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I certify that the work presented in the dissertation is my own unless referenced

Signature.....

Date.....

DECLARATION

I [*type your full first names and surname here*], declare that the contents of this dissertation/thesis represent my own unaided work, and that the dissertation/thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the University.

Signed _____ Date _____

Abstract

The purpose of this study is to explore the lag in different ethnicities' students' achievement in Math Scores, as compared to Hispanic student achievement in New York. The focus of the study are Hispanics because 1) the Hispanic population is growing exponentially arid 2) Hispanics are scoring significantly higher on achievement tests than other ethnic groups due to the emphasis in their families by parents. The study is a quantitative analysis of the relationship between student characteristics and achievement among 2007-2008 tenth- grade students' state assessment AIMS Math and Reading scale scores from Clarksville School District. Hispanics are the focus of the study and Whites are used as the group for comparison because Whites comprised the majority of the 2007-2008 tenth-grade AIMS population. The researcher will conduct an extensive review of the literature regarding the influence of student characteristics related to their achievement. Ethnicity, gender and family attention on studies are identified as the most salient features associated with overall student achievement.

Descriptive statistics confirmed the effect of ethnicity, gender, and emphasis in home on student achievement demonstrated in the empirical literature. The method of analysis includes frequency distributions to show intervals of data, as well as data analysis of student achievement scores according to the NCLB model as a point of comparison. There was a linear regression analysis of the student characteristic variables as well as special education and individual high school variables to predict scale scores for tenth-grade students in Clarksville School District. In addition, interaction terms are reported where the introduction of such terms were both statistically significant and improved the fit of the model.

The most significant finding showed that the addition of the ‘Parent emphasis on studies’ variable had the largest negative effect on student achievement as measured by AIMS Math and Reading Scores. Specifically, English learners (EL) scored significantly higher than English proficient (EP) students due to the emphasis in home. The findings challenge school leaders to focus on home emphasis to increase other ethnic student achievement.

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Chapter 1: Introduction

Background of the Problem

As the Hispanic population increases in New York, the number of college graduates of Hispanic descent should follow. Although a gradual increase in Hispanic students attending state universities has been seen, the increase has not kept pace with the increases seen in the general population. Additionally, the numbers of those achieving the baccalaureate degree have not increased. There have been a number of research projects in recent years that have documented qualitative reasons why Hispanic students have been reluctant to go to college and the factors that contribute to their success and failure at institutions of high education.

The concept of equity in academic achievement for all students, regardless of ethnicity, is an issue that has captured the attention of politicians, educators, and the federal government since the 1960s with the implementation of the Elementary and Secondary Act of 1965. The Elementary and Secondary Act (ESEA) was soon followed by the report, A Nation at Risk, in which the low achievement levels of students within the American school system were detailed. In 2001, the No Child Left behind Act (NCLB) was created and signed into law (Velazquez, 2010).

The No Child Left behind Act is based on "four key principles which grants greater accountability and adaptability when using funds for schools, school districts and states; more freedom and power in the selection of schools for disadvantaged parents; and greater options for teaching methodology, based on empirical research". The aim of the NCLB Act was to create opportunities for all students to be successful, regardless of their academic background, ethnicity, or socio-economic status. One intention behind the implementation of the NCLB Act

was to increase state and local accountability, which therefore, would ideally increase the equity of all subgroups on a national level by the school year 2013-2014(Haertel, 2010).

Other Students Achievement Gap

Researchers have well-documented the majority achievement gap, beginning with The Equality of Educational Opportunity Study (EEOS) that has come to be known as the Coleman Report. The Coleman Report examined the influence of students' and schools' characteristics, including ethnicity, on achievement as determined by test scores. It is concluded that family background, a subset of student characteristics, had a greater influence on student achievement than other characteristics, such as teachers' characteristics, school facilities, and students' attitudes. There was a greater variance in student achievement within schools than between schools, implicating the importance of family background factors over school characteristics. Moreover, the influence of family background on academic achievement did not diminish over the years.

The U.S. federal government also documented the children achievement gap. For example, legislators enacted the No Child Left behind Act of 2001 (NCLB) which required states to address gaps in academic achievement among students of different ethnic, socioeconomic, and linguistic, backgrounds. Despite extensive research and governmental initiatives, educational policymakers and school leaders, there was a need, for additional research to better comprehend the variables associated with the continued Hispanic achievement gap, so they were more equipped to address the on-going underachieving group and prepare them for the future workforce. The influence of Hispanics on the United States workforce is greater now than at any other time in history. Their contribution as members of the U.S. workforce increased over 36%

in the last 10 years, and these numbers will continue to increase as the school-age Hispanic population in the U.S. reaches working age. The projection for the Hispanic population in the 18-24 age ranges is approximately 37% of the workforce by 2010, whereas Whites in the same age group will make up less than 31% of the workforce. The U.S. must properly train this young, emerging Hispanic population for the jobs of the future, and education is vital to their success (Neuschmidt, 2008).

Problem Statement

Even though, theories related to mathematics education and the demands of technology and the economy have changed, the mathematics taught in schools have not prepared young people for industry or the university. Twenty-three percent of Texas high school students do not pass the math exit level state assessment, 50% of high school graduates must take a remedial course before enrolling in college credit courses. ACT and SAT math scores are decreasing, and U.S. students continue to score below the international level. While there are many factors affecting mathematics education, no definitive practice or program has resulted in improved mathematics literacy.

Research Aims and Objectives

The aims and objectives of this research are to know the difference of the Math scores between Hispanic and other ethnic students. What are the factors of the success of Hispanic students in Mathematics and their lower score in other subjects? The study will contribute in explaining the major differences between ethnic gender, and family background of the students so that they may improve.

Significance of the Problem

The findings from this study will contribute to the scholarly body of research identifying the effect of student demographic variables on student achievement. There were a number of studies focused on factors that influence student achievement at the elementary level but few studies spotlighted the high school level. The study may serve as a guide for school, district, state, and federal administrators to consider how to analyze and report the combination of student demographic variables and their impact on student achievement in order for school leaders to make more informed instructional decisions.

Significance of the Study

The purpose of this study was to explore the lag in White student achievement compared to Hispanic student achievement in New York. Hispanics were the focus of the study because 1) they were a growing ethnic population and 2) their scores were significantly higher than other ethnic groups. The study was a quantitative analysis of the relationship between student characteristics and achievement among 2007-200S tenth-grade students' state assessment AIMS Math and Reading scores. Hispanics were the focus of the study and Whites was used as the group for comparison because they comprised the majority of the 2007-2008 tenth-grade sample. This study will analyze the factors that are helping Hispanics students in achieving higher scores as compared to other ethnic students. The study would help other ethnic students in getting tips from Hispanic students in order to score higher.

Hypothesis/Research Question

Two research questions guided this study on tenth-grade Hispanic student achievement compared to White student achievement in New York:

1) How does a combination of multiple variables simultaneously influence student achievement?

2) How does average scale score predictions influence New York Hispanic tenth- grade performance levels?

Assumptions

It is assumed that the data sources that will be used within the studies are reliable and having valid data, the participants are randomly selected from the whole. There are certain limitations to this study because it focuses one single group that has limited amount of sample to calculate. This kind of study can be conducted on an international level and by doing so we will expand the cultural and geographical factors in the research.

Scope and Limitations

The study includes 2007-2008 New York tenth-grade Math and Reading scale scores and performance levels. Although the Hispanic achievement gap is similar to national averages, there may have been specific, unknown characteristics with this district that are not applicable to other districts in the U.S. Additionally, junior and senior high school students who did not pass AIMS in tenth grade had additional opportunities to pass the exam. An analysis of these junior and

senior students who re-took AIMS could have offered additional insight into variables associated with student achievement. In addition, although New York has high schools with both urban and suburban characteristics, they may not have truly represented either one, nor are rural schools represented. In summary, readers can only generalize findings beyond the study sample with caution. The analysis did not account for many additional variables that influenced student achievement that are not available as part of the data collected for the state. For example, there was ample research on the effect of support systems for students' academic success.

Additionally, qualitative analyses, including teacher, student, or parent interviews could have offered more insight into specific variables that most affect student achievement; however, qualitative methods were not utilized because there is currently not a NCLB mechanism in place to take into account results from interviews. The study was descriptive insofar as it documented associations between variables. Ultimately, the anticipation was that the findings of this study would enable school and district leaders to better understand and utilize the available data currently available in order to make instructional and program decisions that will aid in the success of Hispanic students in their classrooms.

Ethical Considerations

Researcher is fully aware of the ethical issues involved in this work. Responsibility for all procedures and ethical issues related to the project rests with the principal investigators. Research will be conducted in such a way that the integrity of the research enterprise will be maintained, and negative after-effects which might diminish, the potential for future research were avoided. The choice of research issues will be based on the best scientific judgment and on

an assessment of the potential benefit to the participants and society in relation to the risk to be borne by the participants. This study will be related to an important intellectual issue.

The researcher is aware of any potential harmful effects; in such circumstances, and the chosen method was used after consultation with colleagues and other experts. Full justification for the method chosen was given. The research will be conducted in a competent fashion, as an objective scientific project and without bias. The research will be carried out in full compliance with, and awareness of, local customs, standards, laws and regulations. The researcher is familiar with, and respect, the host culture.

The principal investigators' own ethical principles will be made clear to all those involved in the research to allow informed collaboration with other researchers. Potential conflicts will be resolved before the research begins. The research will be avoided undue intrusion into the lives of the individuals or communities they study. The welfare of the informants had the highest priority; their dignity, privacy and interests will be protected at all times. Freely given informed consent will be obtained from all human subjects such as librarians who will provide the literature sources.

Chapter 2: Literature Review

The large body of research on the relationships between students' demographic characteristics and academic achievement provided the foundation for the present study. The researcher systematically reviewed empirical research related to student characteristics and achievement. Most of the research on the Hispanic achievement existed at the elementary levels. There were also a few notable studies at the secondary level that offered insight into the achievement for high school students (Pew Hispanic Center, 2008). The concentration for the studies included the variables that appeared on AIMS, as that is the vehicle used for this analysis. Seventy-eight possible demographic variables appeared on the AIMS report (e.g., special education status, date of birth; family background); three variables emerged from the literature review most associated with student achievement: ethnicity, gender, and family emphasis.

Nationally, the 1990's was a time of substantial growth in the Hispanic population. However, the percentage of Hispanic high school graduates who went to college dropped during this time (Pierson, 2010). Although, in the past ten years, there has been stabilization and even an increase in both high school graduation and post-secondary attendance, the Bachelor degree completion rates have continued to fall below the averages for other demographics of students. Research has documented qualitative reasons why Hispanic students have been reluctant to go to college and the factors that contribute to their success and failure at institutions of higher learning (Stiefel, 2006). Family commitments, economic considerations, a lack of understanding of the educational system, lack of access to schools and people with higher educational backgrounds all seem to be common challenges for the Hispanic students (Gallagher, 2008).

Furthermore, researchers have recognized the cultural and behavioral differences among Hispanic students as compared with their counterparts from other ethnic and racial identities. Some research has even noted apparent differences in learning styles. Problem The disparity between baccalaureate completion in Hispanic students, those students of Hispanic origin, from Spain or any Spanish speaking country from South America or Central America, and the general population has been particularly significant in North Carolina (Haile & Nguyen, 2008). However, six-year graduation rates for Hispanic students from the University of North Carolina system showed little evidence of this increase; remaining consistently lower than all student average and significantly lower than the average for Caucasian students. There have been a number of research projects in recent years that have documented qualitative reasons why Hispanic students have been reluctant to go to college and the factors that contribute to their success and failure at institutions of high education (Coleman, 1990).

Cultural influences on learning preferences have been theorized as one such factor. The purpose of this study is to determine if there are discernable, quantifiable differences of math scores for undergraduate Hispanic students as compared to non- Hispanic undergraduate students. The study quantifiably categorized math scores using Felder and Soloman's (1991) Index of Learning Styles, or ILS. The ILS was designed to assess preferences across four dimensions or domains: active/reflective, sensing/intuitive, visual/verbal, and sequential/global. Analysis on the categorized learning styles was conducted to look for significant relationships between learning style and ethnic identity. Further analysis was done to look for interaction effect in relationships and differences of learning styles based on ethnic identity and gender (Abedi, 2008). This information was utilized to make recommendations on methodological

strategies for educational activities, services and environments that address the learning needs of the Hispanic population who attend state-funded, or "public," post-secondary institutions.

Relationships between Ethnicity and Student Achievement

The ethnic achievement gap was significant and long-standing. The Coleman Report was the first major study to use student characteristics, including ethnicity, as an index to measure student achievement. The authors concluded that more than 70% of the variation in student achievement lies within the same student body rather than between schools. These results were noteworthy, in that Coleman (1990) argued that student characteristics played a bigger role in influencing student achievement than teachers' characteristics, school facilities, and students' attitudes. The impact of student characteristics did not diminish over the years. The Coleman Report was also one of the first large-scale analyses of student achievement to analyze ethnic difference in student achievement (Coleman, 1990).

Since the Coleman Report, scholars continued to study plausible influences on the achievement gap. Jencks and Phillips (1998) reviewed every national survey of high school students since and including the Coleman Report of 1965 and found that the ethnic achievement gap decreased over time, but Whites was still overrepresented in the upper percentile on all assessments including scientific, technical, vocational, and military tests. Escamilla, Mahon, Riley-Bernal, and Rutledge (2003) found a large gap in White achievement Math scores after analyzing third and fourth grade Colorado state assessment scores in 1999, 2000, and 2001 (Abedi, 2008). The English-speaking and Spanish-speaking Hispanic students were better in Math Scores as compared to Whites.

Sanchez et al. (2004) found a similar racial achievement gap when they reviewed the state reading assessment scores of students in grades 3 through S and grade 10 in a school in a large city in Texas. Hispanic students scored significantly higher than White, Asian, and African American students in Mathematics. There was a decrease in the test score gap as students progressed from elementary to middle to high school, but the gap was still considerable. The results were comparable to those of Haile and Nguyen (2008), who investigated eighth-grade students' academic achievement in Mathematics, Reading, and Science using 2000 National Education Longitudinal Study (NELS2000) data. Although the gaps varied by content area, there was a significant achievement gap between the different racial groups: Hispanics and Blacks scored significantly higher than Asians and Whites in Mathematics. The gap between Hispanics and Blacks was the smallest. (Alexander, 2001) Stiefel et al. (2006) also found significant disparities in standardized test scores for White and Black students and White and Hispanic students in New York City elementary and middle schools. The best predictor of the ethnic achievement gap in any one year was the performance of students in previous years, which was higher for Hispanics and Blacks (Stiefel, 2006).

Whereas much of the achievement gap research existed at the elementary level. There was a notable study of ethnic achievement at the secondary level. Borg et al (2007) analyzed over 5,000 tenth-grade students' Florida state assessment Math and Reading scores in a public school district after the assessment was required as a part of the high school graduation requirements. Borg et al (2007) concluded that race was an important factor regarding proficiency. The assessment, stating, "An average Hispanic student has a 54% probability of passing on the first try". Because the Florida standardized assessment was a new addition to the graduation requirement, Borg et al. (2007) also studied the students who would have graduated

before the requirement but no longer met graduation requirements because of their test performance. Of some consequence to Hispanics, Borg et al (2007) found that when comparing students most at risk — those identified in the study with annual household incomes of less than $10,000 — Hispanic students do about as well as White students (Borg, 2007).

Differences in the Math Scores

TJs announcement that it will admit 273 Asians compared with 161 whites, 27 multiracial students, 13 Hispanics and six African-Americans raised the old canard that minorities are underrepresented at the nationally ranked magnet school, even though white students make up just a third of the incoming freshman class (Pierson, 2010).

What critics really mean is that blacks, Hispanics and other politically correct minorities are underrepresented. Somewhere along the way, Asians in Northern Virginia apparently ceased being victimized members of racial minorities and became what, exactly? Overachievers whose work ethic prevents real minorities from getting into TJ?

Such is the absurdity of trying to force multicultural dogma into what is supposed to be a race-blind merit system.

Asian students dominate TJs admissions process because they've been beating the competition at math and science ever since elementary school. You can argue whether the tough discipline imposed by Asian families is good for their children's psyches, but you can't argue with the academic results.

In fact, math and science test scores were the only criteria taken into account; even more Asian students would likely to be accepted at TJ. Written essays, teacher recommendations and grades are also taken into account, giving the rest of the pack including whites a subjective leg

up. But even that is not enough to keep white students from slipping to just 33.5 percent of the freshmen class next year, while the percentage of Asian students continues to rise (Gallagher, 2008).

The Fairfax School Boards Blue Ribbon Committee, established in 2004 to create a diversity plan for TJ, included a consideration of race and ethnicity as a plus factor in admissions. It failed spectacularly but only if success is defined as increasing numbers of black and Hispanic students, who make up 29 percent of the county's student population. Black and Hispanic admissions declined from 5.5 percent in 2005-2006 to less than 4 percent for the upcoming school year (Stroter, 2007). The same pattern can be seen in Montgomery County, where only 8 percent of freshmen at Montgomery Blairs highly ranked Science, Mathematics and Computer Science Magnet Program are black or Hispanic, even though they make up 46 percent of the school systems enrollment.

The diversity plan was a smashing success considering that 2008 was the first year Asians outnumbered white students, dramatically altering TJs racial and ethnic profile. But somehow they don't count.

Of course, the process of identifying students who are gifted in math and science and providing them with the appropriate level of instruction begins or doesn't begin in elementary school. In February, the Washington Post's Jay Mathews quoted Longfellow Middle Schools Vern Williams, one of the nation's top math teachers, who admitted that he has lost all faith in the TJ admissions process, comparing it to flipping coins (Pew Hispanic Center, 2008).

William's common-sense solution to the so-called minority gap is to get rid of all warm and fuzzy math programs at the elementary school level and teach real academic content to all students.

Diversity advocates don't blame Fairfax County Public Schools for not adequately preparing black and Hispanic students for the academic rigors of TJ because that would only expose the school systems focus on equality and diversity at the expense of academic excellence.

Instead, they continue to complain about a minority gap that pointedly excludes hundreds of minority students who manage to master math and science despite FCPS dumbed-down curriculum and conflicting social agenda (Orfield, 2006).

On May 25, the results are in: students state wide made slight gains on MCA tests this year, but the significant achievement gap between white and non-white students' remains.

Minnesota students made slight progress this year on standardized tests that determine if they're meeting state requirements to graduate from high school, but fewer than half of the state's 11th graders were considered proficient in math, according to test results released.

The data from the Minnesota Comprehensive Assessments also highlighted the academic achievement gap between white and minority students. The MCA includes the Graduation-Required Assessments for Diploma, or GRAD tests, of writing, reading and math.

For example, while 67 percent of white 11th graders met the state's math graduation requirement on the first try, only 24 percent of the state's black students, 32 percent of its Hispanic students, 32 percent of its American Indian students and 53 percent of Asian students did so. Worse, white students seem to be improving 11th grade math scores at a higher rate than black, Hispanic and American Indian students (Knudsen, 2010).

"It's pronounced because Minnesota tends to do very well, so those students that performs well, there's a bigger gap there," said John Alberts, Austin Public Schools Director of Educational Services. "Minnesota has received some attention regarding its achievement gap."

Education Commissioner Brenda Cassellius said it was good to see some progress overall, but the low scores among some of the subgroups - including racial minorities, English language learners and students with disabilities – were not acceptable.

"You can hardly be happy when you see some of the subgroups and the scores that they have," she said. "Obviously, that's very concerning and troubling. It's evident that we need to do something different. The status quo is not working (Contreras, 2009)."

She said the state needs to find successful approaches from within its school districts, highlight them, and then find ways to replicate those successes state-wide. "That really is a key to closing the gap," Cassellius said.

Tom Dooher, president of Education Minnesota, the state teacher's union, generally agreed with her approach of passing successful education ideas. "It's critical that Minnesota spread the academic excellence found in most of our schools to every classroom and every student in the state," he said.

The data released did not include breakdowns by district and school. That information is scheduled to be released on August 18. The results are interpreted in two ways, the first to determine how many students meet state standards for graduation and the other, slightly higher standard, to see if students are what the state considers "proficient" in math and reading (Barton, 2003).

Students are tested to see if they meet the state's graduate standards in writing in 9th grade, reading in 10th grade and math, in 11th grade.

The new data show that, state wide, 79 percent of 10th graders met the state's reading requirement for graduating on their first try, up one percentage point from 2010. In math, 59 percent of 11th graders met the standard, also a one percentage point increase from last year.

However, the share of the state's ninth graders who met the writing standard on their first try fell one percentage point to 89 percent.

Students are allowed to re-take the test if they don't pass on their first attempt and, under a law passed in 2009, they may not have to pass the math test at all. For the next four years, students who can't pass the math test can graduate if they finish their course work, take a remedial class and take the test twice.

"There's a very real understanding that, essentially, a student doesn't have to pass the test to graduate," Alberts said.

It's hard to tell by state wide scores if local districts like Austin will improve AYP scores this year. While districts got individual student results, in the form of letters to be mailed home telling students whether they passed or failed, districts did not get a summary of the results. Districts will get those results, along with the third through eighth-grade MCA results, in August.

The Minnesota Comprehensive Assessments measure proficiency in reading and math, as required by the federal No Child Left Behind law.

The data show 75 percent of Minnesota 10th graders were proficient in reading on the test, which held steady from 2010 and was up from 71 percent in 2008. In math, only 49 percent of 11th graders were proficient in 2011, up six percentage points from 2010 and 15 points from 2008.

The achievement gap among racial groups also was clear. Fifty-six percent of white 11th graders were considered proficient in math, but it was only 17 percent of black students, 23 percent of Hispanic students, 23 percent of American Indian students and 43 percent of Asian students (Velazquez, 2010).

Cassellius said the scores show that her department needs to look into how math is taught in the state. The standards haven't changed since 2003, and still fewer than half of all 11th graders are proficient, although that's up from only 34 percent in 2008.

"I believe we have to do something different in mathematics," she said.

However, Kent Pekel, executive director the College Readiness Consortium at the University of Minnesota, was more optimistic. He said comparing the 2011 math scores to 2006 shows strong growth among all groups.

While only 17 percent of black students were proficient in 2011, that's up from 4 percent in 2006, for example. The percentage of proficient Hispanic students jumped 13 points from only 10 percent in 2006. The share of proficient white students rose 23 points from 33 percent in 2006 (Haertel, 2010).

"It does show we are making some progress in math with moving more kids toward proficiency, but it also shows we have a core group of students in our high schools that are way low that bar," Pekel said.

Efforts to improve math achievement in public schools have demonstrated to be ineffective at the secondary level. In 2007, 31% of 8th graders nationally were enrolled in 8th grade algebra, yet 44% of high school graduates are required to take a developmental math course before enrolling in a college level mathematics course. While national and international assessments show that United States children in grades three through eight continue to score higher in mathematics proficiency, in relation to other countries studied, the increase diminishes at the high school level. It is clear that the mandated programs and new initiatives have not produced the desired results (Barton, 2003). Public schools are facing increased parental,

community and political pressure to insure that high school graduates possess the math literacy necessary for college and the work force.

It is important that school decision makers and educators have knowledge of the factors that contribute to a student's math literacy and ability to complete college level mathematics course after graduation. The research conducted through this study informs educators and delineates factors that affect the math literacy of high school graduates. Another compelling concern prompting this research stems from the conclusions reached by Adelman (1999). He found that students, who complete any mathematics course beyond Algebra II, doubled the odds of attaining a bachelor's degree. In fact, completing advanced mathematics in high school was a stronger predictor of college degree completion than socioeconomic status, ethnicity or parents' educational level. Since completion of a higher level at high school mathematics course makes college degree completion likely then our public school system is obliged to examine the factors that impact high school mathematics course completion (Contreras, 2009).

Current research and literature does not address how high school mathematics course completion and college mathematics readiness are affected by taking 8th grade algebra, by gender, ethnicity or socioeconomic status or by enrollment in an Advancement Via Individual Determination (AVID) program in high school. Independent studies have evaluated mathematics achievement related to gender, ethnicity or socioeconomic status, but there is a gap in research related to affect the multiple factors of 8th grade algebra, AVID enrollment, gender, ethnicity, and socioeconomic status has on high school math course completion and college mathematics readiness (Gallagher, 2008).

The purpose of the study is to evaluate the relationship between completion of 8th grade algebra, gender, ethnicity, socioeconomic status, and AVID enrollment and a student's high

school mathematics course taking patterns and college readiness in mathematics. One factor evaluated in this study, early accesses to Algebra and has been identified as the portal to higher-level mathematics course completion and math achievement. Adelman (1999) found that students who completed Algebra I in 8th grade earner higher grade point averages and took more advanced math courses. It is concluded that students who took Algebra I in 8th grade exhibited significantly higher rates of growth in student learning than students who were not involved in algebra. This study seeks to explore the relationship of early access to Algebra and high school mathematics course completion and college readiness (Haertel, 2010).

Another factor, enrollment in an AVID program, gained relevance based on the particular sample population studied in this research. AVID prepares underserved students for four-year college eligibility and makes college-preparatory curricula accessible to all students. AVID was implemented in the school district selected for this study in 2002. Since 2002 AVID has become well-established with positive results (Knudsen, 2010). Finally, research has demonstrated that the factors of race, gender and socioeconomic status at times serve as indicators for academic performance. Therefore, the relationship of student background characteristics and math course completion and college readiness was examined.

The study will be conducted at the school district level, in New York. The community has been identified as the fastest growing city of its size in the United States. The median income is $94,000, and 78% of residents have a college degree. At the time of the study, there are two comprehensive 9th -12th grade high schools. One of the unique characteristics of the educational program in the district is its commitment to establishing and supporting AVID. AVID is a college preparatory program for students in the academic middle and those who have typically been underserved. These students in the middle typically have “B” or “C” grade

averages and are academically capable but underachieving. AVID students may also come from a low socio-economic background or under-represented racial group. The students are most often the first in their family to attend college. AVID students are provided support to succeed in a rigorous academic curriculum so that they are prepared for enrollment in a four-year college or university (Orfield, 2006). High school AVID students enroll in an elective course and learn organization, goal setting, critical thinking, note taking and many other skills are necessary for success in Advanced Placement classes and in college courses. Well-defined, explicit curriculum is provided by the AVID program. The goal of the AVID program is to prepare students for admission to a four-year university and completion of a bachelor's degree. According to AVID (2006) 86.2% of students nationally applied for admission to a four-year university. Of these students, 76% were accepted to a four-year college or university.

The participants in this study will be the 841 high school graduates. The 2006 graduates attended one of two comprehensive high schools, both similar in demographics and alike in curriculum, or the district alternative school. The sample population will be 65& White, 18% Hispanic and 9 African American (Pierson, 2010). Twenty-three percent of the students are economically disadvantaged and 35% of students complete Algebra I in 8th grade. The subjects are chosen because they have a completed high school transcript and can provide data that have been analyzed and are accessible. Of the 841 students, those identified as receiving special education accommodations, requiring a reduction of the defined state curriculum, are excluded from the study. Students who graduated in 2006 were required to complete three years of high school level math and to pass each section of the Exit level Assessment of Knowledge and Skills. The high school math course selection includes Algebra I, geometry, Algebra II, math models, pre-calculus, Algebra III, calculus, and statistics. The district level mathematics curriculum

specialist defines and directs the mathematics curriculum that is taught at each level of instruction. Information for each of the variables will be provided through the school district's database (Stroter, 2007). Permission from the Institutional Review Board will be granted for the study. Data collection will be approved by the school district superintendent's designee.

Chapter 3: Methodology

This study followed the primary research method. That is the quantitative research method will be adopted for the collection of data.

Quantitative Research

Quantitative research is research involving the use of structured questions where the response options have been predetermined, and a large number of respondents are involved.

By definition, measurement must be objective, quantitative and statistically valid. Simply put, it's about numbers, objective, hard data. A scientifically calculated sample of people from a population is asked a set of questions on a survey to determine the frequency and percentage of their responses.

Research Instrument

Interviews will be conducted for the collection of data.

Data Analysis Procedures

The researcher will perform the analysis of the impact of ethnicity, gender, and parent involvement in student achievement using SPSS 16, a statistical analysis software program, with data from the five New York high schools. Hispanics are the focus of the study and Whites are used as the comparison group because they comprised the majority of the 2007-2008 tenth-grade AIMS. The analysis of descriptive statistics will assess the characteristics of the 2007-2008 New York tenth-grade AIMS students' Math and Reading performance levels. Frequency distributions

will show intervals of data and analysis of data according to NCLB disaggregation provided a point of comparison. The interpretation will be from the point of view of a school administrator, to understand the advantages and limitations of both approaches. Ordinary least square (OLS) regression will examine the influence of each variable while holding other variables constant. In addition, interaction terms will report where the introduction of such terms is both statistically significant and improve the fit of the model. The analysis of an individual provided an understanding of the school-level effects on student achievement (Velazquez, 2010).

The data will be entered in an Excel spread sheet and include an arbitrary, unique identifier for each student and AIMS demographic and achievement variables. The researcher will strip all records of personally identifying information. The researcher will then password-protected data and will store them in a secure room. The room will be secured at all times, and the researcher will maintain possession of the key to enter or exit the room.

Population

The population for this study is 2007-2008 New York tenth-grade students from the five Clarksville high schools including one New York alternative high school. Hispanics are the focus of the study and Whites are used as the group for comparison because they comprised the majority of students taking the 2007-2008 tenth-grade AIMS. Tenth-grade students participated in AIMS Math and Reading assessments during this school year, although there is a difference in the number of students who took the tests because enrollment and attendance on the days of each of the tests was different (Alexander, 2001). As per state regulations, all tenth-grade students take the AIMS Reading assessment on a specified day in October and the Math AIMS assessment on a specified day in April. Tenth-grade students are chosen because this is the first

grade level when high school students are able to take AIMS as a part of their high school graduation requirements.

White students constitutes the largest proportion of the New York AIMS Math and Reading tenth-grade student population Hispanics represented the second largest ethnic group and outnumbered the other three ethnic groups (i.e., Asians, Blacks, and Indians) combined. Whites (57.81% or math and 57.52% or reading) comprised over half of the total tenth-grade population who participated in AIMS Math and Reading, whereas Hispanics (24.93 or math and 25.37h for reading) made up about one-quarter. School B has the most representative school population (58% White and 22% Hispanic). School enrolled fewer Whites (47% and more Hispanics (38% than the overall New York population. Conversely, the populations at School C and School D served a greater percentage of Whites than Hispanics (School C was 72% White and 16% Hispanic; School D was 65% White and 17% Hispanic) compared to the overall New York demographics (Contreras, 2009).

Chapter 4: Anticipated Results

Although a single study cannot provide a definite answer for increasing student achievement, the findings from this study will have important implications for school leaders to more positively shape student achievement by better understanding achievement in relation to student characteristics. The student characteristic that had the most dramatic impact on Hispanic student achievement in New York is parent emphasis. This section first reviews the current practice for increasing student achievement and then offers suggestions to school leaders, based on the findings of the study, to further increase Hispanic achievement on AIMS in other subjects, as well. The conclusion and implications presented is from the perspective of a school administrator in New York. There currently are multiple ways to assess student achievement in New York, including teacher assessments, district assessments, and state assessments.

To prepare students for the different assessments to measure student achievement, teachers in New York generally use a backward-design approach to lesson planning, by which they begin planning based on the overall goal of the lesson or unit. The overall goal includes objectives aligned to district benchmarks, district benchmarks line up to state standards, and state standards align to AIMS. Once teachers develop the purpose of the lesson, they create their assessments and then plan lessons based on those assessments. Teachers reflect on student achievement data from the assessments individually or with their departmental colleagues, to plan future enrichment or learning opportunities for students. Student achievement measured by district benchmarks and state assessments (including AIMS) are generally reviewed at the departmental and school levels in collaboration with instructional leaders and administrators;

however, there is currently no primary focus on parent involvement in the construction of lesson plans or assessments.

In addition, school leaders will employ resources and support to impact student achievement positively. For example, the school administrator at the school where the researcher is employed subcontracts with a statistician to analyze AIMS data, including the impact of students' demographic characteristics on student achievement, and prioritizes strength and weakness achievement areas based on the data. School leaders will also develop and coordinate professional development opportunities for teachers. There will also be intervention programs, tutoring sessions, and parent-teacher conferences to assist students in meeting achievement standards, but, again, there is no overall focus on parent involvement.

The current practices described above support student achievement but do not directly address the findings from this study. Specifically, New York must focus on parent involvement in studies, to have the most positive impact on other ethnic students' achievement, and focus on Hispanics becomes increasingly important as the Hispanic population continues to increase in size. The study has implications for the entire country, given projections that the current demographics in Arizona mirror what the demographics of the entire nation will be by 2025. To make Hispanic students better in all other subjects, they need to focus on their English. First, school leaders must hire the best teachers to teach EL students. A high- quality EL teacher has the proper certifications (EL and English) and demonstrates mastery of content knowledge and pedagogy. Placing the best teachers in EL classrooms will maximize learning for students and demonstrate a commitment to help the lowest performing students achieve at a higher level.

The second recommendation is to have multiple master teachers share the EL student caseload. A group of teachers, instead of one or two teachers, improves the articulation of teaching and learning. The addition of EL teachers also allows more teachers to share the focus of increasing EL student achievement and offers teachers an opportunity to teach other classes, as well. In this model, EL teachers should teach EL students as well as regular and advanced EP students. This helps teachers better understand and prepare students for the next level. For example, an EL student begins with instruction in an EL classroom and then, as the student become proficient in English. The student progresses to a regular or advanced EP classroom. A teacher who teaches the different levels better understands the skills needed for the EL student, to be successful at the next level.

The third recommendation is to provide EL teachers with ample professional development training and support. The EL teachers should be encouraged to participate in trainings focused on school-wide initiatives, so they are able to share the possible impact of such programs on EL students as well as to help plan for the successful implementation of such initiatives. The EL teachers also should attend regular EL content and pedagogy trainings to stay current on research-based best practices including understanding the importance of assessment construction to ensure students are tested on the content skills and not language skills.

The final recommendation is for the well-trained, well-supported master EL teachers to serve as instructional leaders for the school. The instructional leaders play an important role in influencing the culture of academic excellence for all students. They participate in state and district committees, to help shape policy, stay abreast of current research-based best practices, and serve as mentors and instructional coaches to other teachers. Arizona school leaders are at the forefront of change in the American public, educational school system. With a growing

Hispanic population, including a large Hispanic EL population, school leaders must embrace the challenge to impact Hispanic achievement positively. The efforts of Arizona school leaders will have far-reaching effects on the rest of the nation that is experiencing, or soon will experience, a changing demographic population. School leaders must act now to prepare our youth to be productive leaders in our expanding global market.

Chapter 5: Conclusion

The study reviews the methods of research that will be used in conducting this study, also the consequences of conducting this research, and summarizes the results. This research will posit recommendations for school leaders and proposes suggestions for future research on other ethnic student achievement. The purpose of this study is to explore the difference between Hispanic and other students' achievement in Mathematics, in New York. The study will be a quantitative analysis of the 2007-2008 New York tenth-grade students' state assessment AIMS scores exploring the relationships between student characteristics and student achievement. The population includes the New York tenth-grade student population (i.e., 2,491 students for Math and 2,507 students for Reading), as tenth grade was the first grade level when high school students attempted to meet the standards on AIMS as a part of their high school graduation requirements. Hispanics are the focus of the study and Whites are used as the group for comparison because Whites comprises the majority of the sample population (Abedi, 2008).

The study will review the extensive empirical research related to student characteristics and achievement. Findings in the empirical literature which characterized ethnicity, gender, and English proficiency as important factors associated with student achievement informed the focus of the study. Preliminary descriptive statistics of 2007-2008 New York tenth-grade student achievement on AIMS Math and Reading tests confirmed the effects of ethnicity, gender, and English proficiency on student achievement demonstrated in the empirical literature. The method of analysis will include frequency distributions to show intervals of data, as well as data analysis of student achievement scores according to the NCLB disaggregation model as a point of comparison (Borg, 2007). There also will be a linear regression analysis of whether student

characteristic variables, as well as special education and individual high school variables, predict students' average scale scores. Finally, findings on how each of the student characteristics impacted student achievement using the NCLB egg carton analysis, will report how the student characteristics affected student achievement by simultaneously combining the variables, and will provide predictions on future New York student achievement using a linear regression (Knudsen, 2010).

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