ACCESS FOR ALL

A Thesis

by

LINDA LEA MERENDA STEARNS

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

May 2010

Major Subject: Curriculum and Instruction

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Approved by:

Co-Chairs of Committee,	Mary Margaret Capraro
	Robert M. Capraro
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ABSTRACT

Access for All. (May 2010)

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Co-Chairs of Advisory Committee: Dr. Mary Margaret Capraro
Dr. Robert M. Capraro

This thesis reviews the enrollment policies and procedures for advanced and college prep classes in a central Texas school district to determine if there is fair and equitable access for all students. The paper contains two major components. The first is quantitative study of the four entrance requirements for 8th grade Algebra I Pre-AP at a central Texas middle school. The purpose of this study is to determine the necessity of these requirements by showing which if any of these prerequisites predicts the how the students will perform in Algebra I. The results have determined that only the students' scores from their 7th grade advanced mathematics course correlated well with the students' scores from their Algebra I class. The second component is a qualitative study to determine if the parents of the district's secondary students in have sufficient knowledge of advanced courses and how to enroll their children into advanced classes when warranted or desired. The study determined that parents had insufficient knowledge of advanced courses and the districts strict enrollment policies. This paper ends with recommendations for the district on how to make advanced course more accessible for all students.

DEDICATION

To my father and my mother who take great joy and pride in all the little things I do

ACKNOWLEDGEMENTS

I would like to thank my committee co-chairs, Dr. Mary M. Capraro and Dr. Robert M. Capraro, as well as committee member, Dr. J. Maurice Rojas, for their guidance and support throughout the course of this research.

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Finally, thanks to my to my daughters for their patience and to my husband for his encouragement, love, and great listening skills.

NOMENCLATURE

ACT	American College Test
AP	Advance Placement
AVID	Advancement Via Individual Determination
GPA	Grade Point Average
SAT	Scholastic Aptitude Test
TAKS	Texas Assessment of Knowledge and Skills

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CHAPTER I

INTRODUCTION: ACCESS FOR ALL

Education is the way to social and economic success (Kane, 2004). Equal educational opportunity for all students is something educators and policy makers can agree on. Accountability measures such as No Child Left Behind or Race to the Top constantly pressure school practitioners to close the achievement gap. Top academic classes are frequently mostly composed of White students, while less rigorous classes are disproportionately composed of minority and low socioeconomic status students (Mickelson, 2001). One road towards closing the achievement gap is for all students to have equal opportunity for advanced or college bound classes. But some schools, in an effort to educate with consideration of individual differences, place students in classes based on their measured interests and capabilities. These schools place requirements on students to enroll into advanced classes. They restrict enrollment to those who demonstrate an ability to master the material. In a recent polling by the College Board of Advanced Placement (AP) teachers, they found that the teachers are torn. On the one hand these teachers see the benefits of accepting more students into AP courses, on the other hand they are concerned that the quality of the students will suffer. Trevor Packer,

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This thesis follows the style of *American Education Research Journal*.

the College Board's vice president for the AP program acknowledged that if screening mechanisms are used they must be careful not to block the access for minority and disadvantaged students (Sawchuck, 2009).

In an affluent central Texas school district located in a college town whose demographics are 61% White, 16% Hispanic, 14% Black, and 9% Asian, success in academics and especially college readiness is a major theme. Their state standardized test score are high, 73% of their students graduate on the recommended plan, 69% of their students take the Scholastic Aptitude Test (SAT) or the American College Test (ACT), 87% of their students who take Advance Placement (AP) tests score above criterion, and currently 25% of their high school students take one or more advanced classes. A place for improvement in this high performing district lies with the underrepresentation of minority and disadvantaged students in their advanced and college prep courses. In interest of providing more specialized instruction this college town district sorts and groups students based on an assessment of academic ability. This is a long-standing organizational practice known as tracking (Rubin, 2006). Concerned about increasing the number of disadvantaged students into advanced courses, the district has implemented programs such as Advancement Via Individual Determination (AVID). But research states that schools that place students in classes based on their measured interests and capabilities tend to have minority students in a disproportionate assignment to lower tracks and almost absent assignment to accelerated tracks (Mickelson, 2001).

In effort to help the district increase minority and disadvantaged student enrollment into advanced classes, investigated in this thesis is the districts' advanced class enrollment procedures and policies through two lenses. First, the variables of four quantitative requirements for entry into 8th grade Algebra I Pre-AP at this central Texas middle school were statistically analyzed. Algebra I Pre-AP was chosen because algebra is an advanced foundational mathematics course, the number of students taking algebra in 8th grade is growing tremendously on a national level, some states now make it a requirement to take the class in 8th grade, and because Algebra I Pre-AP at this middle school had particularly numerous and restrictive requirements. To qualify for entry into this advanced mathematics class, students must achieve a 90 or above on one of the two parts of an Algebra assessment test, have a 90 or above in their previous honors mathematics class, achieve a commended status on their state standardized mathematics test and have a recommendation from their previous mathematics teacher. The purpose of this study was to determine if each of the quantitative requirements for entry are predictive of the achievement gained in the algebra class. If not, then the only unintended result from the requirement is to deter students from rigorous mathematics. The second study also addressed the advanced class accessibility but from a qualitative perspective. The various advanced classes at the central Texas school district have entry requirements that may differ. Some may require as little as a teacher recommendation and others may have numerous requirements such as Algebra I Pre-AP. Students who do not fulfill the requirements but still desire entrance into the advanced course, may have their parent or guardian attend a meeting and sign a waiver form. This becomes an

educational equality issue when parents of certain races, classes or ethnicities understand the high track entrance potential, polices and procedures to a much greater level than others. This portion of the study qualitatively interviewed a diverse group of secondary school parents from the central Texas school district. Parents were questioned about their experience with and knowledge of the policies and procedures for student enrollment into advanced classes. To ensure equality of education for all, all parents must have a clear understanding of the value of and access to advanced classes. The researcher examined whether parents had sufficient knowledge to make appropriate decisions for enrolling their child into the classes best suited for their academic success. Through examining parental perceptions, the district's tracking polices and procedures were investigated to determine whether they promoted or depressed the performance of both high and low achieving students.

Students deserve equal access into the high track classes. How they get placed into these classes varies by school district or school. Policies can range from an open enrollment that allows all who have interest into a class, to a set of restrictive requirements used to ensure the quality of the student. The next two chapters of this thesis investigated a central Texas school district's advance class entry policy. Chapter II quantitatively looks into the numerous and restrictive policies for enrollment into Pre-AP Algebra taken at the 8th grade level. Scores on four entrance requirements are correlated to students' final grades in the Algebra 1 class to determine the predictive values of these measures. Each of these required scores were examined to determine if they were good predictors of how the students performed in Algebra class and, therefore, suggesting if

each specific requirement for enrollment was truly necessary. Assuming that some, if not all of these requirements, were necessary, parents must have an understanding of the policies and procedures to enroll their child into Algebra I Pre-AP as well as any other restricted advanced class. Chapter III utilizes a qualitative approach to determine if parents of the same districts' secondary students were aware of or had any experiences enrolling their children into advanced classes. Parents' perceptions of the districts policies and procedures were discussed. Conclusions from Chapters II and III are explained in Chapter IV. Additionally, recommendations for student equality and success for the district educators and administrators are explicated.

CHAPTER II

RAMIFICATIONS OF PREREQUISITE TESTING FOR EIGHTH GRADE ALGEBRA I ENROLLMENT ON MIDDLE SCHOOL STUDENTS IN A CENTRAL TEXAS SCHOOL

Introduction

A strong mathematics background is key to high scores on college entrance exams and post- secondary school success. The National Council of Teachers of Mathematics (NCTM, 2009) suggested in their recent newsletter, "Knowing Algebra opens doors and expands opportunities, instilling a broad range of mathematical ideas that are useful in many professions and careers" (p. 1). The importance of learning algebra is universal but when to teach students their first formal algebra class is not. NCTM (2009) stated their position,

> Only when students exhibit demonstrable success with prerequisite skills – not at a prescribed grade level – should they focus explicitly and extensively on algebra, whether in a course titled Algebra I or within an integrated mathematics curriculum. Exposing students to such coursework before they are ready often leads to frustration, failure, and negative attitudes toward mathematics and learning. (p. 1)

Brookings Institute researcher, Loveless (2008) stated,

> If students enter algebra classes without the preparation to succeed, then algebra teachers must find a way to fix the problem . . . In 8th grade, they [the misplaced students] are expected to learn in a single year, the six years of math they have not yet learned along with a full year of algebra. (p. 11)

Yet, more students are taking Algebra in the eighth grade than ever before. From 1990 to 2000, national enrollment in algebra courses increased from 16% to 24% of all eighth graders (Loveless). States such as California and Minnesota have recently required all students to take algebra in the eighth grade starting in 2011 (Jacobson, 2008). Although Texas has not made algebra in the eighth grade mandatory, the state legislature has raised the high school graduation requirements by having all high school students on the recommended plan to take four years of mathematics starting with the 9th grade class of the 2007-2008 school year. Texas high school students who are on the recommended plan must take these mathematics classes: Algebra I, Algebra II, and Geometry. More Texas students are starting their high school mathematics requirement by enrolling in Algebra I in the eighth grade. Increasingly, education experts argue that early access (pre-high school) to algebra determines a student's future mathematical experiences. Results from research conducted in New York showed that early access to algebra has an effect not just in mathematical knowledge but also in "socializing" students into taking more mathematics courses and more advanced mathematics courses (Smith, 1996). Smith also concluded that, "early access to algebra has a sustained positive effect of students, leading to more exposure to advanced mathematics curriculum and, in turn, higher mathematics performance by the end of high school" (p.148). Other advocates for acceleration of algebra argued that it created greater equity of learning opportunity for students of various demographic backgrounds, which provided a potential base for all students to gain increased mathematical literacy

(NCTM, 2000). Students who take algebra in junior high or middle school have greater mathematics attainment in high school (National Center for Education Statistics, 1995; Useem, 1993).

Achievement Gaps. Mathematics achievement gaps persist among minorities (Capraro, Capraro, Yetkiner, Rangel-Chavez, & Lewis, In Press). "Trends in mathematics achievement suggest that the gap between some minority and White students persists and may even be widening." (Bol & Berry, 2005, p. 33) Providing equal opportunity for admittance to rigorous mathematics courses can help to minimize differences in academic achievement. According to a University of Illinois study, "More challenging middle school math classes and increased access to advanced courses may be the key to closing the racial academic achievement gap." (Science Daily, 2009) Lack of early mathematical success and poor attendance may have contributed to lower performance by Black students. (Nichols, 2003; Young et al.). Some studies suggest that student attitudes (Lubienski, 2000), self-efficacy and identity (Ma & Kinger, 2000) also play a roll with Black and Hispanic students. "Other explanations target teacher expectations, teacher quality, tracking, testing, family characteristics, and student characteristics. It seems plausible that the gap in mathematics achievement is due to an interaction among several of these factors." (Bol & Berry, p. 33)

Many studies have shown that girls outperform boys in all major subjects (Epstein, Elwood, Hey, & Maw, 1998; Wong, Lam, & Ho 2002) and they also graduate from high school with higher grade point averages than their male peers (Perkins, Kleiner, Roey, & Brown, 2004). Explanations given for this gender difference include

boys' discipline problems and their unwillingness to complete assignments (Connell, 1989; Mac An Ghaill, 1994) and girls' conformity to school rules (Gipps, 1996). It was shown in Wisconsin that, "Girls demonstrated a stronger need to be perceived as successful and competent by their peers and teachers. They were very concerned with appearance and worked very hard to project an image of being smart" (Dentith, 2008, p. 157).

Entrance Requirements. Many high schools, colleges, universities and other institutes for learning have entrance requirements for entrance admission or course registration. If acceptance is based on requirements such as test scores, the validity of the test should be questioned. Common entrance exams such as the Student Achievement Test (SAT) or the Graduate Record Exam (GRE) are often questioned. As written in one study, "The SAT is not an accurate predictor for either white or black students; and it serves as a biased predictor for black students when forecasting academic performance in college" (Lawlor, Richman, & Richman, 1997). Another study found that the GRE was not racially equal.

> A significant number of Black graduate students enrolled at the University of Florida in 1982 had higher grades than White students who had performed better than they on the Graduate Record Examination (GRE). This suggests that the GRE is insensitive to the factors that affect Blacks' academic performance.

Although school districts may agree that taking Algebra I in middle school is beneficial for most students, the school districts do not agree on enrollment requirements to the advanced class. Some experts viewed an open enrollment as an equity issue. "Expanding eighth-grade algebra to include all students opens up opportunities for

advancement to students who previously had not been afforded them, in particular, students of color from poor families. Democratizing eighth-grade algebra promotes social justice" (Loveless, 2008, p. 11). Most school districts like the idea of more students taking algebra in the eighth grade but want a high quality student and in turn, the rigor of the class to remain high. To insure this, certain school districts have certain qualifications that they recommend each student must have for entrance to algebra class such as grades, standardized test scores, and teacher recommendations. Some school districts adjudicate teacher performance based on students' standardized scores which discourages teacher support for open enrollment policies in advanced mathematics classes (Klopfenstein, 2004) because the policy ties student academic achievement to their performance. The teachers are then hesitant to admit low performing students.

Algebra I is the foundation for all high school mathematics. "As most administrators know, algebra opens doors to all high school math, says Cathy Steely, a senior fellow at the University of Texas at Austin's Charles A. Dana Center" (Vogel, 2008). Success in this preliminary high school level course is necessary for success in subsequent mathematics classes. It is no wonder that school districts want to have careful placement for early entrée. But are all the requirements for early entrée into Algebra I for this central Texas middle school truly necessary? Do they all equally predict success or failure in Algebra I or is one measure more telling than others?

Methodology

This study contains an analysis of the four quantitative requirements of a central Texas middle school for early access into Algebra I to determine if these mandates correlate to students' performance in Algebra I. Data for all students (n = 129) enrolled in Algebra I in the 2008 – 2009 school year at the selected school will be analyzed. The data sets include seventh grade Pre-Algebra scores completed in May 2008, TAKS mathematics scores, taken in the spring of 2007, scores from the two parts to the Algebra Readiness exam taken in the spring of 2008, and the students' final grades for Algebra I completed in May 2009. This study analyzed how relevant the school district's requirements were to the final algebra grade. My hypothesis is that the students' Algebra grades will most closely correlate with how well they performed the previous year in Pre-Algebra and that the scores from the students' TAKS test and Algebra Readiness Exam have little relevance.

The Sample. This college town middle school was selected for this study because it has a high percentage of middle school students enrolled in Algebra I Pre-AP. As shown in the figure 1 bar graph, the SES of this school was representative of the district, however, the ethnic make-up of the Pre-AP Algebra I class was not representative of the school or district. The Algebra I Pre-AP students in this study were 85% White, 7% Hispanic, 4% Black, and 4% Asian. The demographics of the sample were recorded from attendance records and were obtained by a middle school mathematics teacher. The demographics for the school were 67% White, 15% Hispanic, 9% Black, and 9% other. The school demographics were found from the Texas Education Agency's (TEA) web site since the

school did not have this information readily available. Asian students and mixed race students were included in the other category. The students represented in the school's demographics are those who have taken the state's standardized test. Many special education students were not included in this count. The district demographics can be found on the district's web site. They were reported as 61% White, 16% Hispanic, 14% Black, and 9% other. Other includes mixed race and Asian students. Participation by Hispanic and Black students in Algebra I Pre-AP represented less than half the district or school enrollment percentages. This phenomenon was important to examination of the impact of policy on Algebra I Pre-AP matriculation rates for Hispanic and Black students.

The Data. The data collected consisted of the students' scores used by the district to determine eligibility for enrollment into eighth grade Pre-AP Algebra 1. These include students' 6th grade Texas Assessment of Knowledge and Skill (TAKS) mathematics scores, 7th grade mathematic class grades, and Algebra Readiness Exam scores, parts 1 and 2. These four measures were compared to the students Algebra 1 final grades. Other data collected consisted of the students' ethnicity and gender. Data from students enrolled in the Algebra I class were eliminated if the scores from all the variables were not available. The total number of students enrolled in Algebra I at the middle school in 2008 – 2009 was 156 but scores on all the variables were available for 129 students, who comprised the current sample.

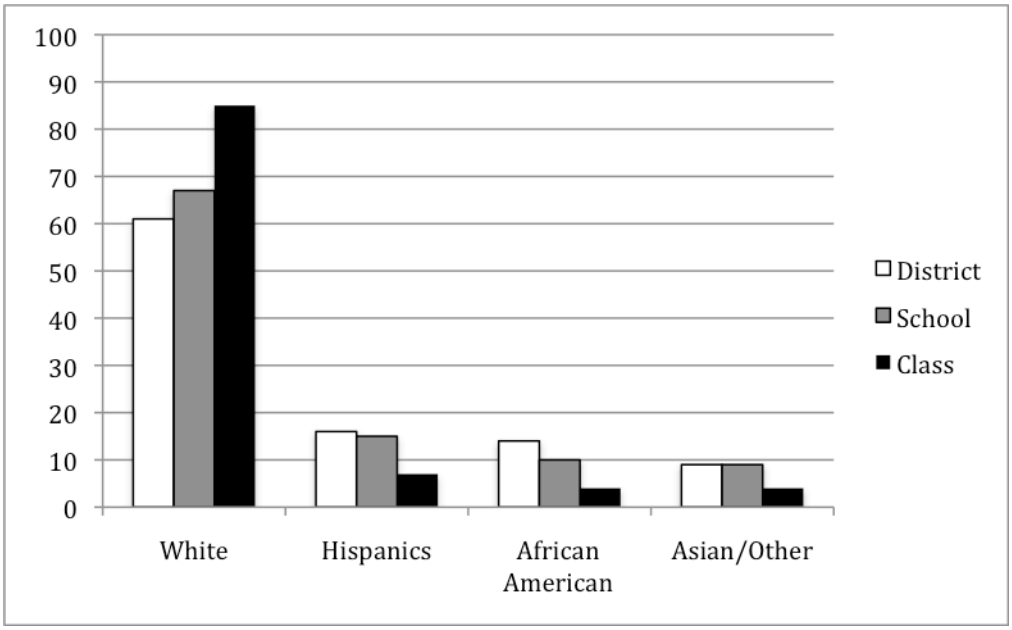

Figure 1. Ethnicity bar graph by percentages.

The Method. The variables included student scores from the Algebra Readiness Exams, parts 1 and 2, the students TAKS scores in mathematics, seventh grade Pre-Algebra class grades and the students final grade from their Algebra I class. The Algebra I grade was found by taking the mean of the fall and spring semesters. A parametric univariate analyses of variance was performed. If data failed to meet normality assumptions non-parametric tests will be used. Confidence intervals will be reported as appropriate. The scale, mean, range, and standard deviation of each variable are listed in Table 1.

Table 1.

Descriptive Statistics of Variables.

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Algebra Readiness 1	117	57	43	100	81.82	12.280
Algebra Readiness 2	116	75	25	100	77.34	14.276
TAKS Math Score	129	22	78	100	95.27	4.655
Pre-Algebra Grade	129	19	81	100	92.95	4.349
Algebra 1 Grade	129	33.00	66.50	99.50	89.7636	6.72364
Valid N (listwise)	115		0		0	

Entrance into Algebra I Pre-AP

The school district has two middle schools and their entrance policy into Algebra I Pre-AP is the same for both. Entrance for the advanced track in mathematics begins with the 4th grade TAKS mathematics exam. Students who achieve a commended status on the fourth grade exam and who have their teacher's recommendation are placed into advanced sixth grade mathematics. Students who earn a 90 or above in sixth grade advanced mathematics and who have their teacher's recommendation may enroll in advanced seventh grade mathematics. Students enrolled in the advanced seventh grade mathematics who want to take Algebra I Pre-AP in the 8th grade must have the following requirements: (a) 90 or above in their seventh grade advanced mathematics class, (b) a raw score of 2400 or above on their 6th grade TAKS mathematics exam, (c) a 90 or above on one of the two parts of an Algebra Readiness Exam, and (d) current

mathematics teacher's recommendation. If a student fulfilled these requirements, they were automatically given access to Algebra I and labeled "Qualified". If the students fulfilled most of the requirements, but not all, and had administrative or teacher recommendation for Algebra I, the student was enrolled and but labeled as "Placed". If a student did not meet the requirements and did not have administrative or teacher recommendation then a parent could "Waive" them in. The waiver policy required parental signature on a document stating that the student may not drop the course once enrolled and that the parents understand that the district does not believe that the advanced mathematics is in the best interest of the student. In addition, parents were required to attend a meeting in masse with counselors and administrators. The district offered several meetings within the course of a week from which a parent can choose with at least one during school hours. Of the 125 student participants with complete record 35% were Qualified, 41% were Placed, and 24% were Waived in by the parent or guardian. Of the 30 students that were waived in, 81% were White, 6% were Hispanic and 13% were Black.

Results

Percentages of Qualified, Placed, and Waived in students were reported by ethnicity in Table 2. When broken down by ethnicity, 0% of the Black students, 34% of the Hispanic students, 34% of the White students and 83% of the Asian students were Qualified. The entire sample had 41% Placed students of whom 20% were Black students, 44% were Hispanic students, 44% were White students and 0% of the Asian

students were Placed in. The entire sample contained 24% Waived in by their parents of whom 80% were Black students, 22% were Hispanic students, 22% were White students, and 17% were Asian students.

Table 2.

Comparison of Algebra I Placement by Ethnicity.

Ethnicity	Qualified 35% of Sample	Placed 41% of Sample	Waived 24% of Sample
% of Black Students	0	20	80
% of Hispanic Students	34	44	22
% of White Students	34	44	22
% of Asian Students	83	0	17

The four data sets, Algebra Readiness Test Part 1, Algebra Readiness Test Part 2, 2007 TAKS scores for mathematics, and Pre-Algebra grades, were each graphed in a scatter plot with the student's Algebra 1 final grades to examine correlation with the students' grade in Algebra. Each scatter plot contained a solid linear regression line and a dashed line, $y = x$. The data points with a square shape represent the scores of students who were Waived in. The data points with a circular shape represent the scores of students who were Qualified or Placed.

The correlation between the Algebra Readiness Test Part 1 and the Algebra I grades was not strong ($r^2 = 0.223$, see Figure 2), therefore, there was no relationship between performance on the examination and performance in the course. On the scatter plot 86% of the data points were above the y = x line indicating that the Algebra Readiness Test Part 1 was more difficult for the students than the Algebra class.

The entrance requirement was met by 26% of the students, who scored 90 or above on the Algebra Readiness Test Part 1. Only 27% of the students earned an A (90 or above) average in the algebra class but did not score 90 or above on the test. The mean for the Algebra Readiness Test Part 1 was 81.8 percentage points whereas the mean for the Algebra 1 scores was 90 percentage points.

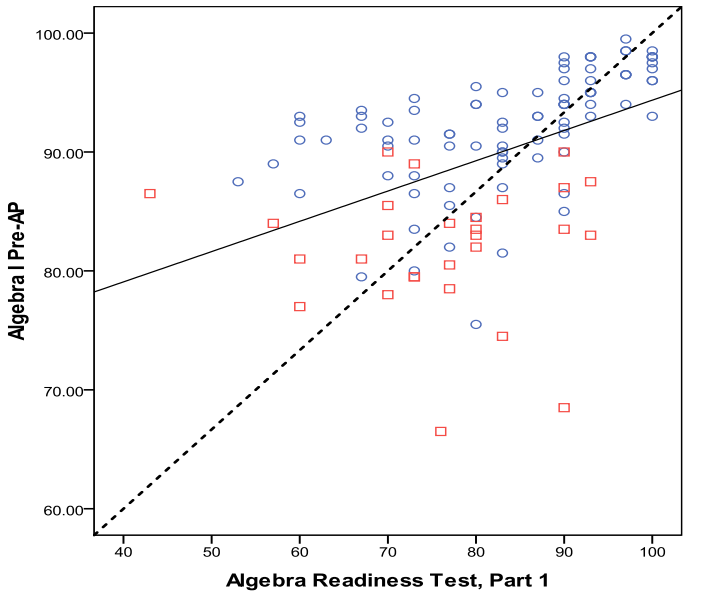

Figure 2. Algebra Readiness Test, Part 1 vs. Algebra I Pre-AP Scatter Plot.

The correlation between the Algebra Readiness Test Part 2 and the students'

Algebra grades (r^2 = 0.467, see Figure 3) improved a small amount from the correlation between Algebra Readiness Test Part 1 and the students' Algebra grades but still the relationship was spurious at best. Part 2 of the Algebra Readiness Test proved to be even more difficult for the students than part 1. 91% of the sampled students performed better in their Algebra class than they did on the test. Only 13% of the students scored a 90 or above on the test which was a partial entrance requirement. The mean for the Algebra Readiness Test Part 2 was 77.3 percentage points as compared to a mean of 90 percentage points for the Algebra I grades. The graph indicates that many of the students preformed very well in Algebra without doing very well on the assessment test. The results indicated that 30% of the students earned an A average (90 or above) in the algebra class but scored lower than a 90 on the Algebra Readiness Test Part 2.

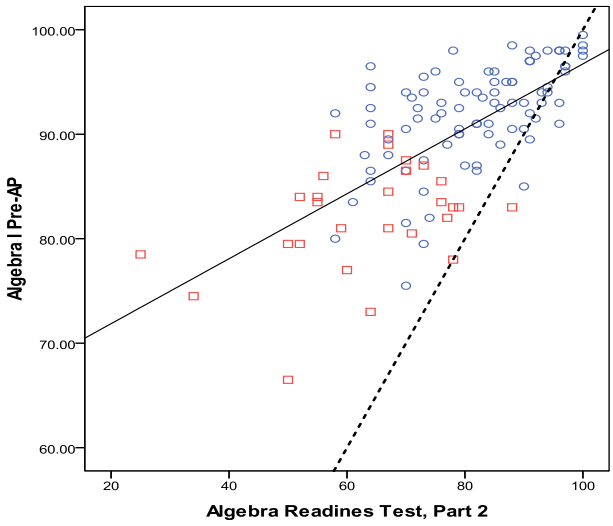

Figure 3. Algebra Readiness Test, Part 2 vs. Algebra I Pre-AP Scatter Plot.

The correlation between the students' TAKS scores and their Algebra I grades

was questionable ($r^2 = 0.221$, see Figure 4), therefore, no relationship was found between TAKS scores and Algebra I performance. The TAKS test scores were higher for most of the students than their algebra grades. Only 14% of the students did not have the required raw score of a 2400 or 90%. The mean for the TAKS test was 95.3 percentage points as compared to a mean of 90 percentage points for the Algebra I grades. In this graph the majority of the data points lie above y = x indicating that the students generally performed better on TAKS then they did in Algebra I.

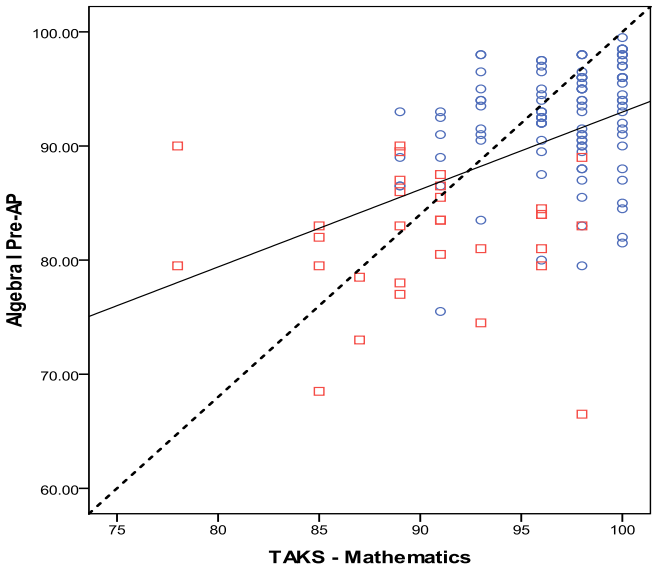

Figure 4. TAKS 6th Grade Mathematics Score vs. Algebra I Pre-AP Scatter Plot.

The scatter plot in Figure 5 was the correlation between students' 7th grade advanced mathematics grades and Algebra I grades ($r^2 = 0.666$). This correlation was much stronger than the correlations between the Algebra I grades and other measures.

The regression coefficient, r^2, was much higher for this scatter plot than the others. A majority, 84%, performed better in the seventh grade class than they did in Algebra I. The mean for the Pre-Algebra grades was 92.9 percentage points as compared to a mean of 90 percentage points for the Algebra I grades, a common occurrence as mathematics courses become more abstract and thus more difficult.

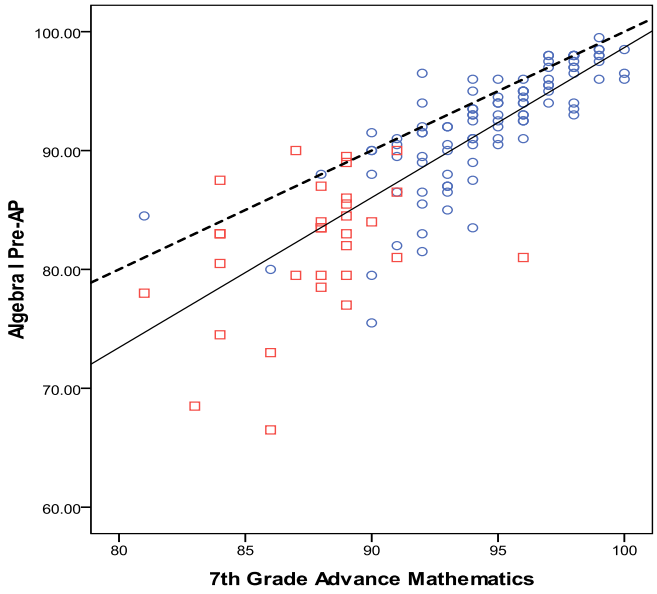

Figure 5. 7th Grade Advanced Mathematics vs. Algebra I Pre-AP Scatter Plot.

Figure 6 shows the 95% confidence intervals of the variables. As indicated in the graph, the scores from the TAKS math test were very high and with a small standard deviation, as opposed to the Algebra Readiness Tests which have much lower scores and a much larger standard deviation. The confidence interval that most closely resembles Algebra I is that of Pre-Algebra.

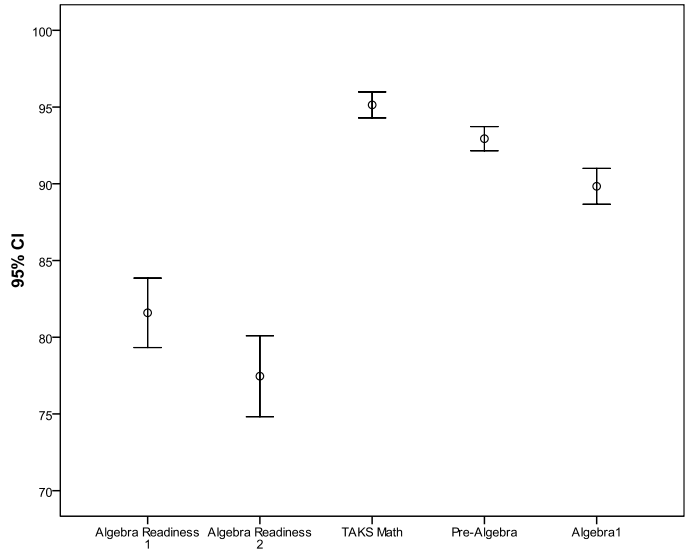

Figure 6. Confidence Intervals of Variable.

To compare females' and males' achievement on the Algebra I grades, 95% confidence intervals were computed and graphed for the mean Algebra I grades for females and males. Figure 7 illustrates two confidence intervals that do not overlap indicating that the difference between genders was statistically significant. The females' mean Algebra I score (M = 91.4 percentage points, SD = 6.11) was more than three points higher than males' (M = 88.0 percentage points, SD = 6.94) (cf. Cumming & Finch, 2005). The Cohen's d effect size was 0.52. Therefore, females outperformed males on Algebra I course grades.

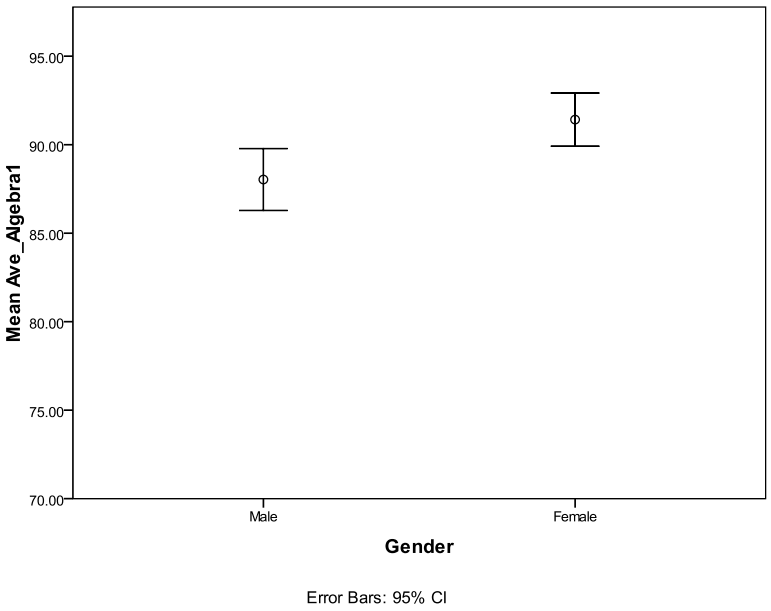

Figure 7. Gender Confidence Intervals.

As illustrated in Figure 8, confidence intervals were also used to compare the Hispanic and Black students' mean Algebra I scores to that of Asian and White students. The results showed that Asian and White students' combined mean Algebra I score (M = 90.25 percentage points, SD = 6.72) was statistically significantly higher than Black and Hispanics students' combined (M = 85.78 percentage points, SD = 5.45). It is important to note that because of the small total sample size of Black and Hispanic students, the parameter estimate for Black and Hispanic students were not as precise as the parameter estimate for Asian and White students which was depicted in the longer bar for this group in the figure. The Cohen's d effect size was 0.68.

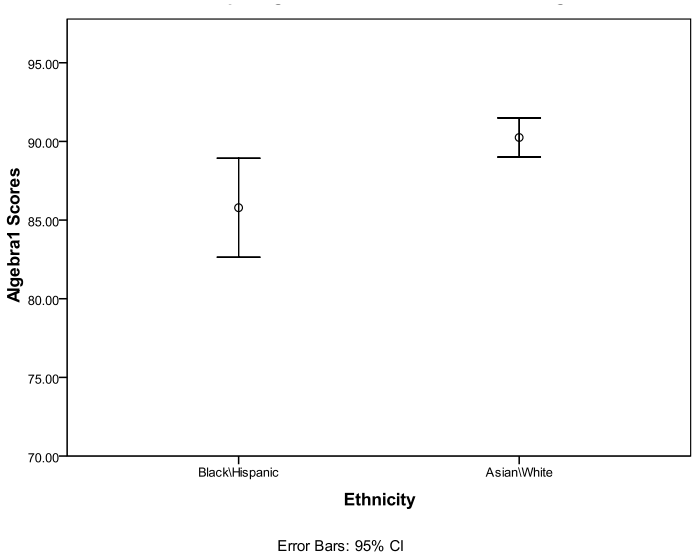

Figure 8. Ethnicity Confidence Intervals.

Finally in Figure 9 shows the boxplots of the Algebra I students as grouped by district entrance requirements. The median of the Waived students is approximately 10 percentage points below the Qualified students. Although the Qualified students did out perform the others, the waived students did perform well despite district recommendations.

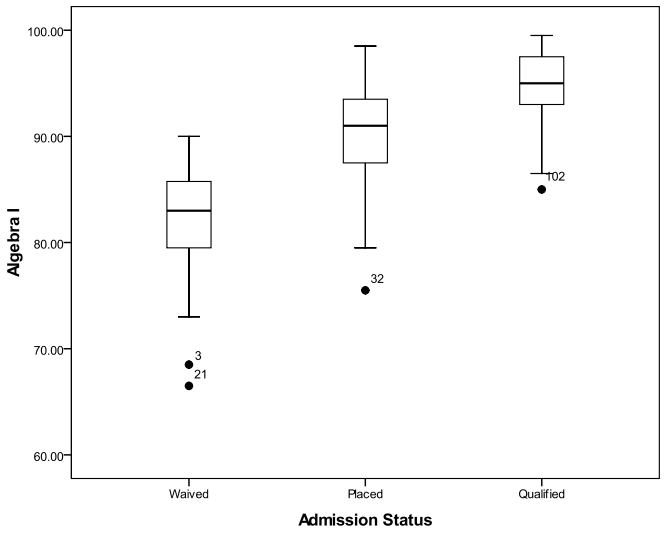

Figure 9. Boxplots of Waived, Placed and Qualified Students.

Discussion

High scores on entrance exams, TAKS test and class grades are all requirements for registering for the rigorous mathematics course, Pre-AP Algebra I, in the eighth grade. These requirements uphold the quality of the course taught if there is a correlation between how well the students do on these mathematical measures compares to how they perform in Algebra I. The data collected rebukes this theory. The correlation between the Algebra Readiness Test Part 1 and Part 2 is low to very low. The students seem to perform significantly lower on the tests than they do during Algebra class. The district policy implies that students should perform well, ninety percent or better, on the four admission-required items to be able to perform well in Algebra I. The data indicates otherwise. Students in this class often preformed well in Algebra I when they did not do

so in the Algebra Readiness Tests. The tests were not available for the author to view. The school counselor stated that the students' tests were not kept and that the teachers would be uncomfortable releasing a test that may be administered. Because the author could not obtain the teacher created exams, neither face nor content validity could be estimated. Students usually preformed worse in Algebra I then they did on the Math TAKS test. The closest indicator of how the students preformed in Algebra I was predicted by the students' seventh grade Pre-Algebra grades. Most students preformed better in their Pre-Algebra class than in Algebra I, but the difference was most often small.

Recommendations

Based on the analysis of the Algebra I students' data, none of the four quantitative requirements for entrance into Algebra I predict well the performance of the students in the Algebra I class. Regression coefficients for all four scatter plots are not strong. The requirements with the least value are the Algebra Readiness Test, parts 1 and 2. Without access to the actual test and the students' responses, a validity test could not be run. If the district must use this teacher written test, then school officials should lower the required score to 80 since only about 25% of the Algebra I students met the requirement of scoring a 90 or above on one of the two parts. The students' TAKS Mathematics scores also proved to be a poor predictor of success in Algebra I. The majority of the students had a commended performance on the TAKS test. Only 6% do not meet the high entrance-required score. Showing mastery on the state mandated

mathematics test is important. But when almost all the students reach a commended status, the test has little predictive value. If a prerequisite test is to be used, then the district should use a standard test where the validity has been tested. The last quantitative requirement for enrollment into Algebra I in the eighth grade is that the students earn a 90 or above in their advanced seventh grade mathematics class. The correlation between how the students preformed in Algebra I Pre-AP was moderate when compared to how well they performed in seventh grade. Yet, the scores from the seventh grade advanced mathematics class are the best predictor of how well they will fare in the following year. One should note that the scores in the Algebra class were about 3% lower than the scores in the seventh grade class. Administrators and counselors should look primarily, if not solely, on the students' seventh grade scores when deciding who should be granted early entry into Algebra I. Administrators and counselors should also listen to the seventh grade teacher's recommendation as well as the recommendations of the parents. Most importantly, they should listen and look at the needs and desires of the students.

Strict entrance requirements may insure the caliber of student enrolled, but these requirements can also deter diversity and dissuade many talented students. If the school district is concerned with increasing the percentage of students, especially minority students, taking rigorous math classes, then administrators and counselors may consider an open enrollment policy with prerequisite recommendations in place of requirements.

According to Matthews and Farmer (2008), students who completed Algebra in the eighth grade stayed in the mathematics pipeline longer and attended college at a

greater rate than those who did not. All students may not be ready for algebra in middle school but greater numbers of students may be capable of more rigorous mathematics. Responsibility lies with teachers, counselors, administrators, school boards and parents to encourage students to strive for the best education possible. Entrance requirements that have little correlation to actual performance can act more as a deterrent for diverse and talented students than as a placement aide.

Limitations

Although the data from all of the students enrolled in Algebra I at A&M Consolidated Middle School was accumulated, only data from those students who had scores from all four entrance requirements could be used. This eliminated data from approximately twenty percent of the students. The number of Black, Hispanic and Asian enrolled in Algebra I was significantly low, reducing the amount of statistical evidence.

The Algebra Readiness Tests, parts 1 and 2, were created by the mathematics teachers from the middle school. The school did not keep the students' original tests and answers. The teachers would also not release the original tests. Therefore, no validity test on the exams could be preformed.

CHAPTER III

ACCESS TO ADVANCED CLASSES

> *Taken in composite, this system is rather draconian in its treatment of all students and especially its disregard for students that may need additional support from the educational system to be able to participate on something approaching an even footing with students born into better circumstances.* -Mr. Robert Jackson

Introduction

Research has shown the importance of more rigorous curriculum for all students (Grier, 2002). Still, students from lower income families are well underrepresented in advanced and Advance Placement (AP) classes (Ndura, Robinson, & Ochs, 2003; Solorzano & Ornelas, 2004). To address this inequity, increasingly secondary schools nationwide are following the trend toward an open enrollment for AP and Pre-AP classes for all those who wish to enroll in them. "The motive for this trend is to empower students from minority groups and students of poverty to have access to courses that lead to higher success rates in college" (Winebrenner, 2006, p. 159). Teachers and wswwsadministrators agree that lower income students should have better access to advanced classes but they are not united on open enrollment policies. They disagree on whether advanced classes should be offered to all or only to those who have demonstrated ability to master the material (Sawchuk, 2009). Many are ambivalent about these policies. On the one hand they would like to expand Pre-AP and AP programs, but these educators are also concerned that lower quality students will diminish the rigor of the courses.

The competitive nature of AP classes can discourage open enrollment or enrollment without restrictions. Districts often judge an AP teacher's effectiveness on their students' AP test scores. "Judging the performance of AP teachers based on their students' AP exam results discourages teachers from maintaining open enrollment policies" (Klopfenstein, 2004). Consequently, it is often just the students who have been placed on the high track early on who have access to AP and college prep classes.

But it is the open enrollment practices that are aligned with College Board's Pre-AP philosophy, as evident in the College Board's purpose statements:

- Pre-AP is a concerted effort to fulfill the College Board's mission to prepare, inspire, and connect students to college and opportunity.
- Pre-AP prepares growing numbers of students, especially those traditionally underrepresented in AP courses, for the challenges offered by the AP program.
- Pre-AP teaches and reinforces crucial academic skills in the greatest possible number of students, beginning in the elementary and middle school years.
- Pre-AP enables a broader segment of the student population to benefit from a rich and rigorous curriculum (College Board, 2000, p. 1).

During a 2009 interview with Trever Packer, vice president for the College Board AP program, he stated, "It's asking the right questions about how we preserve the quality while expanding access" (Sawchuk, 2009, p. 1). Additionally he stated that,

> …screening mechanisms must be carefully designed or they could block access by minority and disadvantaged students. Too often in the past, students who have had the potential to succeed in AP were denied access. To deny a student the chance to exercise the skills they need to succeed in college – none of us want that on our hands (Sawchuk, p. 1).

Although tracking or sorting of students into advanced, on-level, or remedial classes is used to provide specialized instruction based on ability, it often does not have

positive effects for all students. There exists a substantial gulf between the intentions of tracking and the actual effects (Oaks, 1985). This type of sorting had positive effects for high achieving or gifted students (Hallinan, 2000; Terwel, 2005); the opposite was true for low achieving students (Gamoran, 1992; Terwel, 2005; Wheelock, 1992; Zimmer 2003). " Equity in learning opportunities for all students may be hindered through practices such as educational stratification, when combined with limitations on student access to advanced courses through use of prerequisite criteria such as top-notch scores on standardized achievement tests" (Friend & Degen, 2007, p.251). When a suburban Long Island high school removed tracking from all content areas, the number of students (including minority students) enrolled in AP courses increased as well as the scores on standardized assessments (Garrity, 2004).

High school GPAs, standardized test scores and AP/honors classes all contribute to eligibility for college admission. A student who takes AP/honors classes has a significantly higher GPA since most districts award higher grade points for these more rigorous classes. Therefore, the number of AP/honors classes a student takes strongly affects their eligibility for entrance into competitive colleges and universities (Solorzano & Ornelas, 2002). "One place to begin addressing educational inequalities would be to examine the negative consequences of the inequalities in access and availability of AP classes in high school" (Solorzano & Ornelas, p. 220). These inequalities in accessing AP/honors classes could be due to differences in student's prerequisite knowledge or a student and family's ignorance of the specific educational system. Difficulties with the

English language may have also been an obstacle for enrolling in advanced classes for Latino students (Lager 2006; Lopez, Gallimore, & Garnier, 2007).

All parents, not just the affluent, agree that they want the best education possible for their children. Parents trust schools to provide the best educational experience possible for their children in preparing them for post-secondary vocational or higher education. Yet, "far more White students flow into honors classes than Black students. School officials and other experts say White students are more likely to be enrolled in Advanced Placement classes because their parents are pushier" (Chmelynski, 1998, p. 50). In 1998 Chmelynski interviewed Gary Orfield, a Harvard professor who researches desegregation issues. Dr. Orfield stated, "White and middle-class parents know how to be better advocates for their children. They come to school with their kids and insist on the best, most advanced courses" (Chmelynski, p. 50). Pushy White parents may not be the only social reason for the disparity. "Many Black parents avoid interfering with their children's placement or actually steer their children away from honors classes because they don't want their children placed in a predominantly White environment." (Chmelynski, p. 50)

The classes a student chooses in secondary school has a great influence on their post-secondary education. In a qualitative study of six schools in New York State, Spade, Columba, and Vanfossen (1997) concluded that student course selection was critical for academic success.

> Course taking is the most powerful factor affecting students' achievement that is under a school's control… Although schools cannot do much about the social class of the students that attend them, they can do something

> about the patterning of courses and the procedures used to place students in classes" (Spade et al., p. 125).

Counselors, administrators, and teachers exert great influences on the creation of student schedules. Schools attempt to provide parents with information about course scheduling, however, they may not have enough knowledge about scheduling to make wise decisions. Parents must be given the opportunity to understand the necessary prerequisites, the ramifications of choosing or not choosing honors, Pre-AP and AP classes, and what it takes for their son or daughter to enroll into a prestigious university or college. If they disagree with the district's recommended scheduling; they must know how to make appropriate changes in order to make the best decision to meet the needs of their child. They need to know how to be an advocate for their children.

In one affluent central Texas school district, enrollment into advanced classes is generally based on rigorous requirements such as grades, standardized test scores, and teacher recommendations. If requirements are not met, parents may enroll their child into advanced classes if they follow a particular waiver policy. The demographics of the school district was 61% White, 16% Latino, 14% African-American, and 9% Asian/other. The district had 32% at-risk and 30% low-income students. Data were coded and analyzed from interviews with parents to determine if they sufficiently understood the district's advance class enrollment policies to assist their child in choosing the best classes and their experiences, good or bad, with advanced class enrollment and the tracking system.

Methodology

The selection of parents. Parents can have a strong influence in students choosing advanced classes. Therefore, it is imperative that they are aware of district enrollment policies. In order to determine relative degrees of awareness, this study examined the interviews of 18 parents of students from a central Texas school district currently enrolled in grades 7 through 12. Parents were purposively selected by being referred by trusted individuals so that connections were created and a sense of security was instilled (Patton, 2001). A diversity of parents or guardians was sought; not only parents of diverse ethnicities but also of diverse socioeconomic status and family constructions. Several minority parents were referred by community activists, prominent minority leaders, church pastors, and university educators. Others were sought more directly through community events such as Martin Luther King Jr. (MKL) celebrations, the MLK March, and National Association for the Advancement of Colored People (NAACP) meetings and other civic meeting such as Concerned Black Men and neighborhood association meetings. Parents were also sought through sporting events, scouting events and teenage get-togethers. To access additional parents the snowball sampling technique was used (Patton, 1987; Browne, 2005).

The interviews. Interviews took place by phone and in person at community events. The semi-structured interviews were designed to be focused on the individual's perceptions (Lincoln & Guba, 1985; Wengraf, 2001). Interviews began with a broad question. "How do you feel about your child taking advanced classes?" Care was taken to be sure that all questions were open-ended and did not push parents to lean in any particular direction.

Parents were asked about experiences they had trying to enroll their children in advanced classes, their thoughts on open enrollment versus restrictive enrollment, and their thoughts about the districts current enrollment and waiver policies. The data were coded into multiple initial emerging themes and then finalized and grouped into 6 larger themes. To justify the validity of the interviews, H. F. Wolcott's (1994) strategies for ensuring the validity of action research were used. These strategies included listening, recording accurately, beginning writing early, letting those who were interviewed check over the transcribed interviews for themselves, reporting fully, being candid, seeking feedback, and writing accurately (Wolcott). Copious notes were taken during interviews that ranged between15 and 45 minutes. The interviewer adjusted the questions as needed to facilitate the interview for clarification. A copy of the interview protocol is included in Appendix B. Of the eighteen parents interviewed, family ethnicities included eleven Whites, four African American, one Latino and two of a mixed race. Six of those interviewed were fathers and twelve were mothers. Four of the parents were single. Three of the parents had only one child in the district and fifteen had several enrolled children, some previously graduated. The list of the parents interviewed can be found in Appendix A. Pseudonyms were assigned to protect their privacy.

Information provided by the district. When students do not have the necessary prerequisites to enroll into an advanced class, school policy dictates that parents may have students enrolled by attending a waiver meeting and signing a waiver form. The waiver form for the middle schools differs from the high school waiver form. The middle school counselor readily handed the author the waiver form for Algebra I Pre-

AP. The middle school waiver form contains information about the advanced mathematics class such as grading procedures and grade point value. The form also advises parents that the course will be on the students' high school transcript and that the students may not drop the class once enrolled until the semester is completed. The middle school counselor did not have available a Spanish translation when requested. The high school counselors would not release the waiver form to the author. The counselor indicated that the waiver forms are released at the waiver meetings only. The author attended a waiver meeting to obtain a copy. A copy of the middle school and high school waiver forms are located in Appendix D. Unlike the middle school waiver form, the high school waiver form was intended for all advanced high school courses. Parents were required to accept and initial that: a) enrollment in the waivered course is for the entire first semester, b) placement in the waived course could negatively affect the child's GPA for the entire first semester, c) enrollment in the course is an override of the teacher's recommendation, and d) enrollment in an advanced level course requires more time and effort from both the student and parent. Other warnings on the waiver form include that students will not receive the additional grade points for being in an advanced class if they earn below a 75, that approximately 79% of the students who are waived into a higher level course fail or do not receive the 10 extra grade points, and that students will be expected to learn course concepts missed while enrolled in a lower level course on their own.

Parents must sign the waiver form at scheduled waiver meetings. The middle schools have one meeting scheduled during a March evening. The high school parents

may choose between a noon and 5:30 pm meeting also scheduled in March. During the meeting counselors go over the waiver form with parents and answer any questions they may have. During a high school noon meeting a parent asked the difference between honors and Pre-AP English II. The counselor did not know what the difference in content was. English was not her area. A social studies teacher in the room answered by saying, "Pre-AP prepared the students more for AP English." and that "Students were required to do more writing". The same parent asked where the statistic came from, which was written on the waiver form, that stated "Historically, approximately 79% of the students who waiver into a higher-level course fail or don't get the extra 10 points" (i.e., scored below a 75). The counselor said that she was not sure but she thought someone stated this in a dissertation or thesis several years ago. She did not know how up to date or how accurate this statistic was.

Advanced class tracking for mathematics. Ms. Henry stated in her interview, "Parents have to be so prepared." The advanced track for mathematics could be one of the structures in place that she is referring to. For mathematics, placement into the advanced track begins with the 4th grade TAKS mathematics exam. Students must be awarded a commended status and have earned a 90 or above in 5th grade mathematics to enter into advanced 6th grade mathematics. Students must be commended on the 5th grade TAKS mathematics exam and have earned a 90 or better in their 6th grade advanced mathematics course to enroll into advanced 7th grade mathematics. Students must be commended on the 6th grade TAKS mathematics exam, earned a 90 or better in their 7th grade advanced mathematics course, and score a 90 or better on one of two parts of the

district's Algebra Assessment Test to enroll into Algebra I Pre-AP in the 8th grade. Students must have earned a 95 or better in Algebra I Pre-AP to enroll in Geometry Pre-AP in 9th grade. Students must have scored a 90 or better in Geometry Pre-AP to enroll into Algebra II Pre-AP in 10th grade. Students then must have earned a 90 or better in Algebra II Pre-AP to take Pre-Calculus Pre-AP during their junior year. Finally, students with a 80 or better in Pre-Calculus Pre-AP may take AB Calculus and those with a 95 or better in Pre-Calculus Pre-AP may enroll in BC Calculus their senior year. Students must also have their current mathematics teacher's recommendation to move up to the next advanced class each year. The parents of elementary students need to be aware that their child's 4th grade TAKS mathematics score will be a determining factor for entrance into Calculus as a senior in high school. Appendix C is a chart illustrating the progression of mathematics courses from 6th to 12th grades. The green arrows show the advanced track. There are many ways to exit the advanced track but only one way to gain access to the advanced track without a waiver. A student may move up if he scores a 95 or better in regular 8th grade mathematics. The student may then take Algebra I and Geometry in a block class their freshman year. If students score a 90 or better in the block class, they may move into the advanced track their sophomore year.

Findings and Recommendations

All parents appeared to feel comfortable during the interview talking about their concerns and experiences with the school district enrollment policies. Parents who agreed with current policies tended to be involved in shorter interviews than those who

wanted to see policies change. While compiling and sorting interview comments, six main themes became apparent: a) parents needed more information about the advanced classes, b) parents wanted less restrictive enrollment policies, c) parents were concerned that some students may lack an advocate, d) parents would like to have a less competitive academic environment, e) parents wanted more support for all students, and f) some parents felt the system failed them. Each of these themes will be discussed.

More information needed. One reoccurring comment was that the parents would like to understand more about the advanced classes and the advance track. They often did not feel competent enough to advise their child about the process of choosing the best classes. Some of the comments included:

> Ms. House: Parents are given no information in junior high about advanced classes. They are tracked without the parents realizing.

Ms. House thought if parents were given more information about advanced classes before their children entered high school, they would be able to guide them better through the high school years.

> Mr. Wilson: Educating the parents will create more energy because it is ultimately the parent that makes sure the student is in these (advanced) classes.

Mr. Wilson believed if parents were better educated about advanced class placement they would be more involved in their children's education.

Mr. Jackson: As parents we have not received enough information as to what is an honors class as opposed to a Pre-AP class. We are not educated on the value.

Mr. Jackson said he was confused about honor vs. Pre-AP classes. He does not know if there was a grade point advantage for one class over another and what the difference in content was.

Ms. Hodge: There needs to be more about Dual Credit Classes and AP Classes. I am unsure about the value of each and where they are accepted.

Ms. Hodge wanted to know what colleges or universities the dual credit and AP classes are accepted and if there is a grade point advantage for both types of college credit classes. These are all valid concerns that the district should address. Recommendations for the district, based on the parent comments, include:

- Provide more communication about tracking and advanced class enrollment policies. Hold parent meetings every year once advanced classes are offered.
- Provide information about advance classes early. Parents need to understand that one advanced class is a prerequisite for another. Tracking begins with the fourth grade TAKS test.
- Parents wanted to know the expectations of these classes before they sign a waiver form. Have the high school give a list of course grading and expectations in such as way as the middle schools do.

> Be sure to have someone present at meetings who can answer all of the parents' questions about every subject area and who knows the difference in honors, Pre-AP, AP and dual credit courses.

Less restrictive policies. Most of the parents agreed that the enrollment policies are too restrictive and needed more flexibility. Some were concerned that enrollment requirements that included strict cut-off scores did not take the individual's needs into account. Other parents felt that numerous or restrictive policies prevented talented students from achieving. Below is a sampling of the parents' comments.

> Mr. Wilson: I think stringent requirements and the waiver policy is a bunch of boloney. Why can one school make it so simple and another make it so difficult?

Mr. Wilson is referring to a near by district that has open enrollment for advanced classes as opposed to the district his child is attending.

> Mr. Reynolds: The waiver policy is a bit excessive. It keeps kids out of the advanced track who are plenty capable.
>
> Ms. Henry: These policies are too restrictive. Parents have to be so prepared.
>
> Ms. Laws: If your son or daughter does not do well on the 4th grade TAKS test then they cannot take college bound classes without a lot of difficulty. Jumping from one level to another is almost impossible.

Ms. Laws knows that children have to be commended on the 4th grade TAKS mathematics test to enroll in 6th grade advanced mathematics.

Mr. Roberts: I don't like that kids are stuck on one track. Kids go through many changes at that age. Parents and students should be given the freedom to sign up for any class and any track – more flexibility.

These parent comments lead to their recommendations:

- Be consistent on restrictions for advanced classed. Some classes require a 90 from a prerequisite course and others require a 95. Some require entrance exams, such as Algebra Pre-AP, and others do not. Parents do not understand the reasons underlying more stringent requirements for some courses than others.
- Reduce restrictions. Many parents believe that a "B" is fine. Parents believe that the education a child receives in an advanced class while making a "B" is far more beneficial for the student than making an "A" in a regular class.
- Provide parents a stronger voice in the placement process. Hold more parent conferences. If a student was not recommended for a class by the teacher, the parents have a right to know early and to be provided with the reasons supporting the decision. Parent conferences need to be required when a teacher will not recommend a student.
- Remove the teacher recommendation restriction. Parents feel that some teachers abuse this power and more objective criteria would be more beneficial to the process.

Lack of an advocate. Many of the parents felt that the system for placing students into advanced classes or getting them into the advanced track was difficult of complicated. They were concerned that only educated parents would be able to advocated effectively for their children. Here are a few of the comments.

> Ms. Hodge: I would not have known how to be an advocate for my younger daughter if I had not gone through the system already with my older daughter.
>
> Mr. Roberts: It is important for kids to get good counseling at school if the parents are unable to help them.
>
> Ms. Allen: For the students who do not have parents who know how to stick up for them, this [policies] may keep them from taking advanced classes.
>
> Dr. Reynolds: These policies especially threaten kids who do not have college educated parents.

Parents were aware that the system required students have someone close who could advise them as to the best course selection. This most often falls to the parents who know their children well but often do not know the system well. The district should consider the following suggestions:

- Educate parents to be good advocates. Hold workshops that include college entrance requirements.
- Provide advocates to those who have none. Do not assume that all students have a parent who is advocating for their best interest.

- Parents and students should seek help from administrators and teachers as a support system. This should be made apparent to all.

Less competitive academic environment. There were a significant number of parents who worried that tracking, grade point average (GPA) and class rank foster a competitive environment. One parent, Mr. Jackson, was concerned that his daughter wanted to take accounting over theater arts even though she had no interest in accounting because of the higher grade points awarded.

> Ms. Jones: The class standings are driving the kids and parents, not the academics. Class rank is all I hear about.
>
> Mr. Jackson: This system reinforces classism and potentially even racism.
>
> Ms. Monroe: There is too much pressure on the kids.
>
> Dr. White: The restrictive policies are often obsessive and foster a competitive school attitude that is not healthy.

Parents in these comments were mostly referring to the state's Top 10% rule. Texas House Bill 588, commonly referred to as the "Top 10% Rule", is a Texas law passed in 1997. The law guarantees Texas students who graduated in the top ten percent of their high school class automatic admission to all state-funded universities. The University of Texas has struggled with having to accept far more than 80% of their freshman class by the Top 10% Rule. This puts pressure on high school students to maintain high grade point averages by taking many advanced classes that offer higher grade points. Although this seems to be more of a state problem than a local problem, the district could encourage a more rounded education by requiring students to take more electives so

students are not feeling forced to select honors accounting over theater arts, as Mr. Jackson's daughter did.

More support. The parents expressed a deep concern for all students, not just their own. They would like more support for students of all levels. They would like an opportunity to learn for all students, not just the advanced. Some of their comments are written below.

> Ms. Welch: Colleges have so few qualified minority students to choose from. Maybe we should be asking why of our public schools. All kids should be given the opportunity to take tougher classes.

Ms. Welch realized that colleges struggle to get their minority numbers up. She blamed the public schools for not preparing more African-Americans and Hispanics.

> Ms. Shoeman: Failing is not reason for staying in a class. We are saying to kids to never try anything that might be hard in life.

Ms. Shoeman did not think that the district should force students to stay in an advanced class if they were waived in because they do not have the same rule for all students. She thought this rule will discourage students more so than push them into a commitment.

> Ms. Monroe: Get rid of the "waived in, stay in" policy. Have kids reviewed on a regular basis instead, maybe two or three times a year. Provide support.

Ms. Monroe agreed with Ms. Shoeman. Ms. Monroe would like the school to help students who struggle in advanced classes, not just watch them fail.

> Dr. Reynolds: I would like to see that parents and counselors discuss the students individually and not statistically.

Dr. Reynolds would like more conversations between counselors and parents. He wanted the district to look more into the students' abilities than what is down on paper. These comments seem to argue for the following recommendations:

- Provide support such as tutorials and after school programs for those who lack the qualifications to take advanced classes but possess the determination.
- Provide verbal encouragement and support to struggling students.
- Provide a mentor to diverse students in homogeneous classes.
- Provide encouragement to diverse and at-risk students to take advanced classes.

System failure. There were parents who felt that the system failed or discouraged their children. They wanted the district to attend to the needs of and to instill confidence in the students. A few of their comments are written below.

> Ms. House: She was never given the chance to take more advanced math.

Ms. House is referring to her daughter's 8th grade year where she was denied access to Algebra I and wasted her year being board in regular mathematics. She never again had the incentive to perform well in mathematics.

> Mr. Johnson: This (enrollment requirements) keeps smart kids from learning. We have learned this first hand. Our son barely got through school because no one recognized his abilities.

Mr. Johnson thinks back to the time his bright son was also board in class and under-challenged. He requested a schedule change to advanced classes and was denied because his son was not currently performing well.

> Dr. Reynolds: Our daughter thinks that the school does not believe in her. The lack of encouragement she has felt from this system has made her feel stupid.

Dr. Reynolds, referring to the time his daughter was also denied access to Algebra I in the 8th grade. She became discouraged and lost the incentive to try.

> Dr. White: It makes it seem like the school does not care about the kids.
>
> Ms. Shoeman: Kids need to have the chance to prove themselves.

These parent comments seemed to imply that the district lacks empathy for the students who are not at the top of the class. This student and parent perception could be corrected by:

- Being aware of different learning styles and accommodate those students to take rigorous classes.
- Realizing that the restrictions in place may be dissuading students from trying their best.
- Providing support to those with the desire but possess weaker skills.

Positive comments. There were a few parents who thought the district's advanced class enrollment policies served their children well. One parent appreciated that the district sought her

son out to be placed in their Advancement Via Individual Determination program (AVID). Below are a few of those positive comments:

> Ms. Newman: I like the way the district's policies are enforced. The policies are not too restrictive. The responsibility is on the parent the way it should be.
>
> Ms. Garcia: I agree with the restriction the district has for honors classes. It would be too difficult for a teacher to teach if they let anyone in.
>
> Ms. Washington: The district's restrictive policies are good. Some parents try to put their kids in these tough classes and the child gets overwhelmed.

Some parents wanted their story to be heard. African-American mother, Pat Welch, was concerned that her child was discriminated against.

> My daughter has always made A's in English. I wanted her to take Pre-AP English next year in 9th grade but the teacher would not recommend it. I went to the waiver meeting. I asked why the teacher would not recommend that my daughter take Pre-AP and I was told that the teacher did not have to give a reason. They told me at the waiver meeting that I could submit an essay about why I thought my daughter should be in Pre-AP English and they would consider it. I have not heard if she is accepted yet.

Another African-American parent, Karen Monroe, did feel that her son's teacher was encouraging when she said,

> I was warned by his English teacher not to put my son in Spanish because if he did not do well, it would hurt his transcript. She was not at all encouraging. I don't understand. He has always done well.

This White father, Robert Jackson, also had concerns about a teacher's influence when he said,

> Last year when my younger daughter was in 8th grade, she was absent and missed an assignment. She did the assignment but forgot to turn it in on time and received a zero. She had high A's every six weeks but this 5th one. The history teacher refused to recommend her for Pre-AP History in 9th grade. Her reason was that she could not be trusted to turn in all her assignments even though the one she forgot to turn in was the only one she missed all year. My wife attended the waiver meeting to force her into Pre-AP history.

Another African-American father, Dwayne Wilson, was disappointed in the school district when he transferred his daughter her senior year into the district from a more diverse district. "The district enrolled her in very easy classes just so she could graduate easier. She was told that this district had tougher classes than what she was use to."

Discussion

High expectations and rigorous classes are beneficial for secondary students. But when the admittance requirements are restrictive or unclear, deserving students, especially the at-risk or disadvantaged, may be prevented from entering into the advanced or college prep classes. The students' parents or guardians are their most trusted advisors and advocates. Parents may know their children better than the schools but they may not always have adequate knowledge to provide good academic guidance. The interviews with eighteen parents of in central Texas indicated a strong dissatisfaction with the enrollment policies for advanced classes.

Parents wanted more communication about the advanced classes and the tracking process that starts in middle school. Parents are often caught off guard have little information and possibly no warning when they are asked to begin making decisions with their children that will possibly impact their child's ability to enroll into college. Most parents felt feel they needed more detailed information about the programs that impacted their child's post secondary education and careers. Ms. Henry states, "The district does not tell us anything about advanced classes. It all came from my daughter and her friends. If I had to rely on my son, I would know nothing." Four of the parents felt feel that the tracking process should not start before a child has had a chance to develop as a student. Five parents thought believe that the system this adds to a culture of competition that lacks compassion and adds brings unnecessary stress to the young students' educational experiences.

Parents requested more information about the advanced classes. Specifically, they wanted to know the importance of these classes. They wanted more thorough information about the importance of GPA with respect to their child's choice of universities and how these classes relate to the student's GPA. Most of the parents were are unsure of the differences in rigor between Pre-AP, AP, Honors, and dual credit classes. They wondered why there was so much stratification. A teacher in the district, Ms. Hodge said, "There needs to be more information about dual-credit and AP classes. I am still unsure of the value of each and where they are accepted."

It is the parents' perception that the teacher alone should not have the authority to make such important class selecting decisions. Six parents requested more voice in the

enrollment processes, more involvement in the tracking process and the scheduling of classes. They felt that more parent/teacher conferences that were less ambiguous would be helpful. When parents meet with teachers it is often presented as an update of the child's progress in the class and in fact that seems to be the teachers main aim but in fact this is often the parents only access to valuable information about the process. Parents feel that this line of communication needs to be more intentional and that there needs to be more oversight. Some parents are shocked at the ability of a single teacher, with no oversight or even due process, to so thoroughly affect a student's academic career. Mr. Johnson recounts this experience with a son who has graduated two years ago, "One year we felt that our son was not being challenged in regular classes. We asked (the teacher) that he be moved to Pre-AP. Our request was denied. I think we did him a disservice."

Parents feel that the affect of placing so many restrictions on enrollment in advanced classes creates unnecessary barriers that restrict at-risk students and students that come more slowly to academic maturity. This effect is exacerbated by too little information provided by the school system. Through the information gathered, it was noted that fifteen out of the eighteen interviewed parents feel that open enrollment is the most effective step in reversing these many unintended consequences.

Six parents stated concerned that students are handicapped for lack of an advocate in the process. The best solution is to provide the information and guidance parents need to negotiate the system. Parents acknowledge that their own experience in preparing for college, and the time that they could dedicate to interacting as an advocate for their child gives them advantages that would not be available to most at-risk students.

University professor, Dr. Reynolds, states, " These polices especially threaten kids who do not have college educated parents." "Mr. Jackson said, "This system reinforces classism and potentially even racism."

Parents feel that the process was mechanical and engendered a poor culture that lacks empathy and encouragement for students. Mr. Robert Jackson also states,

> Taken in composite, this system is rather draconian in its treatment of all students and especially its disregard for students that may need additional support from the educational system to be able to participate on something approaching an even footing with students born into better circumstances.

Parents felt feel that less focus on GPA would reduce the level of competition, stress and sense that the whole student is valued. By embracing and encouraging a wider range of learning styles the school could engender diversity and a higher level of educational gratification.

Parents made comments that students are not given enough academic support. Ms. House is expressed expresses her dissatisfaction,

> The district only caters to kids who do really well or the special education kids. They only see the kids who are failing. My son didn't fail his classes, but he struggled. He needed help with his alternative learning style. All he was told is that he had to deal with the system.

Students who want to strive to push their academic limits are left to their own devices. There is no support in learning study skills for those who desire moving up in track, in providing additional support for students struggling to keep up, and for those who have diverse learning styles. This too significantly handicaps lower socioeconomic students who are less likely to find that support at home.

According to district procedures when students do not meet the requirements for the various advanced classes the parents or guardians may attend a waiver meeting and sign the waiver form. In the middle schools, a waiver form exists for Algebra I Pre-AP only. The waiver form is written by the school counselors. The waiver form has grading information and expectations about the course. The high school has one waiver form for all of its advanced courses. It contains no information about the individual courses. It is evident by the difference in waiver forms that the schools have some local control over enrollment policies. Both forms state that the students will be required to remain in the advanced course at least throughout the semester – a policy that 13 out of the 18 parents in this study disagreed with and 3 out of the 18 thought it necessary. In reference to the policy that requires the students to stay in the entire semester Ms. Hodge said, "This is so wrong. If a child is not successful in an advanced class, there should be the option to move into a regular class. Do we want fear to be the motivating factor?"

The intention of the waiver form and the waiver meeting appeared to be more of a deterrent to parents than encouragement. Parents were repeatedly told of the negative affects of taking advanced classes such as lower GPA's, more work for parents and students, strong possibility of failure, and impossibility of rescheduling for any reason. Parents were not reassured with academic support or counseling. In fact, they were told that students were responsible for learning prerequisite knowledge on their own.

Conclusion

In order to advance the sort of equity and educational efficacy that the majority of parent recommendations point to, this school district, and the many others that have similar policies, must adopt an open enrollment policy. Past research has shown that schools and districts that provide open access to advanced classes provide more equal educational opportunities for all students (Chmelynski, 1998; Gamoran, 1992; Garrity, 2004; Klopfenstein, 2004; Oaks, 1985; Spade et al., 1997; Wheellock, 1992; Winebrenner, 2006; Zimmer, 2003.) It is part of the College Board's (2000) philosophy to open Pre-AP classes to all students. When tracking and restrictions are implemented to provide more specialized instruction, those students who do not qualify early find themselves excluded from the advanced classes and college readiness. It is the at-risk students, especially those who come from families with little or no college experience, who suffer disproportionately from these tracking policies. This inequity is exacerbated by a lack of support in guiding students through the tracking process. The net result is a form of special segregation that is unhealthy and unnecessary.

CHAPTER IV

CONCLUSIONS

> *When challenged, Americans have always opted for expanding the circle of opportunity, enlarging our freedom, and providing equality of opportunity*. –Excerpt from The College Keys Compact, open letter to the leaders of American education from the Board of Trustees of the College Board.

In this study of the advanced class enrollment procedures and policies of an affluent central Texas school district, it has been determined in Chapter II that three out of the four quantitative requirements for entrance into Pre-AP Algebra have poor correlation to the student's course performance in algebra. It is also evident in Chapter III that many of the district parents are dissatisfied with the restrictive and often confusing enrollment system.

The parents surveyed from of this central Texas school district were by and large unhappy with the restrictive policies for advanced classes such as Pre-AP Algebra. Luckily, a quantitative look at these requirements reveals that they are not quality predictors of success and therefore are not necessary. The only requirement that correlated well to future success was the grade from the students' seventh grade advanced mathematics class. TAKS scores and the district's generated Algebra Readiness Test did not provide reliable information about a student's ability to succeed in the advanced algebra course. It was recommended in Chapter II that the detached requirements be removed and that teachers work with parents for best course placement.

Parents were more interested in the district placing energy toward quality and timely communication with parents about the schools tracking system. Parents also were

concerned about the level of encouragement provided by the school and the level and pressure of competition endured by the students. Of particular concern was the requirement of teacher recommendations that are delivered without explanation or oversight. It was felt that this could open the door for the exercise prejudices.

From a quantitative perspective the prescriptive nature of this districts policies can easily be shown to be less than fruitful. But as evident in the qualitative study, the parents concerns seemed to be more encompassing. There was a sense that they were speaking to the issue of district a culture that encourages extreme competition and exclusiveness based on unstated standards.

Cultural issues are seldom addressed only within the context of policy changes but it is possible that for this school district going to an open enrollment policy could begin a process of changes that would lead to a process of cultural change and encourage much desired diversity. This single policy change would likely impact the hearts and minds of both students and parents.

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APPENDIX A

List of Interviewed Parents

Parent	Marital Status	Ethnicity of family	Number of children	Children in grades 7 - 12	Children enrolled in advanced classes	Children waived into advanced classes
Kayla Allen	Married	White	2	2	1	0
Gina Garcia	Single	Latina	3	1	0	0
Karen Monroe	Married	African - American	2	1	1	0
Elizabeth Laws	Married	White	4	1	1	0
Robert Jackson	Married	White	2	2	1	1
Calvin White	Married	White	2	2	2	1
Leslie Shoemann	Married	White	2	2	2	0
Ellen Hodge	Married	White	3	2	2	1
Margaret House	Married	White	2	1	1	1
Ms. Henry	Married	White	2	2	0	0
Matt Johnson	Married	White	3	1	1	1
Laverne Washington	Married	African - American	1	1	0	0
Sam Roberts	Single	White	2	1	0	0
Laura Newman	Married	White	2	1	1	1
Pat Welch	Single	African - American	1	1	0	0
Dwayne Wilson	Single	African - American	2	1	0	0
Chris Jones	Married	Mixed Race (W & AA)	1	1	1	1
Dick Reynolds	Married	Mixed Race (W & L)	2	2	2	1

4 single, 14 married; 11 White, 4 African American, 1 Latino, 2 mixed race

APPENDIX B

Interview Protocol

Hi Ms. _____, my name is Linda Stearns. I am a graduate student with the College of Education at Texas A&M University. ___ gave me your name and number as someone who can help me with my research study. I am also a district parent and a former High school mathematics teacher. As a ____ ISD parent, I would like to ask about your thoughts about the districts advanced class enrollment policies. I am doing a study to find out how much ____ ISD parents understand out the district policy for enrolling kids into honors/pre-AP classes. Do you have just a few moments for me to ask some questions about district enrollment policies?
Are you a parent of a ___ ISD teenager? Boy or girl, what grade is she/he in?

How do you feel about your son/daughter taking honors classes? Has your son/daughter had any experiences taking these classes or just trying to enroll in them?

Some districts have an open enrollment policy for students. So after being advised by a counselor, if a student shows and interest and effort, he may enroll in the pre-AP classes. ___ ISD has rigorous requirements for students who want to enroll in honors/pre-AP classes such as previous class grades or TAKS scores and teacher recommendations. These requirements can be different for each class. If a student does not meet these requirements, the parent can file for a waiver. The parent must first attend a waiver meeting before they can see and sign the waiver. Tell me your thoughts on these two different approaches?

Did you know that if a student is waived into a class, then he/she may not drop the class for the entire semester, even if he is failing? How do you feel about that?

Has there ever been a time when you wanted your child to be in an advanced class, where he/she did not have the requirements, but you did not understand how to waive them in or you could not make the waiver meeting?

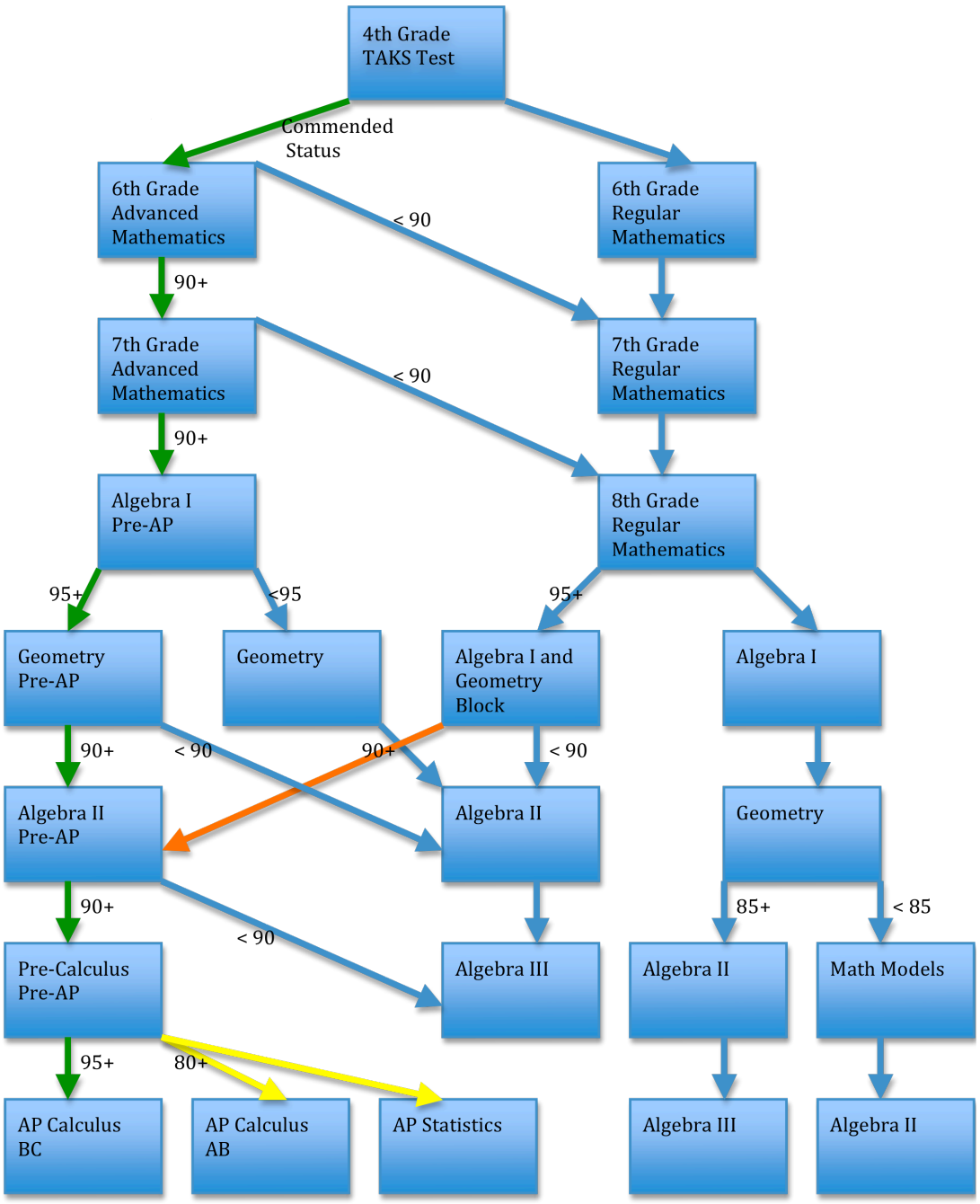
Is there anything about the policies that you would like more information?

Do you feel that the district honors/pre-AP enrollment policies protect the rigor of the advanced classes or more likely prevent talented students from trying the advanced classes?

If you think ___ ISD's policy needs to be changed, how would you change it?

Thank you so much for your time. I will anonymously express your views to the school district. Hopefully, together we can make a change for the better for the students.
Can you refer me to any other parents who would be interested in helping as well?

APPENDIX C


4th Grade TAKS Test
Commended Status
6th Grade Advanced Mathematics
6th Grade Regular Mathematics
< 90
90+
7th Grade Advanced Mathematics
7th Grade Regular Mathematics
< 90
90+
Algebra I Pre-AP
8th Grade Regular Mathematics
95+
<95
95+
Geometry Pre-AP
Geometry
Algebra I and Geometry Block
Algebra I
90+
< 90
90+
< 90
Algebra II Pre-AP
Algebra II
Geometry
90+
< 90
85+
< 85
Pre-Calculus Pre-AP
Algebra III
Algebra II
Math Models
95+
80+
AP Calculus BC
AP Calculus AB
AP Statistics
Algebra III
Algebra II

APPENDIX D

Algebra I Pre-AP Waiver Placement Acceptance

To the parent or guardian of: _____ September 7, 2009

Your student was not recommended for Algebra I Pre-AP. At your request your student will be placed in Algebra I Pre-AP. Your student will be required to remain in this placement at least through the fall semester.

Please be sure you understand the following information regarding this course:

- **Algebra I Honors Pre-AP is a high school credit course.** This grade will be placed on his/her high school transcript. This also means that GPA and class rank in high school are affected.
- A student must be in attendance for 90% of the time for credit to be earned.
- Students taking Algebra I Honors Pre-AP in middle school must take at least three more upper level math courses in high school.
- According to high school procedures: major grades make up 75% of student's grade, tests can not be retaken or corrected to improve a students grade, late work is not accepted, final exams count 20% of the overall grade.
- In order to receive Honors credit, a student must have an average or 75% or above.
- Success in Algebra I Honors Pre-AP requires a high level of critical thinking skills and dedication.

If, after careful consideration, you wish to have your child placed into Algebra I Honors Pre-AP, please sign and return this letter to [redacted] Middle School, [redacted]
Thank you,

[redacted] [redacted]

____ I give permission for my child to be scheduled into Algebra I Pre-AP and I accept the terms listed above.

____ I **DO NOT** give permission for my child to be placed into Algebra I Pre-AP.

_____ _____
Parent's Signature Date

Parent Waiver Form

Student Name: _____ ID Number: _____

Grade in 2010-2011: _____

Parent Name: _____

Telephone Number: _____ Email: _____

Course Desired:	_____ Course Name	_____ Course Number
Course Dropping:	_____ Course Name	_____ Course Number

Course Desired:	_____ Course Name	_____ Course Number
Course Dropping:	_____ Course Name	_____ Course Number

Parents: Please initial each statement below to indicate agreement.

_____ I understand that my child will remain enrolled in the waivered course for the entire first semester.

_____ I understand that this could affect my child's GPA in a negative way.

_____ I understand that I am choosing to override the teacher's recommendation for my child's placement in the above course(s).

_____ I understand that advanced level courses require more time and effort from both the student and parent.

_____ _____
Parent Signature Date

Reminders about Honors, Pre-AP and AP classes:

- No retesting is allowed for failed tests
- Receive extra points for GPA only if semester average is 75 or above
- Can remain UIL eligible with a grade of 60-69, but 70 is the lowest passing grade

Revised 2/22/10 cc

Understanding the Waiver Meeting and Process

There are several items parents should consider before signing the waiver form:

1. Student cannot change their schedule after June 18th and must stay in the class until the 2nd semester begins.
    a. If the lower level class is full, then your student may not be able to change to a different class at the semester. There will be no place for them to go.
    b. There are some classes that don't allow the change unless the student fails the fall semester.
2. Your child's GPA will be affected.
    a. Your child's teacher knows his/her abilities and work habits. They have your child's best interest at heart, and they are the professionals. Please keep this in mind as you choose to override their recommendation.
    b. Your child's work habits are not likely to change over the summer. If they are choosing not to do homework now, then chances are that they will make the same choices next year.
    c. Historically, approximately 79% of the students who waiver into a higher level course fail or don't get the extra 10 points.
3. Advanced level courses are more work. Please weigh your child's extracurricular activities vs. the extra load an advanced level course requires.
4. Pre-AP (AP) Sequence in any subject area is a huge jump from a regular course in that same subject.
    a. Example: Geometry to Algebra 2 PAP can create difficulty or extra work for your child outside of the regular school day. There is information covered in Geometry PAP that is not covered in On Level Geometry which will be used in Algebra 2 PAP. The student will be expected to know this information or learn it on their own.
    b. Example: 8th grade English to English I PAP will potentially mean lost content or content the student will need to learn on his/her own. It is also an extreme change in work load, level of writing ability, and analysis of literature.

Please consider this decision very carefully before signing this form.

Schedule changes must be made by June 18th.

Revised 2/22/10 cc

VITA

Linda Lea Merenda Stearns received her Bachelor of Science degree in Geology from Texas A&M University in 1985. She earned her teaching certificate in secondary mathematics and earth science from Texas A&M University in 1989. In May of 2010 Ms. Stearns received her Master of Science degree in Curriculum and Instruction also from Texas A&M University in College Station. Her research interests include Science, Technology, Engineering and Mathematics (STEM) education and equality in education. She plans to continue as the program director of the Aggie STEM Center at Texas A&M University.

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