with a summary conclude the chapter.

## **Chapter III**

### **Method**

#### **Introduction**

The purpose of this chapter is to describe the research method employed to determine how the transition to middle school effected the achievement of Hispanic students. Through the use of descriptive statistics and regression analysis, sixth grade reading and math developmental scale scores (DSS) were analyzed to determine if the mean achievement improved or declined after the transition to middle school.

Developmental scale scores are used by the FLDOE to determine if students make annual learning gains. The FCAT reading and math DSS was treated as the dependent variable, and ELL status, SES, gender, and fifth grade FCAT reading and math DSS were included as the independent variables. In addition to a description of the method, this chapter describes the population being sampled, the research questions and the variables being measured. This chapter also includes a detailed description of the research design, data collection and analysis, and testing the underlying statistical assumptions. The chapter concludes with a brief summary.



## **Population and Sample**

There are more than 909,000 people in Pinellas County; of those, 67,266 (7.4%) are Hispanic (Census, 2009). In addition, Pinellas County has approximately 103,000 students enrolled in public school. Sixty-two percent are White, 19% Black, 9% Hispanic, 4% Asian, 5% Multiracial, and .3% Native American. The school district consists of 130 schools and centers. Seventy-four are elementary, 21 middle, and 17 high schools. There are also five exceptional centers, a secondary discipline school, as well as 12 charter schools (Pinellas County Schools, 2008). There are more than 66,000 students in grades K-8.

A purposeful sampling procedure was used to select Hispanic students from more than 6,100 students that were enrolled in sixth grade during the 2008-2009 school year. This type of sampling selects information rich cases for in depth study based on certain criteria. All students that were enrolled as fifth graders during the 2007-2008 school year, and had corresponding FCAT reading and math DSS for both 2007-2008 and 2008-2009 were included in the sample ( $n = 615$ ).

Prior to data collection, an a priori power analysis was conducted to determine the sample size needed for a study to have adequate statistical power. Cohen's power primer tables indicated that a sample of at least 138 was needed for a medium effect (.15) at  $\alpha = .05$ . Statistical power is the probability of rejecting the null hypothesis when it is false. It is dependent upon sample size, the established nominal alpha level, and anticipated effect size (Stevens, 2007). When sample sizes are large, power will generally not be an issue (Stevens, 2007, p. 107). As the sample size increases, so does statistical power, thus reducing the probability of committing a Type I or Type II error (Glass & Hopkins,

1996). Prior to conducting any of the inferential statistical analyses, an a priori power analysis was conducted to determine the sample size needed for adequate power (.80), with a medium effect size (.15), and a  $\alpha$  level of .05. Power should be established at minimum of .80 to reasonably detect a departure from the null hypothesis (Baldwin & Ferron, 2006; Glass & Hopkins, 1996; Stevens, 2007). As the size of the sample increases (all other things being equal), statistical power increases and the probability of making a Type I or Type II error is decreased (Stevens, 2007, p. 118). Alpha ( $\alpha$ ) is the probability associated with committing a Type I error; that is rejecting a true null hypothesis, whereas Beta ( $\beta$ ) is the probability associated with committing a Type II error, or failing to reject the null hypothesis when it is false. Using *Cohen's Power Primer* tables, the necessary sample size for a four variable multiple regression model was determined to be 138. The sample size in this study ( $N = 615$ ) was large enough to provide adequate power for all inferential tests.

### **Research Questions**

In order to evaluate the theoretical model introduced in chapter one, the following questions were developed from a review of the literature and guided this study.

#### **Research questions for reading.**

1. Does the mean FCAT reading DSS of Hispanic students decline when they transition to middle school?
2. What relationships exist between Hispanic students' sixth grade FCAT reading DSS and their ELL status, SES, gender, and fifth grade FCAT reading DSS?

### **Research questions for math.**

1. Does the mean FCAT math DSS of Hispanic students decline when they transition to middle school?
2. What relationships exist between Hispanic students' sixth grade FCAT math DSS and their ELL status, SES, gender, and fifth grade FCAT math DSS?

### **Independent and Dependent Variables**

The independent and dependent variables for this study were selected based on models from previous research that was reviewed in the literature.

**Independent.** The four independent variables examined in this study were ELL status, SES, gender, and fifth grade FCAT reading and math DSS. Each variable was selected because of its prominence in the studies and their natural occurrence. ELL status, SES, and gender are all nominal variables.

The independent variable ELL Status was dichotomized from seven categories that the state of Florida uses to identify the ELL status of students. By doing so it identifies Hispanic students that at one time or another received language services as well as those that did not. The variable SES was derived from self-reporting of eligibility for free and reduced meals. All students, regardless of their eligibility for free or reduced meals were included in the sample. Gender identified students in the study as male or female. The fifth grade FCAT reading and math DSS represented the prior year developmental scale score for the FCAT.

**Dependent.** The dependent variables in this study were Reading and Math achievement measured using the FCAT DSS.

The FCAT is part of Florida's overall plan to increase student achievement by implementing higher standards. The FCAT, administered to all public school students in grades 3-10, consist of criterion-referenced test, (CRT) measuring selected benchmarks in reading, mathematics, writing, and science from the Sunshine State Standards. It is a standardized achievement test that uses achievement levels, scale scores, and developmental scale scores (DSS) to measure student achievement reading, mathematics, writing, and science (Florida Department of Education, 2010).

The developmental scale score (DSS) is specifically used to determine if students have made learning gains from one year to the next. They are linked to the scale scores and converted to developmental scale scores that range from 0 to 3008. These scores allow the progress of students to be monitored from one year to the next. In order to make annual learning gains, students must increase their DSS by 133 points for reading and 95 points for math when they transition to middle school (Florida Department of Education, 2010). Table 10 displays FCAT reading achievement levels for grades 3-10 and the range of developmental scale scores that corresponds with each level (Florida Department of Education, 2004).

Table 10

*FCAT Reading Developmental Scale Scores*

Grade	Level 1	Level 2	Level 3	Level 4	Level 5
3	86-1045	1046-1197	1198-1498	1489-1865	1866-2514
4	295-1314	1315-1445	1456-1689	1690-1964	1965-2638
5	474-1241	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

Source: FLDOE, 2008

Internal consistency estimates representing the reliability for the FCAT is reported by the FLDOE using Cronbach’s Alpha. This is a coefficient estimate that is reported for the FCAT-Sunshine State Standards (SSS) and for the FCAT-norm referenced test (NRT) as a KR-20. It is used as an estimate of the inferences based on the reliability of test scores from a single test and measure internal consistency. The higher the coefficient is, the more internal consistency and stability of the inferences that are made from a set of scores over time (Florida Department of Education, 2007). In most areas of social science research, a coefficient of .70 or higher is acceptable (UCLA, 2009). The 2006 reading FCAT had a coefficient of .87 for the fifth grade and .89 for the sixth grade. Likewise, the 2006 math FCAT had a coefficient of .92 for fifth grade and .87 for sixth grade (Florida Department of Education, 2007). Table 11 displays the coefficient estimates for the FCAT reading and math.

Table 11

*Classical Reliability of FCAT*

	<u>Reading</u>				<u>Mathematics</u>			
	Cronbach's Alpha – SSS			KR-20	Cronbach's Alpha - SSS			KR-20
	2005	2006	2005 NRT	2006 NRT <sup>1</sup>	2005	2006	2005 NRT	2006 NRT <sup>1</sup>
3	.89	.89	.92	.92	.89	.90	.92	.92
4	.86	.85	.90	.91	.88	.88	.90	.91
5	.86	.87	.90	.90	.92	.92	.91	.91
6	.90	.89	.89	.90	.91	.87	.91	.91
7	.90	.90	.90	.91	.91	.86	.91	.93
8	.88	.85	.92	.90	.93	.89	.90	.93
9	.89	.90	.92	.92	.92	.85	.90	.91
10	.89	.85	.92	.91	.94	.88	.87	.90

Source FLDOE, 2007

Note: KR-20 data are found in the technical materials for the Stanford 9, published by Harcourt Educational Measurement.

To provide evidence of the validity of the inferences based on the scores on the FCAT, the Florida Department of Education has implemented more than nine checks and balances. They include but are not limited standards judged by educators and citizens, as well as field-testing of the test items. Evidence of concurrent validity was presented using the criterion-related coefficients in Table 12. Estimating the correlation between the FCAT and the Stanford-9 derived the coefficients that are administered yearly at approximately the same time (Florida Department of Education, 2007).

Concurrent validity is the comparison of test results with external criteria that is obtained at the same time as the administration of the test. It is more relevant for the FCAT than predictive validity and is examined through correlations of the criterion-referenced portion of the FCAT and the normed referenced portion of the *Stanford-9*. The correlation estimate for the 2006 fifth grade FCAT was .83 for reading and .84 for

math. The correlation estimate for the 2006 sixth grade FCAT was .83 for reading and .83 for math.

Table 12

*Correlation between the FCAT and the Stanford-9*

	Reading			Mathematics		
	2004	2005	2006	2004	2005	2006
3	.83	.83	.84	.85	.85	.84
4	.80	.78	.83	.79	.82	.82
5	.82	.80	.83	.83	.83	.84
6	.82	.83	.83	.84	.82	.83
7	.83	.83	.83	.84	.82	.83
8	.82	.82	.82	.83	.83	.84
9	.81	.82	.79	.81	.81	.83
10	.78	.80	.80	.76	.72	.76

Source FLDOE, 2007

**Research Design**

Variables must be observed and measured before they can be examined statistically. A correlational design was used to determine if there was a relationship between the dependent variables FCAT reading and math DSS and the independent variables ELL status, SES, gender, and fifth grade FCAT reading and math DSS. This method is appropriate when examining relationships among variables.

The FCAT reading and math DSS were used in an analysis to determine if there was a decline in achievement as students transitioned to middle school. Because this study was also concerned with how well ELL status, SES, gender, and fifth grade FCAT reading and math DSS predicted the sixth grade reading and math DSS; multiple regression analysis was used.

This method of analysis was consistent with Alspaugh's (1998) study that used the Missouri Mastery and Achievement Test (MMAT) as the dependent variable for

measuring student achievement. Alspaugh's study also examined across subjects in reading, math, science, and social studies using the MMAT, which was consistent with how the FCAT DSS was examined in this study.

### **Data Collection and Instrumentation**

Archival data for the 2007-2008 and 2008-2009 school year was collected from the school district's student information system (Portal). It is a product of FOCUS/SIS, a multifunction student information system that provides solutions for scheduling, teacher record keeping, student demographics and discipline, guidance services, transcripts, and many other school related functions. Prior to collecting the data and conducting the study, several agency permissions were obtained. Before any study/research can be conducted, the Institutional Review Board (IRB) must provide approval. However, because this study only analyzed archival data, an IRB Exemption was requested and approved. Any person that attempts to conduct research within the school district must also apply to the research and accountability department and be granted permission, much like the IRB process.

After receiving all approvals, the data were emailed to the researcher as an Excel spreadsheet. It contained data for all students enrolled in the sixth grade for the 2008-2009 school year (approximately 6120 students). The data were then sorted by ethnicity and ELL status to identify all Hispanic ELL students. The spreadsheet also included data on SES, and gender and included additional data for grades 3, 4, and 7 as well. Only students who were enrolled in the school district in fifth grade in 2007-2008 and sixth



grade in 2008-2009 were included in the analyses. The cohort consisted of students that had complete FCAT reading and math data for both years.

### **Data Analysis**

The analysis of quantitative data involves the use of statistical methods to answer a research question or support a research hypothesis. The methods used in this study aligned with those used in previous studies by Alpsaugh (1998), Simmons et al. (1987), and Whitney et al. (2007). They involved the use of descriptive statistics and multiple regressions analysis.

After the data were collected and properly sorted, descriptive statistics were computed to determine if the mean FCAT reading and math DSS increased or decreased after the transition to middle school. The descriptive statistics included the mean, standard deviation, sum, minimum, and maximum scores.

Multiple regression is the statistical method most commonly employed for predicting  $Y$  from two or more variables . . . “The purpose of multiple regression is to predict variable  $Y$  with maximal accuracy, from a linear combination of  $m$  independent variables  $X_1, X_2, \dots, X_m$ ” (Glass & Hopkins, 1996, p.170). A standardized regression coefficient was computed by placing these variables into the linear equation:

$Y_{GR6RdgDSS} = \beta_0 + \beta_1(X_1) + \beta_2(X_2) + \beta_3(X_3) + \beta_4(X_4) + e$ . Where  $X_1$  is ELL status,  $X_2$  is SES,  $X_3$  is gender, and  $X_4$  is fifth grade FCAT reading DSS, and  $e$  is the residual or deviation of the dependent variable observations from the fitted function

A separate regression analysis for math was conducted using a similar equation:

$Y_{GR6MthDSS} = \beta_0 + \beta_1(X_1) + \beta_2(X_2) + \beta_3(X_3) + \beta_4(X_4) + e$ . Where  $X_1$  is ELL status,  $X_2$  is SES,  $X_3$  is gender, and  $X_4$  is fifth grade FCAT math DSS, and  $e$  is the residual or deviation of the dependent variable observations from the fitted function

The data analysis was conducted using SAS 9.2 statistical software.

### **Inferential Statistical Analyses**

A multiple regression analysis was conducted to determine if a relationship existed between the independent variables: ELL status, SES, gender, and fifth grade FCAT reading and math DSS and the dependent variables: FCAT reading and math DSS.

**Assumptions.** Statistical assumptions are fundamental underlying conditions that must be true in order for statistical models to accurately reflect reality. Therefore, the assumptions must be tested in order to determine if they have been violated. Violation of certain statistical assumptions can result in model errors that grossly misrepresent the data. For the purposes of this study, the following underlying statistical assumptions were examined:

1. Independence of observations
2. Independence of errors
3. Normal distribution of errors
4. Linearity
5. Homoscedacity
6. Multicollinearity
7. Model Specification
8. Measurement Error.

Each assumption was defined, tested, and an explanation of the impact of violation of the assumption was presented.

***Independence of observations.*** It is assumed that the values of the outcome variable are independent of one another; that they are not paired or correlated (Field, 2009; Glass & Hopkins, 1996). Based on the design of the study, this assumption was met.

***Independence of error.*** It was assumed that the errors or residual are independent, that serial correlation does not exist. To validate that the independence assumption was met, the Durbin-Watson test was conducted. It provides a statistic that ranges from 0 to 4 that test for significant residual autocorrelation. A value near two is indicative of independence. Many statistical tests are not robust to violations of independence, “even a small violation of it produces a substantial effect on both the level of significance and the power of the  $F$  statistic” (Stevens, 2007, p. 59). Therefore, this assumption can never be violated.

***Normal distribution of errors.*** It was assumed that the residuals in the regression models were random and normally distributed. A stem-and-leaf plot was used to verify the normal distribution of residuals for the sixth grade FCAT reading and math DSS. Multiple regression analysis (specifically the  $F$  test) is generally robust to violations of the normality assumption (Field, 2009).

***Linearity.*** It was assumed that the relationships being modeled were linear. Multiple regression procedures are not greatly affected by minor violations of the assumption of linearity, however, it is best to examine a “plot graph” to confirm linearity (Cody & Smith, 2006). Serious violations of the assumption of linearity may result in

Type I and Type II errors. However, they will not invalidate the analysis. Non-linearity can be adjusted using a polynomial model to validate linearity (Cody & Smith, 2006).

***Homogeneity of variance--Homoscedacity.*** The multiple regression model assumes that the variance between the variables is homogeneous. Specifically, the variance of one variable should be stable at all levels of other variables (Field, 2009). This assumption was validated using White's test and a visual inspection of a scatter plot of the residual against the predicted values. White's test measures the constancy of variable variance by testing the null hypothesis that the variances are homogeneous. Violations of this assumption may result in variances that are heteroscedastic and increase the chance of making a Type I error (Stevens, 2007).

***Multicollinearity.*** Multicollinearity exists when there is a strong correlation between two or more variables in the regression model. The assumption of multicollinearity was tested with the variance inflation factor (VIF) test and a correlation matrix. This VIF statistic determines if a predictor variable has a strong linear relationship with another predictor variable (Field, 2009). A large VIF is cause to be concerned and values higher than 10 require a thorough investigation (Cody & Smith, 2006, p. 300). A strong correlation between two or more predictor variables suggests that multicollinearity exist. Violations of multicollinearity make it difficult to assess the individual importance of the predictor variables.

***Model Specification.*** Model specification refers to selecting the appropriate independent variables to include or exclude from the regression equation. An error in specification occurs when one or more of the independent variables are correlated with the error term. In order to detect specification error and determine if the appropriate

independent variables were included in the regression model, an analysis of the critical  $F$  value/ratio was conducted. The  $F$  value/ratio is the test statistic used to determine if the model has statistically significant predictive capability under the null hypothesis that the model has no predictive capability. It “is a measure of how much the model improved the prediction of the outcome compared to the level of inaccuracy in the model” (Field, 2009, p. 203). The null hypothesis is rejected if the  $F$  value/ratio is large.

**Measurement Error.** There will always be some degree of measurement error among the predictors in the regression equation. Measurement error is the discrepancy between the representative number of the predictor and the actual value of the predictor (Field, 2009). The independent variables fifth grade FCAT reading and math DSS were analyzed for measurement error by the FLDOE using Cronbach’s Alpha. These measures rely on a coefficient to determine the level of consistency, stability, and reliability of scores. A coefficient of .70 or higher is acceptable in most social science research (UCLA, 2009). The independent variable ELL status is an indicator of language services received by students that speak English as a second language. The Language Assessment Scales (LAS), a language assessment used by the FLDOE to identify, place, and reclassify ELL students, determined services. Eligibility for free/reduced meals (SES) is self-reported or indirect measure and may be subject to some degree of human error and misrepresentation, thereby increasing the chance of measurement error for this variable. The independent variable gender naturally occurs, and is not easily influenced by other factors, thereby minimizing measurement error, however, it is self-reported and could be subject to data entry or compilation error.

***Outliers and influential observations.*** Influential points or outliers must also be accounted for in multiple regression analysis. An outlier is a single point that can influence the predictive results of the equation. The influence of outliers was assessed using studentized residuals, Cooks' *D*, and DFBeta statistics. Cook's *D* identifies outlying and influential observations using a statistical estimate. An individual observation with a *D* statistic greater than one could be influential and should be considered for removal (Cook & Weisberg, 1982).

Studentized residuals are error values fitted to a normal distribution using standardized *z*-scores. Approximately 95% within +/- 1.96 standard deviations 99% fall within +/- 2.58 standard deviations and 99.9% fall within +/- 3.29 standard deviations (Field, 2009, p. 216). Scores larger than three standard deviations are cause for concern, and should be examined closer (Stevens, 2007).

DFBeta values are the difference between a parameter estimated with all observations and estimated with one observation removed. As a standardized measure, an absolute value greater than one indicates a case that could influence the model (Fields, 2009,).

## **Summary**

A detailed description of the method implemented in this study was presented in this chapter. The sampling procedure was introduced, the variables studied were described, and the research questions were presented. Consideration for the appropriate sample size and statistical significance were also discussed in this chapter. The research

design, method of data collection, analysis, and testing the underlying statistical assumptions concluded this chapter.

## **Chapter IV**

### **Results**

This study sought to determine how the transition to middle school affected the achievement of Hispanic students on the sixth grade FCAT reading and math. Specifically, how the achievement of Hispanic students changed as they moved from fifth to sixth grade. The results in this chapter will be presented in five sections: (a) population and sample, (b) descriptive statistics, (c) statistical assumptions (d) regression analysis, and (e) summary of results.

Archival data was collected on Hispanic students who were enrolled in Pinellas County Schools in the fifth grade during the 2007-2008 school year, and the sixth grade during the 2008-2009 school year. The dependent variables for the study were the sixth grade FCAT reading and math developmental scale scores (DSS). The independent or predictor variables were ELL status, SES, gender, and fifth grade FCAT reading and math DSS. The categorical variables ELL status, SES, and gender were dichotomized and dummy coded so they could be properly represented in the regression equation. The seven ELL categories identified if students had received ELL services at sometime or not. The independent variable ELL was collapsed from seven categories to two, representing whether a student did or did not receive services.



## **Population and Sample**

A purposeful sampling procedure was used to select Hispanic students who were enrolled in sixth grade during the 2008-2009 school year. This type of sampling selects information rich cases based on certain criteria. The sample in this study included Hispanic students who were enrolled in Pinellas County Schools during the school years 2007-2008 and 2008-2009 as fifth and sixth graders respectively. Only those students with FCAT reading and math scores for both years ( $n = 615$ ) were included in the sample. The final sample of Hispanic students who met the inclusion criteria was derived from more than 6,100 sixth grade students who were enrolled in Pinellas County Schools during the 2008-2009 school year.

## **Descriptive Statistics**

Approximately 72% of the students in the sample ( $n = 438$ ) were eligible for free/reduced meals (SES). Twenty-eight percent of the students ( $n = 169$ ) were not eligible for free/reduced meals. Thirty-nine percent of the students ( $n = 234$ ) received ELL services, 61% did not ( $n = 373$ ). The sample was equally represented with respect to gender (female  $n = 304$ ; male  $n = 303$ ).

A summary of the descriptive statistics is presented in Table 13 for the total cohort of students in the study. The mean, standard deviation, minimum and maximum score, as well as the number of observations for the FCAT reading and math DSS are presented by grade level. The cohort realized gains in the mean reading DSS ( $M = 1553$ ,  $SD = 294.49$ ;  $M = 1665$ ,  $SD = 294.80$ ) and math ( $M = 1634$ ,  $SD = 233.76$ ;  $M = 1664$ ,  $SD = 246.63$ ), with reading gains (112 points or 7%) being considerably larger than math (30

points or 2%). Although the gains are positive, they did not meet the threshold established by the FLDOE for annual learning gains. Students who transition to middle school (fifth to sixth grade) should increase their DSS by 133 points in reading and 95 points in math to be considered one year of growth.

Table 13

*FCAT Reading and Math Summary Statistics for Testing Cohort*

Variable	N	Reading				Mathematics			
		M	SD	Min	Max	M	SD	Min	Max
FCAT DSS									
5th	605	1553	294.49	474	2355	1634	233.76	569	2456
6th	606	1665	294.80	539	2758	1664	246.63	770	2492

Note: N=Number, M=Mean, SD=Standard deviation, Min=Minimum score, Max=Maximum score.

Table 14 displays the descriptive statistics for fifth and sixth grade FCAT reading and math DSS by subgroup. The mean, standard deviation, minimum and maximum score, as well as the number of observations are presented. These descriptive statistics inform the question; Does the mean FCAT reading and math DSS of Hispanic students decline when they transition to middle school?

The mean DSS for female students identified as low SES and non-ELL, increased five percent for reading ( $M = 1602$ ,  $SD = 239.40$ ;  $M = 1689$ ,  $SD = 237.76$ ) and one percent for math ( $M = 1635$ ,  $SD = 181.49$ ;  $M = 1652$ ,  $SD = 222.77$ ), but fell short of the annual growth threshold. The mean DSS for male students identified as low SES, non-ELL increased 7% for reading ( $M = 1557$ ,  $SD = 275.25$ ;  $M = 1676$ ,  $SD = 265.63$ ) and

2% for math ( $M = 1647$ ,  $SD = 229.08$ ;  $M = 1683$ ,  $SD = 236.04$ ), again falling short of the annual growth threshold.

The mean DSS for low SES, ELL, females increased 7% for reading ( $M = 1483$ ,  $SD = 275.59$ ;  $M = 1593$ ,  $SD = 266.61$ ) and 1% for math ( $M = 1606$ ,  $SD = 207.70$ ;  $M = 1630$ ,  $SD = 224.15$ ), but fell short of the annual growth threshold. The mean DSS for low SES, ELL males increased 10% for reading ( $M = 1403$ ,  $SD = 330.98$ ;  $M = 1551$ ,  $SD = 279.11$ ) and 2% for math ( $M = 1548$ ,  $SD = 302.25$ ;  $M = 1581$ ,  $SD = 276.88$ ). The 148-point gain in reading exceeded the FLDOE threshold for annual learning gains. The mean math score gain did not meet the threshold.

The mean DSS for non-ELL, female students who were not low SES increased 5% for reading ( $M = 1754$ ,  $SD = 227.64$ ;  $M = 1839$ ,  $SD = 214.28$ ) and 3% for math ( $M = 1742$ ,  $SD = 165.88$ ;  $M = 1789$ ,  $SD = 206.28$ ), but fell short of the annual growth threshold. The mean DSS for non-ELL, male students who were not low SES increased 7% for reading ( $M = 1609$ ,  $SD = 265.83$ ;  $M = 1723$ ,  $SD = 276.88$ ) and 1% for math ( $M = 1688$ ,  $SD = 230.97$ ;  $M = 1710$ ,  $SD = 246.29$ ), both fell short of the annual growth threshold.

The mean DSS for female, ELL, students who were not low SES increased 10% for reading ( $M = 1457$ ,  $SD = 230.94$ ;  $M = 1614$ ,  $SD = 103.14$ ) and met the threshold (157 points) for annual growth; however, math ( $M = 1614$ ,  $SD = 138.26$ ;  $M = 1626$ ,  $SD = 213.54$ ) only increased .7% and did not meet the threshold. The mean DSS for male, ELL, students who were not low SES increased 6% for reading ( $M = 1442$ ,  $SD = 396.91$ ;  $M = 1539$ ,  $SD = 349.89$ ) and 3% for math ( $M = 1519$ ,  $SD = 303.70$ ;  $M = 1568$ ,  $SD = 372.91$ ). Both fell short of the annual growth threshold.

Table 14

*Descriptive statistics for FCAT Reading and Math Developmental Scale Score*

Variable	N	M	Reading			M	Mathematics		
			SD	Min	Max		SD	Min	Max
SES, non-ELL, Female									
5th	114	1602	239.40	1078	2355	1635	181.49	1074	1980
6th	114	1689	237.76	1094	2164	1652	222.77	770	2169
SES, non-ELL, Male									
5th	110	1557	275.25	658	2181	1647	229.08	569	2074
6th	110	1676	265.63	977	2259	1683	236.04	770	2492
SES, ELL, Female									
5th	94	1483	275.59	569	2288	1606	207.70	852	2027
6th	94	1593	266.61	539	2148	1630	224.15	770	2255
SES, ELL, Male									
5th	118	1403	330.98	474	2148	1548	302.25	569	2202
6th	118	1551	279.11	911	2247	1581	276.88	770	2212
Non-SES, non-ELL, Female									
5th	83	1754	227.64	1190	2248	1742	165.88	1277	2258
6th	83	1839	214.28	1371	2281	1789	206.28	1058	2492
Non-SES, non-ELL, Male									
5th	65	1609	265.83	978	2209	1688	230.97	975	2456
6th	65	1723	276.88	949	2264	1710	246.29	1080	2195
Non-SES, ELL, Female									
5th	12	1457	230.94	1118	1716	1614	138.26	1390	1862
6th	12	1614	103.14	1421	1770	1626	213.54	1239	1997
Non-SES, ELL, Male									
5th	9	1442	396.91	838	1952	1519	303.70	880	1862
6th	9	1539	349.89	1005	1981	1568	372.91	770	2018

Note Variables are SES=eligible for free or reduced meals. Non-SES=not eligible for free or reduced meals. ELL=English language learner. Non-ELL=non-English language learner. Gender=Female or Male. N=Number, M=Mean, SD=Standard deviation, Min=Minimum score, Max=Maximum score.

Overall, non-ELL Hispanic students' mean sixth grade FCAT reading DSS was 95 points higher for females and 125 points for males. The mean FCAT math DSS was

22 points higher for non-ELL females, and 102 points higher for non-ELL males. For non-SES, non-ELL females, the mean FCAT reading DSS was 225 points higher, and for non-SES, non-ELL males, the mean FCAT reading DSS were 184 points higher.

### **Statistical Assumptions**

Statistical assumptions are fundamental underlying conditions that must be met in order for statistical models to accurately reflect reality. Therefore, the assumptions must be tested in order to determine if they have been violated. Violation of certain statistical assumptions can result in model errors that grossly misrepresent the data. The following underlying statistical assumptions were examined:

1. Independence of observations
2. Independence of errors
3. Normal distribution of errors
4. Linearity
5. Homoscedacity
6. Multicollinearity
7. Model Specification
8. Measurement Error

**Independence of observations.** It is assumed that the values of the outcome variable are independent of one another; that they are not paired or correlated (Glass & Hopkins, 1996; Field, 2009). Based on the design of the study, this assumption was met.

**Independence of error.** The errors or residual terms should be uncorrelated (Field, 2009). To test this assumption, the Durbin-Watson test was conducted. It has a statistical range from one to zero that test for significant residual autocorrelation. The results for the dependent variable FCAT reading was  $D = 1.76$  and  $D = 1.84$  for FCAT math, indicating that the residuals were independent of one another and that the assumption was met.

**Normal distribution of errors.** The distribution of residuals or errors should be random, and normally distributed with a mean of 0 (Field, 2009; Glass & Hopkins, 1996). A visual inspection of the distribution of residuals for the FCAT reading and math DSS confirmed a normal distribution.

**Linearity.** For each increment of the predictor value, there should be a corresponding outcome value that lies along a straight line (Field, 2009). A visual inspection of a scatter plot of the observed versus predicted observations indicated that points were randomly and evenly dispersed and that the assumption of linearity had been met for the continuous independent variables. The independent variables ELL status, SES, and gender are dichotomous nominal variables. They are assigned a value of 1 or 0. If there is a relationship between a variable that is dichotomous and a variable that is not, the relationship must be linear, otherwise it is curvilinear. When both linear and curvilinear relationships exist in a model, the model will capture the linear relationship (Tabachnick & Fidell, 1989). Violations of the linearity assumption, weaken the model analysis, therefore it must not be violated.

**Homogeneity of variance--Homoscedacity.** Residuals should have the same variance at every level of the predictor variables White's test and a scatter plot were used to examine the variance of the residuals. The results of White's test for FCAT reading were a Chi-Square of  $\chi^2(11, N=604) = 13.15, p > .28$  and a Chi-Square of  $\chi^2(12, N=603) = 20.01, p > .07$  for FCAT math. The results were not statistically significant; therefore, the assumption was not violated. A visual inspection of a scatter plot of the residuals versus predicted values indicated that points were randomly and evenly dispersed and that the assumption of homoscedacity was met.

**Multicollinearity.** A strong correlation ( $r > .80$ ) between two or more predictor variables in a multiple regression model suggests that multicollinearity exist. This assumption was tested by computing a correlation matrix and examining the variance inflation factor (VIF). The VIF statistic determines if a predictor variable has a strong linear relationship with another predictor variable. A value higher than 10 is cause to be concerned and requires a thorough investigation (Field, 2009). The correlation matrix in Table 15 indicated the strength and direction of the relationship between the pairs of dependent and independent variables. The strongest relationship existed between fifth grade FCAT reading DSS variable GR5RdgDSS and sixth grade FCAT reading DSS variable GR6RdgDSS ( $r = .80, p < .0001$ ). Statistically significant relationships existed between SES ( $r = .33, p < .0001$ ), GR5RdgDSS ( $r = -.30, p < .0001$ ), GR5MthDSS ( $r = -.20, p < .0001$ ), GR6MthDSS ( $r = -.20, p < .0001$ ), and GR6RdgDSS ( $r = -.27, p < .0001$ ) and ELL. Statistically significant relationships also existed between GR5RdgDSS ( $r = -.23, p < .0001$ ), GR5MthDSS ( $r = -.18, p < .0001$ ), GR6MthDSS ( $r = -.18, p < .0001$ ), and GR6RdgDSS ( $r = -.21, p < .0001$ ) and SES, as well as GR5RdgDSS ( $r = -.16, p <$

.0001), GR5MthDSS ( $r = .09, p = .03$ ), and GR6RdgDSS ( $r = .15, p = .0002$ ) and gender. A statistically significant relationship did not exist between ELL ( $r = -.07, p = .09$ ), SES ( $r = -.08, p = .06$ ), and GR6MthDSS ( $r = .07, p = .08$ ) and Gender. As a result, gender was removed from the math model. The VIF for the independent variables was ( $ELL = 1.20, SES = 1.14, GENDER = 1.00, GR5RdgDSS = 1.14, GRD5MthDSS = 1.06$ ) indicating that multicollinearity was not present, the variance of the independent variables was not inflated, and the information contained in them was not redundant.

Table 15

*Pearson's Correlation Coefficient Matrix of Independent Variables*

	ELL	SES	GENDER	GR5RdgDSS	GR5MthDSS	GR6MthD
ELL						
SES	.33 < .0001					
GENDER	-.07 .09	-.08 .06				
GR5RdgDSS	-.30 < .0001	-.23 < .0001	.16 < .0001			
GR5MthDSS	-.20 < .0001	-.18 < .0001	.09 .03	.70 < .0001		
GR6MthDSS	-.20 < .0001	-.18 < .0001	.07 .08	.66 < .0001	.79 < .0001	
GR6RdgDSS	-.27 < .0001	-.21 < .0001	.15 .0002	.80 < .0001	.65 < .0001	.73 < .0001

Note: ELL=English language learner, SES=Socioeconomic Status, GR5RdgDSS=fifth grade FCAT reading DSS, GR5MthDSS=fifth grade FCAT math DSS, GR6RdgDSS=sixth grade FCAT reading DSS, GR6MthDSS=sixth grade FCAT math DSS.

**Model Specification.** Model specification refers to selecting the appropriate independent variables to include or exclude from the regression equation (Allen, 2004). In order to detect specification error and determine if the appropriate independent variables were included in the regression model, an analysis of the critical  $F$  value/ratio



was conducted. The  $F$  value/ratio for the reading model was  $F(4, 603) = 271.67, p < .0001$  with a critical value 3.36 for ( $n = 500, \alpha = .01$ ) and  $F(4, 602) = 254.10, p < .0001$  for math, which indicated that the model had statistically significant predictive capability and reduced the chance of specification error.

Analysis of  $R^2$  or the coefficient of determination, explains the amount of variance explained by the model (model fit) for reading ( $R^2 = .65$ ) and math ( $R^2 = .63$ ) suggested that a statistically significant amount of the variance in the sixth grade FCAT reading and math DSS was explained by the model. Disaggregation of the variables in the model indicated that the independent variables ELL, SES, and gender, which are dichotomous and categorical, were not significant predictors of sixth grade FCAT reading and math DSS, indicating that past test performance was the best indicator of future test performance in this model. Because ELL, SES, and gender were not significant predictors of sixth grade FCAT reading and math DSS, there may be other variables that might increase the predictability of the model, but they are unknown to the researcher, and beyond the scope of this study.

**Measurement Error.** Measurement error is the discrepancy between the representative numbers of what is being measured and the actual value of what is being measured (Field, 2009, p. 11). Cronbach's Alpha was used to analyze internal consistency and reliability of the dependent variables FCAT reading and math DSS. The coefficient for the sixth grade FCAT reading DSS was .89 and .87 for the FCAT math DSS (Florida Department of Education, 2004).

There were four independent variables in this study. The independent variable gender naturally occurs, and is not easily influenced by other factors, thereby minimizing

measurement error. ELL status is determined by the Language Assessment Scales (LAS), a language assessment used by the FLDOE to identify, place, and reclassify ELL students. The LAS was normed on 3600 students in Texas and California, and has an alpha coefficient reliability rating above .80, again, reducing the chance of measurement error for this predictor (CTB/McGraw Hill, 1990). Eligibility for free/reduced lunch (SES) is self reported by parents and may be subject to some degree of human error and misrepresentation, thereby increasing the chance of measurement error for this predictor. The final independent variables, fifth grade FCAT reading and math DSS were also analyzed for internal consistency and reliability by the FLDOE, resulting in Cronbach's Alpha coefficients of .90 and .92, which respectively reduced the chance of measurement error for these variable (Florida Department of Education, 2004).

### **Multiple Regression Analysis**

Regression analysis seeks to predict an outcome variable from one or more predictor variables. In essence, a model is fitted to data to predict values of a dependent variable (Field, 2009). However, it is important to note all models include a certain amount of error. Errors in regression analysis are referred to as residuals. Within the errors or residuals, there may be outliers or influential observations that must be considered.

To identify outlier and influential observations, several statistical measures were utilized. Outliers are individual observations with large residual values relative to the data set. Studentized residuals were analyzed to determine if any residual vales were extreme enough to be considered too large. Studentized residuals are error values fitted

to a normal distribution using standardized  $z$ -scores. Approximately 95% of the observations should fall within  $\pm$  two standard deviations of the mean, and 99% within  $\pm$  2.5 standard deviations, and 99.9% should fall within  $\pm$  3.29 standard deviations (Field, 2009). Scores larger than three standard deviations are cause for concern, and should be examined closer (Stevens, 2007). For FCAT reading DSS, there were 10 observations with absolute values greater than 2.5, ranging from  $\pm$  2.55 to 4.61 and yielding 1% of the observations greater than  $\pm$  three standard deviations. This was an indication that these observations should be considered for further analysis to determine if they influenced the model. For FCAT math DSS, there were 19 observations with absolute values greater than 2.5, ranging from  $\pm$  2.56 to 4.80 and yielding 2% of the observations greater than  $\pm$  three standard deviations. This was also an indication that the observations should be analyzed further to determine their influence on the model.

After identifying the larger observations with studentized scores, Cook's distance ( $D$ ) test was conducted to determine the overall influence of the observations on the model. An individual observation with a  $D$  statistic greater than one could be cause for concern (Cook & Weisberg, 1982). Analysis of the Cook's  $D$  statistic did not find any observations with a  $D$  statistic greater than 1. The largest  $D$  statistic for reading and math was  $D = .06$  and  $D = .21$  respectively. These were the same observations with largest studentized scores. However, since the  $D$  statistic was less than one, there was not undue influence on the model and removal was not warranted. To further confirm reliability, the regression analysis was run with and without the observations in question, resulting in no significant impact on the model. Therefore, the observations remained in the sample.

Another way to identify observations with large influence is the DFBeta statistic. It is the difference between a parameter estimated with all observations and one removed. As a standardized measure, an absolute value greater than one indicates a case that could influence the model (Fields, 2009). Analysis of the DFBeta statistics did not reveal any values greater than one, confirming that there was not a single observation that influenced the model.

**Reading.** The first multiple regression model was estimated to answer the question: What relationship exist between Hispanic students' sixth grade reading FCAT DSS and their ELL status, SES, gender and fifth grade FCAT reading DSS? A statistically significant regression equation was found at  $F(4, 604) = 271.67, p < 0.001$ , an  $R^2$  of .65 and an adjusted  $R^2$  of .64, indicated that 65% of the variance in FCAT reading DSS scores was accounted for, in the regression model. The independent variable GRD5RdgDSS had the largest beta coefficient (.79).

The equation for the sixth grade FCAT reading DSS was:

$\hat{Y}_{\text{FCAT reading DSS}} = 460.44 - 4.15.32(\text{ELL status}) - 19.62(\text{SES}) + 15.28(\text{Gender}) + .78(\text{GRD5RdgDSS})$ , where ELL status was coded as 1 = YES, 0 = NO, SES was coded as 1 = YES, 0 = NO, and gender was coded as 1 = Female, 0 = Male. The direction of the parameter estimates or standardized regression coefficients  $\beta$  indicated that holding everything else constant, Hispanic students who received ELL services earned an average of 4.15 fewer FCAT reading DSS points than students who did not receive ELL services. In addition, holding everything else constant, students who were eligible for free/reduced meals (SES) earned an average of 19.62 fewer FCAT reading DSS points. The

regression coefficient for Hispanic females indicated that holding everything constant, they earn an average of 15.28 more FCAT reading DSS points than Hispanic males.

Every one standard deviation increase in the GRD5RdgDSS resulted in a .79 standard deviation increase in the GRD6RdgDSS. ELL status, SES, and gender, were not statistically significant predictors of sixth grade FCAT reading DSS scores. Table 16 displays a summary of the regression model.

**Math.** The second multiple regression model was estimated to answer the question: What relationships exists between Hispanic students’ sixth grade math FCAT DSS and their ELL status, SES, and fifth grade FCAT math DSS? A statistically significant regression equation was found ( $F(4, 598) = 254.10, p < 0.001$ ), an  $R^2$  of .63 and an adjusted  $R^2$  of .63, indicated that 63% of the variance in FCAT reading DSS scores was accounted for in the regression model. The independent variable fifth grade

Table 16

*Summary of Regression for GRD6RdgDSS*

Variable	DF	B	SE	<i>t</i>	Pr >   <i>t</i>	$\beta$
Intercept	1	460.44	45.13	10.20	< .0001	0
ELL	1	-4.15	15.99	-.26	.80	-.007
SES	1	-19.62	16.95	-1.16	.25	-.03
Gender	1	15.28	14.41	1.06	.29	.03
GRD5RdDSS	1	.78	.03	30.20	< .0001	.79

Note: DF=Degrees of freedom. B=coefficient. SE=Standard error. *t*=t-statistic B/SE.

FCAT math DSS had the largest beta coefficient (.78). A post hoc power analysis indicated a 99% chance of correctly rejecting the null hypothesis.

The equation for the sixth grade FCAT math DSS was:

$\hat{Y}_{\text{FCAT math DSS}} = 330.86 - 14.95(\text{ELL status}) - 16.54(\text{SES}) + .82(\text{GRD5MthDSS})$ , where ELL status is coded as 1 = YES, 0 = NO and SES is coded as 1 = YES, 0 = NO. The direction of the parameter estimates or standardized regression coefficients  $\beta$  indicated that holding everything else constant, Hispanic students who received ELL services earned an average of 14.95 fewer FCAT math DSS points than students who do not receive ELL services. In addition, holding everything else constant, students who were identified as low SES earned an average of 16.54 fewer FCAT math DSS points.

Table 17 displays a summary of the regression model. Every one standard deviation increase in the GRD5MthDSS resulted in a .78 standard deviation increase in the GRD6MthDSS. ELL status, SES, and gender, were not statistically significant predictors of sixth grade FCAT reading DSS scores.

Table 17

*Summary for Regression for GRD6MathDSS*

Variable	DF	B	SE	<i>t</i>	Pr >   <i>t</i>	$\beta$
Intercept	1	330.86	47.98	6.90	< .0001	0
ELL	1	-14.95	13.57	-1.10	.27	-.03
SES	1	-16.54	14.66	-1.13	.26	-.03
GRD6MthDSS	1	.82	.03	30.44	< .0001	.78

Note: DF=Degrees of freedom. B=coefficient. SE=Standard error. *t*=t-statistic B/SE.

## **Summary of Results**

This study examined if there was a relationship between the achievement of Hispanic students and the transition to middle school. To answer this question, two multiple regression tests were conducted on the dependent variables sixth grade FCAT reading and math DSS and the independent variables, ELL status, SES, gender and fifth grade FCAT reading DSS and ELL status, SES, and fifth grade math DSS.

Descriptive statistics were used to answer the question; Does the mean FCAT reading and math DSS of Hispanic students decline when they transition to middle school? Annual learning gains were achieved by students who were low SES, ELL males (148 points or 10%) and female ELL students who were not low SES (157 points or 10%). Descriptive statistics indicated that the mean developmental scale score (DSS) for sixth grade FCAT reading achievement increased an average of 7% as students transitioned to sixth grade, while math increased 1.7%, affirming that Hispanic students realized an increase in mean achievement as they transitioned to middle school.

The results of the regression analysis revealed that only the fifth grade FCAT reading and math DSS predicts with statistical significance. The fifth grade FCAT reading DSS accounted for 65% of the variance in the sixth grade FCAT reading DSS and fifth grade FCAT math accounted 63% of the variance in the sixth grade FCAT math DSS. The study also found that ELL status, SES, and gender were not statistically significant predictors of achievement as students transitioned to middle school, indicating that there was not a statistically significant relationship between gender or ELL status and increases in achievement after the transition to middle school. The regression summary

tables indicated modest declines for these variables as it related to the transition to middle school, but they were not statistically significant.

In the next chapter, conclusions, implications, and recommendations will be discussed based on the findings of chapter four. The discussion will include trends and systemic patterns, as well as ways to ease the transition to middle school and increase the overall achievement of Hispanic students.



## **Chapter V**

### **Discussion**

#### **Introduction**

In America, common sense is not common practice when it comes to education. If it were, legislators would listen to the theorists and practitioners that really have a pulse on what works in education. This chapter includes a summary of the procedures, findings, conclusions, recommendations, and suggestions for further study. The discussion will include trends and systemic patterns, as well as ways to ease the transition to middle school and to increase the overall achievement of Hispanic students. The study set out to determine if there was a relationship between achievement, ELL status, SES, gender, and prior test performance after the transition to middle school.

This purpose of this study was to determine if the transition to middle school affected the reading and math achievement of Hispanic students. Archival data were collected on Hispanic students who were enrolled in Pinellas County Schools in the fifth grade during the 2007-2008 school year and the sixth grade during the 2008-2009 school year. The dependent variables for the study were the sixth grade FCAT reading and math developmental scale scores (DSS) and the independent or predictor variables were ELL status, SES, gender and fifth grade FCAT reading and math DSS.

## Procedures

Prior to conducting this study, permission was granted from the Department of Research and Accountability at Pinellas County Schools and the Institutional Review Board of the University of South Florida. The data were provided from Pinellas County Schools in the form of an electronic spreadsheet. Subsequently, it was sorted and categorized prior to conducting any statistical tests. Statistical procedures included the calculation of descriptive statistics and the conduct of multiple regression analyses.

This study examined the reading and math achievement scores of Hispanic students as they transitioned from elementary school to middle school. It also examined if there was a relationship between the sixth grade FCAT reading and math DSS, ELL status, SES, gender, and the fifth grade FCAT reading and math DSS. The sample for the study was obtained from the population of students enrolled in sixth grade during the 2008-2009 school year ( $N = 6125$ ). The sample included all ( $n = 607$ ) Hispanic sixth graders for that school year. Students self identified by their parents as being Hispanic when they registered for school in Pinellas County. Every student in the final sample had a corresponding FCAT score for the fifth and sixth grade. The research questions for this study were:

### Reading

1. Does the mean FCAT reading DSS of Hispanic students decline when they transition to middle school?
2. What relationships exist between Hispanic students' sixth grade FCAT reading DSS and their ELL status, SES, gender, and their fifth grade FCAT reading DSS?

## Math

1. Does the mean FCAT math DSS of Hispanic students decline when they transition to middle school?
2. What relationships exist between Hispanic students' sixth grade FCAT math DSS and their ELL status, SES, gender, and their fifth grade FCAT math DSS?

Descriptive statistics were calculated to examine the impact that the transition to middle school had on the mean FCAT reading and math DSS of Hispanic students. Multiple regression analyses were conducted to ascertain if a relationship existed between the dependent variables, sixth grade FCAT reading and math DSS and the independent variables, ELL status, SES, gender, and fifth grade FCAT reading and math DSS. The results of these analyses were presented in Chapter Four.

### **Summary of the Findings**

Descriptive statistics indicated that the mean DSS for reading and math increased as Hispanic students transitioned to middle school. The mean FCAT reading DSS increased 7% and the mean FCAT math DSS increased 2%. A significant regression equation was found ( $F(4, 599) = 271.67, p < 0.001$ ) for the dependent variable sixth grade FCAT reading DSS as well as the dependent variable sixth grade FCAT math DSS ( $F(4, 598) = 254.10, p < 0.001$ ). The independent variables ELL status, SES, and gender had modest zero-order correlations, but minimal predictive power.

## **Discussion of the Findings**

The major findings of this study do not support the literature that indicated that students experienced a decline in achievement when they transitioned to middle school (Akos & Galassi, 2004; Alspaugh, 1998; Alspaugh & Harting, 1995; Rumberger & Larson, 1998; Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). Analysis of the descriptive statistics indicated that Hispanic students experienced a substantial increase in their mean FCAT reading DSS as they transitioned to middle school, gaining an average of 112 points or 7% as a cohort with low SES, ELL males and non-SES ELL female students making enough gains for annual growth. However, math did not realize the same amount of growth, only increasing the mean sixth grade DSS by 30 points or 2% after the transition to middle school. Neither of these gains met the threshold for annual growth, which were 133 points for reading and 95 for math.

The mean FCAT reading DSS gains for students who were male, low SES, ELL and female, ELL students who were not low SES was large enough to be considered annual learning gains. For students who transitioned to middle school (fifth to sixth grade), the FLDOE defined annual learning gains or a years worth of growth for reading as a 133 point increase in the DSS and a 95 point increase in math. The disaggregated data for FCAT math DSS did not indicate increases large enough to be considered annual learning gains. This may suggest systemic issues that will be discussed later in this chapter.

Non-ELL Hispanic students' mean sixth grade FCAT reading DSS was 95 points higher for females and 125 points higher for males. The mean FCAT math DSS was 22 points higher for non-ELL females, and 102 points higher for non-ELL males. For non-

SES, non-ELL females, the mean FCAT reading DSS was 225 points higher, and for non-SES, non-ELL males, the mean FCAT reading DSS were 184 points higher.

Such large differences in mean FCAT DSS achievement suggested that there may be an achievement gap between ELL and non-ELL Hispanic students in reading and math. It also suggested that based on annual growth calculations by the Florida Department of Education, ELL students may be as much as one year behind, and low SES ELL students, may be even further behind as it relates to the mean FCAT DSS in reading and math.

Several studies suggested that language and low SES were associated with declines in student achievement as students transitioned to middle school (Rosenthal, Baker, & Ginsburg, 1983; Rumberger & Larson, 1998; Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). Modest correlations existed between dependent variable sixth grade FCAT reading DSS and the independent variable ELL status, SES, and gender, suggesting that language, SES, and gender did not have predictive power for the achievement of Hispanic students in this study as they transitioned to middle school. However, it is important to note that although the correlations were modest, the direction of the relationship between the dependent variable sixth grade FCAT reading DSS and the independent variables ELL status and SES was negative, suggesting that students who were ELL or low SES possibly experience smaller gains in reading than their non-ELL or more affluent counterparts, which might further suggest an achievement gap.

A statistically significant relationship was found between the dependent variable sixth grade FCAT reading and math DSS and the independent variable fifth grade FCAT reading and math DSS ( $r = .80, p < .0001$ ;  $r = .79, p < .001$ ). This indicated that a strong

predictor of the achievement of Hispanic students as they transitioned to middle school was the fifth grade FCAT reading DSS. This also suggested that a good predictor of future performance on the FCAT is past performance.

The regression analysis results for math were very similar to reading. Language and SES were not significant predictors of the sixth grade math achievement of Hispanic students, suggesting that language, SES, and gender did not significantly effect the math achievement of Hispanic students in this study as they transitioned to middle school. Again, it is important to note that although not significant, the direction of the relationship between the dependent variable sixth grade FCAT math DSS and the independent variables ELL status and SES was negative, suggesting that students who are ELL or low SES possibly experience smaller gains in math than their ELL or low SES counterparts.

This study was conducted on a large sample ( $N = 615$ ). Post hoc power analysis indicated a 99% chance of correctly rejecting the null hypothesis. Because of the power and the large sample size, the results of this study can be generalized to the population of Hispanic students enrolled in Pinellas County Schools. Additional conclusions and recommendations will be made in the following sections.

### **Limitations Restated**

Limitations that were associated with this study were the sampling procedure and the self-reporting of data. A purposeful sample was used to select the participants in the study. Because a pure random sampling procedure was not used, external validity may have been marginally reduced. The sample comprised of Hispanic students in Pinellas

County Schools and may not be generalizable beyond the school district. Eligibility for free/reduced lunch (SES) was self reported by parents and was subject to some degree of human error and misrepresentation, thereby increasing the chance of measurement error for this variable. In addition, data were entered into the local student information system by hand; therefore the study was limited to the accuracy of data that are entered by humans. Lastly, there may have been other extraneous variables that were unknown to the researcher and were not included in the study. The study was limited to the results based on the variables included in the research.

## **Conclusions**

This study examined the impact of middle school transition on the achievement of Hispanic students. It also determined if there was a relationship between the dependent variable FCAT reading and math DSS and the independent variables ELL status, SES, gender, and fifth grade FCAT reading and math DSS. A sample of ( $N = 615$ ) Hispanic students' FCAT reading and math DSS was analyzed to determine what impact the transition to middle school had on their achievement.

The results of the descriptive statistical analyses for reading indicated gains across all tested groups. Even with the gains, the mean DSS for Hispanic ELL students was far below that of non-ELL students. This finding indicated that there might be an achievement gap for students whose first language is not English and are economically disadvantaged. The data also suggested that while there is an achievement gap for Hispanic readers, the school level programs and services that ELL students received in elementary schools are successful deterrents to the achievement decline that past studies

associated with the transition to middle school (Akos & Galassi, 2004; Alspaugh, 1998; Alspaugh & Harting, 1995; Rumberger & Larson, 1998; Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). While these programs and services assisted Hispanic students in realizing gains in reading after they transitioned to middle school, they were not sufficient enough to close the achievement gap.

Additional instructional strategies, programs and services, or accommodations may be needed in order to assist ELL students in realizing larger reading achievement gains and closing the achievement gap. These strategies could include differentiating instruction, flexible grouping, providing a smaller learning environment, using teacher made assessments, and using the students' home language in class (Castle et al., 2005; Jia et al., 2006; Menken, 2002; Wormeli, 2006). However, the most effective accommodations are presentation and response. Presentation accommodations permit repetition, explanation, and translation to home language. Response accommodations allow students to dictate their answers and to respond in their home language. Both of these accommodations directly address ELL's language needs, and may increase the chances that the learners will be able to demonstrate their knowledge and improve their achievement (Coltrane, 2002; Menken, 2000).

While the results of the math data were inconsistent with past studies that suggested that the transition to middle school is associated with significant declines in achievement every statistical measure in this study indicated minimal gains in math achievement as both ELL and non-ELL students transitioned to middle school (Akos & Galassi, 2004; Alspaugh, 1998; Alspaugh & Harting, 1995; Rumberger & Larson, 1998; Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). A closer look at the data revealed



the same trend for every tested FCAT subgroup. This may indicate that the core math curriculum in fifth and/or sixth grade is not aligned to the tested benchmarks in the district under study. This could be attributed to inadequate teacher preparation, professional development, or instruction. Additional professional development for teachers, programs and services, or accommodations may be needed in order to assist ELL students in realizing larger math achievement gains and closing the achievement gap. Hispanic ELL students may also benefit from teachers who have been properly trained in the effective use of ELL strategies and accommodations and who utilize those strategies in their teaching practice.

### **Recommendations**

The results of this study indicated that a predictor of sixth grade student achievement after students transitioned to middle school was the fifth grade FCAT reading and math DSS. Although reading scores showed the most gains in FCAT DSS, Hispanic ELL students were still functioning below their non-ELL counterparts. Studies by Cobb, Vega, and Kronauge, 2006; Lindholm-Leary and Borsato, 2002; Lindholm-Leary & Block, 2009; and Potowski, 2004, suggested that students who are bilingual outperform their monolingual counterparts on standardized test, even those students who speak English as a first language. District math, reading, and ELL supervisors should review the current service delivery model for ELL students and determine its effectiveness as it relates to Hispanic reading and math achievement. The results of this study could serve as baseline data for the effectiveness of the current delivery model.

The results of this study indicated that while Hispanic students made gains in reading as they transitioned to middle school, they still lagged behind. Based on the studies and the achievement gap that exist between ELL and non-ELL students, it is recommended that Pinellas County Schools examine the achievement data of students enrolled in existing dual language immersion bilingual programs to determine its effectiveness in closing the achievement gap for Hispanic students. Based on positive results from the dual language achievement data, it would be recommended that the school district expand its dual language programs to elementary schools that have a Hispanic student population of more than 30%. In addition, the school district should audit the current professional development model used to train teachers of ELL students. The current model does not appear to yield results that close the achievement gap for ELL students.

If accepted, these recommendations may assist the district in implementing a research-based delivery model that provides Hispanic ELL students with home language maintenance while learning English. The district would also be able to provide an adequate solution for the growing number of Hispanic students that enter and will continue to enter the school system. The results of this study indicated that the current model used by Pinellas County Schools has produced positive results in reading for Hispanic students as they transitioned to middle school. However, additional supports, professional development, and programs may be needed to further close the achievement gap between Hispanic ELL students and their English-speaking counterparts.

The results for math indicated that there could be a systemic flaw in the alignment of the math curriculum to the tested benchmarks in Pinellas County Schools. Students in

every subgroup experienced minimal gains in math achievement as they transitioned to middle school. None of the subgroups improved enough to make annual learning gains. It is unclear what this could be attributed to, but a complete audit of the fifth and sixth grade math curriculum is recommended. It is recommended that Pinellas County Schools conduct a comprehensive review of the math benchmarks, related text, ancillary materials, and instructional strategies that are used for the fifth and sixth grade. This would insure that they are aligned to the tested benchmarks. It is also recommended that elementary and middle school math teachers regularly articulate on how to provide Hispanic students with the best preparation for middle school math.

Although Hispanic ELL students realized gains as they transitioned to middle school, they still lagged behind their non-ELL counterparts. The ELL training that all teachers receive in elementary school is reduced in middle school. Only the Language Arts and Reading teachers are required to take the 300 in-service hours or its equivalent of ESOL training. All other subject area teachers are only required to take 60 hours of in-service courses to assist them in providing language support for middle school ELL students (*LULAC et al. v. Florida Board of Education et al*, 2003). Subsequently, as Hispanic ELL students transitioned to middle school, the language support they received was diminished by the amount of teachers not fully trained and educated in the use of ELL language strategies. ELL students could benefit from increased ESOL training by all content area teachers so that reading and language support can be provided in subjects such as Science and Social Studies. Instead of only requiring 60 hours of professional development, content area teachers should be required to complete the same 300 hours of ESOL training as the Reading and Language Arts teachers.

In addition, the school district should provide meaningful transition programs for all of its sixth grade students. Transition programs could include a fifth grade visit, orientations, a summer academy for struggling students, and mini workshops at the start of the school year (George, Breslin, & Evans, 2007). The criteria for the summer academy could be FCAT achievement scores and teacher recommendations. The district should also consider mandating block scheduling (giving students 80 to 90 minutes of instruction) for middle schools that have a high percentage of struggling students. In a study by Jesse et al. (2004), more than half of the successful Latino middle schools used a block schedule, or a modified form of it. A study by Grimwood (2000) stated that block scheduling helped to improve the grades of ELL students by allowing them more time to practice new language construction and engage in longer periods of sustained silent reading.

### **Suggestions for Further Study**

The findings of this study were inconsistent with the research that indicated that student achievement declines after the transition to middle school (Akos, 2002; Akos & Galassi, 2004; Alspaugh, 1998; Alspaugh & Harting, 1995; Barber & Olsen, 2003; Elias, 2002; Rumberger & Larson, 1998; Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). While this study found that ELL students experienced gains in their sixth grade FCAT reading and math DSS, it is not clear how the reduction in required teacher training and ELL services in middle school impacts student achievement. The question becomes, “Would an increase in ELL services and support close the achievement gap for Hispanic students after the transition to middle school?”

The initial recommendation for future research would be to examine the population of students that were taught by middle school teachers that received the same level of professional development and training in the use of ESOL strategies and accommodations as their elementary counterparts. Specifically, the study should examine the reading and math achievement scores of Hispanic ELL students that are taught by intensively ESOL trained (300+ hrs.) middle schoolteachers and compare them to the reading and math achievement scores of Hispanic ELL students taught by minimally ESOL trained (60 hrs.) middle school teachers. The findings of this research would allow theorist and practitioners to determine if the services and instructional strategies provided in middle school close or widen the achievement gap.

This study found that the strongest predictor of future test performance was past performance. Specifically, the fifth grade FCAT reading and math DSS accounted for nearly 66% of the variance in the sixth grade FCAT DSS. Additional research should be conducted on variables such as GPA and attendance and how they affect the predictability of sixth grade FCAT reading and math DSS collectively or individually. The results of such a study would aid Pinellas County Schools' personnel in developing key indicators of Hispanic student success. This would also assist them in aligning ELL strategies and accommodations to the key indicators.

This study's population was Hispanic students in Pinellas County Schools. The results were generalizable to Pinellas County. It is recommended that research be conducted in other districts across the state to determine if they are realizing the same types of gains in reading and math as Pinellas County. This would inform the state about

the fidelity of the implementation of the remedies prescribed by the Florida Consent Decree (*LULAC v. Florida Board of Education*, 1990).

### **Recommendations for Practice**

While this study found that Hispanic students realized gains in student achievement as they transitioned to middle school, it is important to note that overall gains for math (2%) were significantly lower than reading (7%). A more in-depth examination of the descriptive statistics revealed this trend to be consistent among all FCAT subgroups. The statistics indicated that a systemic flaw exist in the math curriculum and/or instructional strategies for sixth graders in Pinellas County. It is recommended that Pinellas County Schools conduct an in-depth audit of the infrastructure, instructional delivery model, and pedagogical processes used to instruct sixth grade math students and alignment of the math curriculum to the tested benchmarks. Teachers may need additional training, resources and instructional support to assist them in becoming better teachers and to improve student achievement in math. Students may benefit from the use of math manipulates, iPad math tutorials, and instant responders. These hands-on applications may lead to increased student engagement and improved math achievement.

### **Conclusion**

This study examined how the transition to middle school affected student achievement in reading and math. Specifically, how the achievement of Hispanic students changed as they moved from fifth to sixth grade. Archival data was collected on

Hispanic students who were enrolled in Pinellas County Schools in fifth grade during the 2007-2008 school year and the sixth grade during the 2008-2009 school year.

Studies revealed that the phenomenon of achievement loss associated with middle school transition does not affect all students (Akos, 2002; Akos & Galassi, 2004; Alspaugh, 1998; Alspaugh & Harting, 1995; Barber & Olsen, 2003; Elias, 2002; Rumberger & Larson, 1998; Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). The research was also very clear on how the declines associated with the transition to middle school are alleviated (Castle, Baker-Deniz, & Tortora 2005; George, Breslin, & Evans, 2007; Lewis, Dugan, Winokur, & Cobb, 2005; Shoffner & Williamson, 2005; Yecke, 2006). Large and somewhat impersonal middle schools must look within and ask, “Are we doing all that we can to help students have a great experience upon entering sixth grade?” Pinellas County Schools should ask, “Are we doing all that we can to serve our growing Hispanic student population?”

Despite the findings of the above mentioned studies that suggested that student achievement declined as students transition to middle school, this study found that Hispanic student achievement increases in reading and math after transitioning to middle school. In fact, low SES, ELL males students realized some of the highest gains of any subgroup, and made annual learning gains in reading. The findings confirmed that ELL students received a sound instructional foundation in Pinellas County’s elementary schools and the instructional tools, processes, and programs recommended for ELL students under the Florida Consent Decree actually work.

The literature recommended providing bilingual instruction for ELL students as a means of improving achievement and closing the achievement gap (Cobb, Vega, &

Kronauge, 2006; Lindholm-Leary & Borsato, 2002; Lindholm-Leary & Block, 2009; Potowski, 2004). It also indicated that students who are bilingual achieve at a higher rate than their English only counterparts and close the achievement gap (Lindholm-Leary & Block, 2009). Currently, Pinellas County Schools have one full immersion Dual Language program, but has plans to implement several more. This study provides historical background of the evolution of bilingualism in America, as well as historical data on how Hispanic students in Pinellas County perform on standardized test. It also provides current research on the benefits of bilingual education as it relates to improved student achievement.

The practice of bilingualism has largely been abandoned as the United States becomes more diverse than ever before. ELL students, particularly those in poverty are “the most defenseless, and vulnerable of all served by public schools” (Blanton, 2004, p. 71). Early bilingual education proponents felt that bilingual education actually helped the students assimilate into American culture. Home language maintenance, sound ELL instructional strategies, along with solid transition programs would foster a middle school environment devoted to the success of all ELL students.

As the enrollment of Hispanic students continues to grow, districts and states across the country should seek programs, strategies, and interventions that help ELL students improve their academic achievement. The literature indicated that if ELL students are going to be successful, we must provide maintenance for their home language (Cobb, Vega, & Kronauge, 2006; Lindholm-Leary & Borsato, 2002; Lindholm-Leary & Block, 2009; Potowski, 2004). It is not enough to provide teacher training and place ELL students into a classroom with a majority of people that do not speak their



native tongue. They must be afforded an educational environment that will allow them to flourish and grow. The literature suggested that Bilingual education through a Dual language Immersion model improves academic language, increases test scores, and closes the achievement gap (Cobb, Vega, & Kronauge, 2006; Lindholm-Leary & Borsato, 2002; Lindholm-Leary & Block, 2009; Potowski, 2004).

The results indicated that Pinellas County Schools provides adequate language services and interventions in elementary school; however, they are not enough to close the achievement gap. The literature clearly indicated that students who are bilingual achieve at a higher rate than their English-speaking counterparts. While the results of this study are positive and confirm that the current interventions and strategies for ELL students are working, ELL students continue to lag behind their English-speaking counterparts.

This may be due in part to the fact that ELL students are required to take the reading FCAT after as little as one year of ELL services and the math and science FCAT regardless of the amount of time they have received ELL services (Florida Department of Education, 2011). Despite the findings of language acquisition research that suggest that it takes five to seven years for ELL students to acquire English, and even longer for the academic language found on the FCAT, second-year ELL students must do so with very minimal accommodations. (Krashen, 1997; Ovando & Collier, 1998).

The research has indicated that students that speak Spanish as their primary language have lower achievement levels than those that speak English as their first language (Jesse et al., 2004; Rosenthal et al., 1983; Waxman et al., 1997). Therefore, it should not be a surprise that given the practice of requiring ELL students to test after one

year of ELL services, ignoring the fact that the math and science FCAT require reading, and not providing research based accommodations such as testing in their home language, or reading the test in their home language, they continue to lag behind on achievement test such as the FCAT.

While the state does require ELL students to annually participate in the Comprehensive English Language Learning Assessment (CELLA), which measures ELL students' progress in listening, speaking, reading, and writing English language skills (Florida Department of Education, 2011), they should not expect to get a different result. In order to get a different result, the district and state will need to do more. Hispanic students will stand a far better chance of closing the achievement gap if their home language maintained through bilingual programs, more effective accommodations are utilized, and they are given more than a year to acquire English before being required to take a high stakes test such as the FCAT (Cobb, Vega, & Kronauge, 2006; Lindholm-Leary & Borsato, 2002; Lindholm-Leary & Block, 2009; Potowski, 2004).

The practice of ELL programs, supports and interventions as well as the expansion of bilingual programs in elementary schools is supported by this study. However, additional research must be conducted on the far-reaching impact of reduced services for ELL students in middle school. Although ELL students made gains after the transition to middle school, additional research is necessary to determine if the achievement of these students is sustained through middle school and into high school.

When given the proper support and instruction, Hispanic students have demonstrated that they can be successful after the transition to middle school. However, there is additional work that can and must be done to close the achievement gap. Pinellas

County Schools must continue to embrace the idea of bilingual education. Although many places in America have abandoned this approach, research indicated that it was a successful strategy for helping Hispanic students insure matriculate through our educational system.

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