

LEVELING THE PLAYING FIELD: A MULTI-METHOD APPROACH  
TO EXAMINE THE STUDENT ACHIEVEMENT GAP AMONG HIGH  
POVERTY MIDDLE SCHOOLS IN SOUTHERN ARIZONA

by

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## **DEDICATION**

To Bob, with love.

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## **ABSTRACT**

This dissertation contributes to the educational literature by providing new research on the achievement gap in the Southwest. For this study, a sequential mixed-methods approach was employed. The quantitative research assessed which factors influenced academic achievement among a 2012 high school graduating class (N=2,238) through analyses using correlation, ANOVA and HLM. Additionally, qualitative themes from 15 in-depth ethnographic teacher interviews and 116 teacher surveys from low income schools were triangulated with the quantitative findings to describe the multiple, interconnected factors that affected student achievement from the teacher's viewpoint.

The low income schools in this study were defined as 'hardship schools' because they had a high percentage of free and reduced lunch participants, a high minority population, low academic achievement, and frequent turnover in the administrative staff. The findings indicated that a statistically significant academic gap existed between high and low income schools. However, the longitudinal student standardized scores from elementary (5<sup>th</sup> grade) to high school (10<sup>th</sup> grade) revealed that the gap did not widen over time between high and low income students. Although students from low income schools lacked social capital and other resources available to their wealthier peers, they were still able to make equivalent academic growth, albeit at a lower performance level. It was argued that a pivotal reason that the gap did not widen was due to a dedicated teacher cadre that chose to work in low income middle schools. These teachers expressed a high level of self efficacy and cultural competency and identified with the

students and the surrounding community. Their sense of identification came from one of three sources: similar ethnic background, including Latino culture and language; similar socio-economic upbringing, including poverty and the hardships associated with being an economic underclass; and/or cultural competency, where curiosity and love of diversity is emphasized. This identification helped teachers *level the playing field* by relating to students and making learning relevant to their environment.

## CHAPTER 1: INTRODUCTION

### Statement of the Problem

You have to go into teaching with a passion... it was a calling for me to give back to the community. The community did well for me. I also saw that we needed help. We have students who are bright kids and they come from situations that are not their fault. They don't have skills to pull themselves out of it. If we don't give them those skills, we will perpetuate that underclass.

Although the link between socio-economic status (SES) and student achievement has been empirically well established for decades, the detrimental effects of poverty continues to impact student performance. The academic gap in reading and math between students from low socio-economic backgrounds and those from high socio-economic backgrounds first appear in elementary school and persist into high school (Coleman et al., 1966; Rumberger & Palardy, 2005; Sirin, 2005; White, 1982).

Student performance on standardized testing in elementary and middle schools can be used to predict scores in high school and on college admission tests. The National Research Council suggests that “academic success, as defined by high school graduation, can be predicted with reasonable accuracy by knowing someone’s reading skill at the end of third grade. A person who is not at least a modestly skilled reader by that time is unlikely to graduate from high school” (*in* Annie E. Casey Foundation, 2010, p. 9). The cost of low reading proficiency by fourth grade is realized in adulthood with the propensity to earn low wages, be the least skilled and/or least productive on a

work team and to end up as the most costly sector to society as a whole (Annie E. Casey Foundation, 2010). The effects of elementary school disparities in academic performance can be translated, therefore, into college admissions disparities and wage earning disparities among adults (Stiefel et al., 2006).

Despite a large body of educational research, federal and state policy changes, increased accountability measures, and subsequent intervention strategies in classrooms, schools have been able to show only minimal progress in closing the academic gap since the 1970's in test score performance among students from different socio-economic strata (Stiefel et al., 2006). Multiple reasons have been provided to explain the achievement gap including socioeconomic and family conditions, changes in youth culture and student behaviors, and/or changes in schooling conditions and practices (Bradley & Corwyn, 2002; Caro et al., 2009; Guo & Harris, 2000; Hartas, 2011; Lee, 2002; MacIver & Epstein, 1990; Sirin, 2005). Minority students typically show lower academic achievement than their White peers, in large part, due to various mutually reinforcing socio-economic factors. These factors include living in low-income households and/or in single parent families, with parents who have low educational levels, and earn minimum wages, as well as being enrolled in under-funded schools (Sirin, 2005). Additionally, the level of exposure to quality educational opportunities differs by SES. Parents wield significant influence over their child's educational trajectory and low income parents are at a significant disadvantage to advocate for educational rigor and accountability. Research among low income parents indicate that they have lower educational expectations, monitor school work quality less frequently,

and supervise peer social networks less of their children when compared to higher socio-economic and intact families (Jacobs & Harvey, 2005).

To narrow the achievement gap, several interconnected factors must work together as no silver bullet exists (Lee, 2002). Many social forces are beyond the scope of K-12 educators to effect significant and immediate change. For example, educators have virtually no direct influence over the larger socio-economic landscape or the capacity to anticipate the needs of the changing workforce. Higher test scores in K-12 may not automatically translate into greater workforce productivity without other resources being put into place to support secondary education and relevant skills development. Additionally, educators have limited influence on the larger youth culture and student behaviors (Levin & Kelley, 1994). However, educators wield enormous influence over school climate and teaching practices (Sanders & Rivers, 1996). School reform measures since the end of WWII have been enacted to change the schooling culture to be more responsive to student and families' needs and/or to be more rigorous with academic content and standards for all students. Even so, low income schools continue to lag behind academically and lack a variety of programs that are provided in wealthier schools such as extensive remedial courses, advanced placement courses, and courses that encourage higher-order learning (MacIver & Epstein, 1990).

In summary, American culture has relied on the meritocratic ideal that any student should be provided the opportunity to be academically successful in quality educational settings, despite family SES. Educational research has long focused on unraveling the complex inequities in schooling to recommend effective strategies to

improve the opportunities for children at risk for academic failure. This dissertation will contribute to the body of research on the efforts of educators in low SES schools to narrow the achievement gap in Arizona. The sequential mixed-methods approach (Creswell, 2005, 2009) used in this study, is integrative and innovative, as it examines the trajectory of the academic gap between selected low income middle schools and high income middle schools in a school district in Southern Arizona. A quantitative approach will be used to assess which factors influence academic achievement over time among specific groups of students while controlling for SES, ethnicity and other demographic variables. Qualitative themes will be triangulated with the quantitative findings with descriptions of the multiple, interconnected factors that affect student achievement from the teacher's viewpoint. The 2012 high school graduating class from this school district made up the longitudinal data set from 5<sup>th</sup> to 10<sup>th</sup> grade. Specifically, this research examines if the trajectory of the achievement gap changed over time or has remained constant. The low income schools used in this study were defined as 'hardship' schools because they had a high percentage of free and reduced lunch participants, a high minority population, low academic achievement and frequent turnover in the administrative staff. Additionally, all hardship schools participated in Title 1 programming, and were in school improvement under the No Child Left Behind (NCLB) sanctions.

## Significance of Study

Teachers in hardship schools can relate to the students. You tend to find more minority teachers sticking around...A Hispanic kid will hook up with a Hispanic teacher; a Black kid will hook up with a Black teacher. There are White teachers who do come from low socio-economic backgrounds too, so it is not just ethnicity. I find the ones who come from a harsher [poorer] background are the ones who understand the kids better...understand how a kid can come to school and be tired or how a kid can come and be dirty.

This study contributes to the educational research by examining data from a predominantly Hispanic minority-majority school district in Southern Arizona.

Hispanic and recent immigrants have been consistently underrepresented in the achievement gap dialogue (Bali & Alvarez, 2004; Magnuson & Duncan, 2006). Their experiences may not be adequately portrayed, as non-Black minorities have too often been lumped together in educational research (Hallinan, 2000).

The data produced from this research characterizes the culture of teachers and schooling in 5 hardship middle schools in this school district. Teacher responses helped to contextualize the complexities of daily life in a low SES school. This research contributes to the educational literature by using a mixed-methods approach: Teacher narratives served as the explanatory model to interpret the statistical student achievement results of a predominantly Hispanic student population.

As these schools are at-risk for academic failure and associated sanctions by state and Federal entities, principals and district administrators can also apply these research recommendations immediately to support teachers in becoming more effective in the classroom. Results from this study can guide reform and accountability decisions at the

school level as well as to help meet particular needs of teachers in these hardship schools. Additionally, once the specific benefits of teaching in hardship schools are documented, this information can be used to attract high quality teachers.

In summary, numerous, overlapping conditions interact simultaneously to produce gaps in student academic achievement. In this mixed-methods approach, the standardized student longitudinal achievement data helps to provide the ‘what’ of this research by revealing the particular points in time when the academic gap changes and with whom with an emphasis on the middle school years. Additionally, the teacher survey data helps to provide the ‘why’ of this research by describing the conditions specific to their school and their student population.

## Conceptual Framework

The reason I wanted to come to a school like this one was to try to help the kids that were like where I came from. [I came from] a lower socio-economic class and I want to be able to show them that they can achieve too....if they come from low socio-economics, drugs, whatever the issue is, they need to realize, "I don't have to relive my situation". [I try to emphasize to] take education seriously, take that to high school, take that to college, to make a difference so they can say, "I don't have to follow the path that was set for me".

This section introduces a holistic view of education as the conceptual framework underlying this study. This theme asserts that no single intervention can close the student achievement gap, in isolation of other larger ecological factors (Bronfenbrenner, 1986), that also affect student performance. A holistic approach emphasizes that decisions are not made in a vacuum. Mutually reinforcing social and biological forces impact the overall profile of a population more than each force by itself is expected to do. In preventive health research, for example, the theory of syndemics was first introduced by anthropologist Merrill Singer in 1992 to describe an inextricable and mutually reinforcing relationship between public health problems such as substance abuse, violence, and AIDS among urban U.S. women. Syndemic processes are culturally produced and ultimately result in increased marginalization and poverty in populations at risk (Stall et al., 2008). In sociology, a 'systems' approach views society as a system of interrelated parts, where a change in any part will affect all the others. For example, in criminology studies, adolescent delinquency is considered to be the product of mutually reinforcing individual, familial, social, and institutional factors. Singular dynamics such as 'poverty' or 'social class' are simply insufficient as

predictors of social problems. Unpacking the multiple foundational issues underlying these dynamics is thus critical to understand causality (Magnuson & Duncan, 2006; Sampson & Laub, 2005).

In psychology research, this integrated approach is called Dynamic Systems Theory. The central tenants are: (Yoshikawa & Hseuh, 2001)

- Interdependency exists between biology, context and individuals; and causality is reciprocal
- Organizational complexity increases over time in this open system
- Even though the system is open, a limited combination of characteristics will be used most frequently over time
- Change is incremental and can be transformational

When assessing the impact of SES on families, for example, a dynamic systems framework contends that the effects of SES can depend on important contexts that may not be uniform. For example, some families are more resilient when coping with poverty than others or some children may be affected differently by poverty, depending on their age (Magnuson & Duncan, 2006).

In educational research, student achievement is the product of inter-related factors including the family, the community, and the school. According to Bandura's social cognitive theory, teacher motivation, the social environments of schools, and self efficacy are all intertwined. Self efficacy is the individual's belief about his or her ability to be competent (Bandura, 1994). Teachers with a strong sense of self efficacy

believe that they can positively impact student learning and view difficult tasks as something to be mastered. (Zambo & Zambo, 2008). Conversely, teachers with a low sense of self efficacy will seek to avoid difficult tasks or expand their skill set. Self-efficacy is derived from external experiences and develops into the personal perception vis-a-vis those social factors. Bandura argued that individuals who believe they can be successful at a task are more likely than others to be successful. Not all efficacy expectations are the same; they can vary according to magnitude (level of difficulty), generality (specific or general) and strength (weak or strong). According to Bandura (1977), “people process, weigh, and integrate diverse sources of information concerning their capability, and they regulate their choice behavior and effort expenditure accordingly” (p. 212). Four sources of informational acquisition that impacts self-efficacy are:

1. Performance accomplishments - mastery experiences: ‘I can do it’
2. Vicarious experiences – social comparison: ‘if they can do it, so can I’
3. Verbal Persuasions – suggestive encouragement/discouragement: ‘I believe you can do it’
4. Physiological States – an added emotional reinforcement of ability/inability such as ‘butterflies in stomach’

The social cognitive theory, therefore, is versatile in that it defines how expectations influence the acquisition of information, and is dependent upon the interaction with the surrounding social environment.

As described above, a variety of systems theories have been articulated across disciplines including anthropology, sociology, psychology, and education. Yoshikawa and Hsueh (2001) summarized that the common theme which ties all these systems theories together is an “attempt to model the interplay of biological and environmental processes across time, as they influence the behavior of humans and other species. Rather than considering nature and nurture as relatively static, ‘either/or’ categories, these models strive to examine how reciprocal causal relations between intra- and extra-individual factors change over the course of development” (p. 1887).

In the same spirit, this research extends the premise of a *holistic* view that no one factor contributes to or can solve student academic success or failure. A connected web of social and economic factors may have a greater impact on the academic success on a student than a single variable such as individual cognitive prowess. Important factors that impact student academic performance have been divided into three sections including the family, community, and school. Each section describes key variables from the K-12 education literature that can affect the learning process, especially when they are compounded with other factors. They are:

**At the individual or family socio-economic level**

- a. Student individual ability or aptitude in combination with effort (Dweck, 1986; Weiner, 1979)
- b. Student “readiness” to begin school including good health, strong family support, safety, emotional, behavioral and physical control, and language skills

(Annie E. Casey Foundation, 2010; Magnuson & Duncan, 2006; Worthington, 2010)

c. Family support and parental stability with employment, relationships/marriage etc. (Cavanagh & Fomby, 2012; Eamon, 2005; Lareau, 2002; Sampson & Laub, 2005)

- Lack of a 2-parent household to support children emotionally and financially (Barton & Coley, 2010)
- Lack of adequate nutrition, access to health-care and crowded housing (Bradley & Corwyn, 2002)

d. Unequal allocation of resources in neighborhoods and schools: Low SES families have access to fewer resources than high SES families such as:

- Lack of enrichment during summers and out-of-school time for low income students from families (Annie E. Casey Foundation, 2010; Alexander et al., 2007)
- Lack of higher education because the expense is out of reach for low income students or not perceived as cost beneficial (Dillon & Carey, 2009)
- Lack of continuity through high mobility, safety concerns, violence, low skills in planning for future events, minimal health care and social services, obesity, discrimination etc. that are associated with poverty (Bali & Alvarez, 2004; Barton & Coley, 2010; Bradley & Corwyn, 2002; Stall et al., 2008)

- Lack of perceived opportunity and social class reinforcement (Bourdieu, 1977)

#### **At the neighborhood or community level**

- e. Neighborhoods can reproduce a community culture to which families are exposed to and identify with (Barton & Coley, 2010; Jencks & Mayer, 1990)
- f. Implicit bias and stigma against families by poverty or social class from gate-keeping institutions including schools, governmental agencies, academic researchers etc. (Bradley & Corwyn, 2002; Baumeister & Leary, 1995; Sampson & Raudenbush, 2004)

#### **At the school level**

- g. In low SES schools, district policies assign weaker and more inexperienced teachers or ask teachers to teach outside their expertise. White teachers get assigned to high minority schools with limited cultural competence (Annie E. Casey Foundation, 2010; Bali & Alvarez, 2003; Hanushek et al., 2005)
- h. Peer groups help to shape individual adolescent behavior. The SES and social status of peers within a school can affect attachment to school and individual academic achievement (Caldas & Bankston, 1997; Crosnoe et al., 2004)
- i. Student academic performance and school attachment improves when a student's own race matches the dominant race of their schools' student body, especially for minority students (Bali and Alvarez, 2004; Oyserman et al., 2006)

- j. School environments create cultures of relationships including academic expectations and beyond class-time relationships among students and school staff (Konstantopoulos, 2006)
- k. Poor minority students are referred to and placed disproportionately into special education classes (Skiba et al., 2005)
- l. Low income, low achieving schools must contend with federal education policies and its effects on the collective efficacy of a school faculty (Bandura, 1997)

In summary, the conceptual framework of this study is holistic in that multiple, coinciding conditions interact simultaneously that impact the gap in student academic achievement. These ecological conditions include family and neighborhood characteristics, school, district and federal educational policies, and entrenched cultural beliefs of meritocracy. Each one of these conditions has been shown in the educational literature to impact student academic performance. A change in any one condition may not be sufficient on its own to narrow the academic gaps among different socio-economic groups over time. However, because these processes are intertwined, a significant change in one condition may produce a ripple effect into the other arenas, potentially increasing the impact and providing guidance for other similar populations at risk for academic failure.

## **A Short History of the Achievement Gap over the last 60 years**

*A lot of our teachers are new: first, second, third, fourth year teachers and as soon as they can, they find that job elsewhere...The young ones leave; especially the Caucasians who are unable to deal with the mixture of students and the [surrounding high poverty] population ...They don't understand the culture or the kids. I mean, I've walked out of this classroom and cried because a kid comes in and they're hungry. I mean hungry to the point of hurting hungry. Those teachers have never known that [feeling].*

Self reliance is an ideal embedded in the American individualistic psyche. In education, for example, academic advancement is assumed to be based primarily on individual ability or achievement. Early proponents of American public schools such as Horace Mann (1796 -1859) regarded education as a springboard for individual success for any American, despite entrenched social stratification and a disparity of privilege (Hallinan, 2000). Public schools were to become a 'melting pot' to resolve cultural dissonance by emphasizing one unifying social identity and language as requisite for national strength. As the great equalizer, the goal of public education was to benefit all children regardless of ethnicity, language, social status, or gender. The shared educational experience, in theory, would be of consistent quality with adequate resources for all children no matter where they attend school (Skerrett, 2008). Yet, schools in the United States have always struggled with how to offer high quality education to ethnically diverse populations who demonstrate a wide range of abilities.

The term "achievement gap" is used to explain the disparity in educational performance among multiple groups of students identified by ethnicity, socio-economic

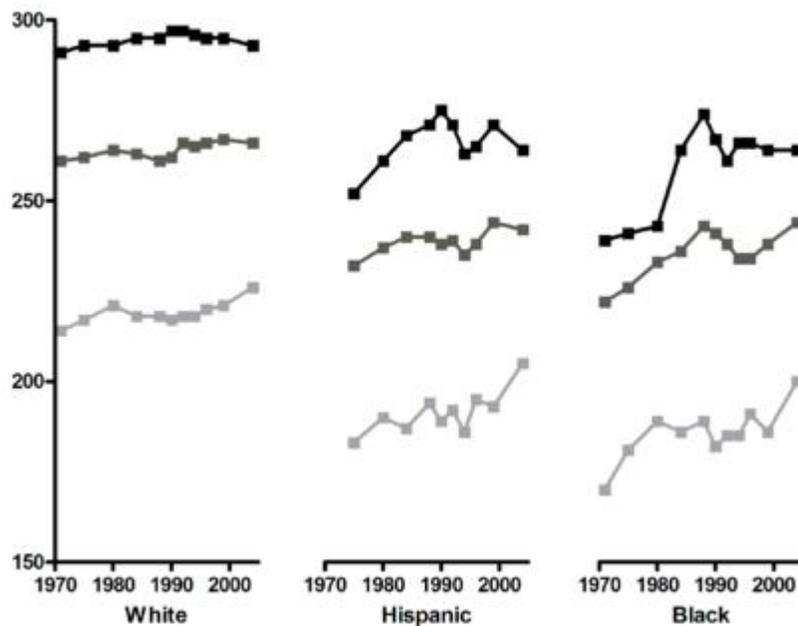
status or gender, even though traditionally, “most studies and reports on the achievement gap have focused on differences in achievement test scores between White and African American students” (Anderson et al., 2007, p. 548). In other parts of the country, such as the Southwest, where schools are ethnically diverse, the achievement gap includes a blend of ethnicities that share a common feature of living in poverty.

The most frequent method to assess the gap is to compare academic performance on standardized assessments, grade point average, dropout rates, college admissions, and completion among students of different ethnicities. For example, standardized test data from the National Assessment of Educational Progress (NAEP) documented that the gap in reading scores for 17-year-olds narrowed considerably for both African-American and Hispanic students from 1975 through 1988. Unfortunately, this trend did not continue. From 1990 to 2009, the gap in both reading and mathematics has remained constant at best or grew slightly (Barton & Coley, 2010). Please refer to the graphs from the NAEP longitudinal achievement gap data among Hispanics and Whites from 1990 to 2009 in Appendices A and B.

The population of the United States is becoming increasingly diverse and narrowing the achievement gap is of paramount concern. For example, in 1970, African-Americans and Hispanics made up 15% of the school-age population. By 2000, that number had doubled to 30% and the trend is expected to continue (Ornstein, 2010). The stagnation by minority students across the nation suggests that many will graduate from high school lacking sufficient skills to compete for middle class or higher level jobs. As minorities make up a growing share of America’s future workforce, the United States’ economic

competitiveness depends heavily on closing the gap. Please see Figure 1 for a comparison of standardized reading test score trends over 30 years among White, Hispanic and Black students.

**Figure 1. NAEP long-term trends in reading proficiency among White, Hispanic, and Black students, ages 9, 13, and 17**



**Reading Test Scores - ages 9 (light gray), 13 (dark gray), and 17 (black).**

Figure 1 illustrates that gap between Hispanic/Black students and White students have been essentially consistent over the last 30 years. As the Education Trust noted (2006), “At eighth-grade, 91 percent of African-American and 87 percent of Latino students are not proficient in math. And by the time Latino and African-American students hit the age of 17, they have been taught to the same level as 13-year-old White

students. Roughly half of Black, Latino and Native American students don't even make it out of high school in four years" (p. 6).

A short history is provided describing 60 years of the major policy and practices to close the achievement gap by decade:

The 1950's: The decade after World War II saw an increase in access to higher quality schooling for minorities. This trend started after 1944 with the *GI Bill*, which provided access for minorities to attend college; often being the first in their families to do so. In 1954, the Supreme Court's *Brown v Board of Education* decision to integrate schools increased K-12 access and allowed some African Americans and other minorities to attend better financed schools for the first time. Additionally, a growing concern in the late 1950's that the Russians could surpass Americans in math and science resulted in the passage of the *National Defense Education Act* in 1958. This law authorized one billion dollars to be spent for math and science in college student loans, scholarships, and scientific equipment (Schumacher, 2009).

The 1960's: In 1964, the *Civil Rights Act* was enacted which outlawed discrimination against African Americans and women. This act was to end the practice of racial discrimination in public schools and generated optimism for progress in education, and by association, the larger social environment (Barton & Coley, 2010). African Americans became the face of the 'minority' in the desegregation movement and all minority groups were simply classified as non-Whites. The distinction among the other diverse ethnic groups was either minimalized or consolidated with the experiences of African Americans (Hallinan, 2000).

In 1965, the passage of the *Elementary and Secondary Education Act* (ESEA) created the federal Title I and Head Start programs to provide school resources to minority students in an attempt to ensure equal opportunity to education as part of President Johnson's *War on Poverty* (Harris & Herrington, 2006; Reardon, 2011). By 1966, the relationship between academic achievement and socio-economic status (SES) had been firmly established with the publication from the Equality of Educational Opportunity Survey (EEOS) or, more commonly known, as the "Coleman Report". Mandated by the Civil Rights Act of 1964 to assess the availability of equal educational opportunities to children of different race, color, religion, and national origin, this report used a national sample of almost 650,000 students and teachers in more than 3,000 schools. The co-authors decided that educational opportunity should be evaluated by equality of outcome (i.e. results of student achievement) instead of using the more conventional approach of the equality of input (i.e. resources available to schools). The two critical points of the report were the following: Variation in school quality did not strongly influence the level of educational achievement when students of similar social backgrounds were compared across schools. However, when students of different social backgrounds were compared, a strong association was observed between SES and educational achievement. Secondly, the report concluded that educational achievement was not only associated with a student's own family background, but also with the backgrounds of their peers in the school, to a lesser degree (Marshall, 1998). The co-authors asserted that, "schools bring little influence to bear on a child's achievement that is independent of his background and general social context; and that this very lack of an

independent effect means that the inequalities imposed on children by their home, neighborhood, and peer environment are carried along to become the inequalities with which they confront adult life at the end of school” (in White 1982, p.325). In sum, the report indicated that both in-school factors and social factors influenced student academic attainment and contributed to the achievement gap.

The 1970's: The Coleman Report had a wide impact on equalizing opportunities for students by desegregating schools through bussing (Marshall, 1998). Yet, even though schools became more diverse in the overall student composition, within-school segregation in learning opportunities and friendship patterns persisted, despite efforts to integrate classes more equitably (Rumberger & Palardy, 2005). The pronouncement by the Coleman Report that schools have minimal impact on student achievement spurred new school-based research. Studies using rigorous research methods observed and evaluated teaching practices including instruction, discipline, praise, time on task, disruptions, student-teacher interactions, grouping, etc. These studies concluded that good teaching was indeed key to student success and had a positive impact on student academic outcomes (Good & Grouw 1979; Kounin, 1970; Kounin & Gump, 1958; Weinstein, 1976; Withall, 1956). In other words, good teaching increased student academic performance regardless of the child's family background. During the 1970s and 1980s, the achievement gap between African Americans and Whites narrowed more than in any other time prior or current (Barton & Coley, 2010). Additionally, in 1975, Congress passed the *Education for All Handicapped Children Act* to mandate free, appropriate education to all eligible students with a disability.

The 1980's: This decade saw a peak in bussing, in part, to accommodate the shifts in population. Middle schools expanded rapidly in the 1960's and 1970's when the baby boomer generation flooded the elementary schools. Moving students from the 5<sup>th</sup> or 6<sup>th</sup> grade into larger, more centralized middle schools was viewed by school districts as more cost efficient and less segregating than constructing new neighborhood elementary schools (Beane & Lipka, 2006; Theobald & Siskar, 2008). Beyond what was best for students, administrative issues related to transportation, finances, and facilities usage all affected bussing decisions (Anfara & Buehler, 2005). In 1983, *A Nation at Risk* was published. This report gave voice to the rising concern that the focus on equity over the last decade weakened the competitive edge among American students to other industrialized countries in academic content such as the sciences and technology (Harris & Herrington, 2006). Results from *A Nation at Risk* revealed that American students never scored first or second on 19 scholastic tests when compared to students from other countries; that high school students scored lower on average on standardized tests than they did in 1957, the year Sputnik was launched; and that high school students showed a continuous decline in SAT scores from 1963 to 1980 of about 45 points.

The 1990's: Although the achievement gap among Blacks and Hispanics narrowed in the 1970's and 1980's when compared to Whites, according to the results from the National Assessment of Educational Progress (NAEP), the gap leveled off from the 1990's onward. Explanations for the stagnant narrowing of the gap are not definitive as different methodologies, tests and cohorts have been used by educational researchers that make comparisons across studies problematic. Additionally, the complexity of

studying changes in the achievement gap necessitates multiple data sources to examine the interactive impact on student achievement (Lee, 2002). Nonetheless, the overall trends continued to demonstrate that children from economically poorer homes did not achieve as highly as their wealthier peers (Dyson & Raffo, 2007; Hartas, 2011; White, 1982,). In 1998, *A Nation Still at Risk* was released. This report confirmed the low status of American high school students in the global arena and created doubt about America's capability to compete successfully in the international marketplace. It revealed that American students ranked 16<sup>th</sup> out of 21 nations in science, 19<sup>th</sup> in math, and dead last in physics (Schumacher, 2009).

The 2000's: By 2000, minorities became increasingly concentrated in urban school districts that were geographically separated from suburban school districts by district boundaries. Desegregation policies were slowly deemphasized because no law existed to mandate integration across separate districts. In its place, a new paradigm emerged that shifted from established desegregation policies. In its place, sufficient resources were to be provided to *all* schools, along with the establishment of high standards with accountability for *all* students, regardless of where they attended school (Rumberger & Palardy, 2005). In 2002, the *No Child Left Behind Act of 2001 (NCLB)* was signed into law by President Bush to implement standards-based reform to increase accountability in the educational system. This act especially affected disadvantaged students by requiring that all students, regardless of ethnicity, disability or income must meet high academic goals. NCLB was intended to ensure that all students have equivalent educational opportunities nationally and that schools receiving Title 1 monies

needed to show continual improvement or face sanctions. Standardized testing was to be used for fund allocation as well as teacher, school, and district evaluation. The reform was based on four premises: accountability, scientific research to assess what works, increased parental involvement, and expanded local control (U.S. Department of Education, 2002). Concurrently, during this decade and the beginning of the next, school choice policies such as charter schools and voucher programs saw a rapid growth. This market-based approach to school improvement initially prompted the better-educated and more motivated parents to take advantage of the choice programs which resulted in even greater segregation by SES or ethnicity (Van Ewijk & Slegers, 2010).

Even after 50 years or more of desegregation and associated legislation, schools are more segregated today than they were during the civil rights movement. Additionally, schools in poor urban neighborhoods continue to have fewer resources and lower academic scores than those in middle class suburbs (Orfield et al., 2003). As Rumberger & Palardy (2005), explained, “more than 70% of all Black and Hispanic students in the United States attended predominantly minority schools in 2000, a higher percentage than 30 years earlier. Although segregation has often been viewed in racial terms, racial segregation is strongly related to socioeconomic segregation...to the extent that both individual poverty and school poverty affect academic achievement, Black and Hispanic student are doubly disadvantaged” (p. 2001). In summary, the tension between student equity and academic rigor has created a metaphorical pendulum that has swung according to the mood of larger social issues. Complicating this history is the lack of

clarity in the educational research about the degree of influence that school resources, learning opportunities, and teacher expertise have had on student achievement vis-à-vis other factors that students bring to school, such as their home and neighborhood influences. Over the last 60 years of schooling, no single strategy or reform measure has been identified that effectively narrowed the student gap and raised student achievement consistently across schools.

### **Cumulative Advantage Theory: Does the gap widen over time?**

I visit in [student] homes and there are no books, no magazines, no newspapers and they don't watch news programs. We have quality kids who could go to the university, but how many do go and stay there and make it? What do they bring to school: the conversation from last night's dinner table? One of my kids was caught smoking marijuana on the bus to school because he was trying to calm himself down. He was medicating himself [because of his family problems]...he's dealing in a day-to-day situation that I can't relate to.

McNamee and Miller (2004) argued in *The Meritocracy Myth* that a mismatch has always existed between how Americans believe the system works and how the system actually does work. According to the ideology of the 'American Dream', an individual will get out of the system what s/he puts into it. Success is therefore a reflection of individual merit including hard work, innate abilities, the right attitude, high moral character, and integrity. However, societal resources have never been distributed primarily on the basis of individual merit in the United States, despite what most Americans want to believe. The impact of non-merit features such as inheritance,

social, educational and cultural advantages, the shifting face of job opportunities, the decline of self-employment, and discrimination have all worked against the principals of meritocracy. This unequal distribution of resources can be easily recognized in the wide inequities of educational opportunities across this nation today. McNamee and Miller (2004) contend that educational attainment is intricately tied to a family's economic standing so much so that:

...upper class children tend to get upper class educations (e.g. at elite private prep schools and ivy league colleges), middle class children tend to get middle class educations (e.g. at public schools and public universities), and working class people tend to get working class educations (e.g. public schools and technical or community colleges), and poor people tend to get poor educations (e.g. inner city schools that have high drop out rates and usually no higher education)...The quality of schools and the quality of educational opportunity vary according to where one lives, and where one lives depend on familial economic resources and race (p. 8).

The achievement gap between white and black students has narrowed over time while the gap between rich and poor students has simultaneously increased. For example, in 1972, high SES parents out-spent low SES parents in a ratio of five-to-one in time and money per child. In 2007, that resource gap widened to a ratio of nine-to-one (Taverise, 2012). These resources affect the quality of the learning environment at home. Kindergarteners from high SES families, for example, are four times as likely to have a home computer, be read to, visit museums or libraries, and they spend less time

watching television. The impact of this resource disparity is that children from low SES families lag significantly behind in language and cognitive skills expectations at school entry (Duncan et al., 2007). Low income children start out with more problems earlier than their wealthier peers and those problems tend to worsen as they get older.

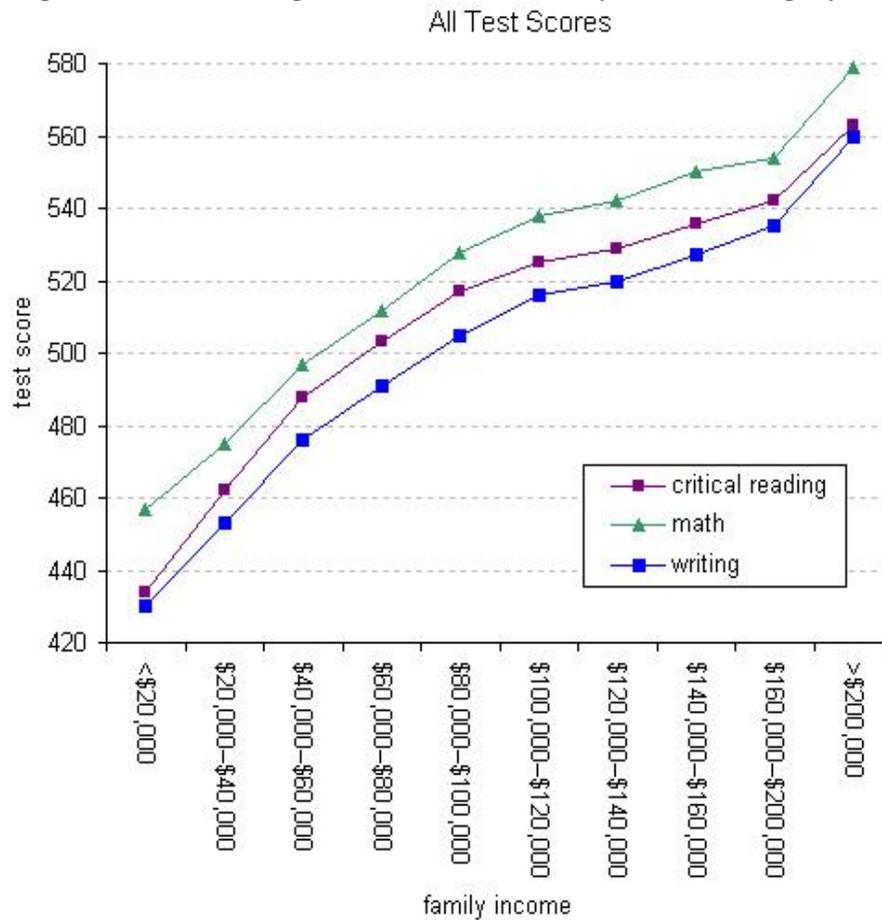
Academic disengagement and high school dropout become a real risk. Even if they make it to high school graduation, the next steps to continue with higher education may not be financially or socially feasible (Caldas & Bankston, 1997; Caro et al., 2009; Jacobson et al., 2001).

Students from low SES families face an increased risk of becoming low SES wage earners as adults (Alexander et al., 2007; Caro et al., 2009; Jacobson et al. 2001). It can have lifetime repercussions including lowered opportunities for higher education, employment and earnings (Annie E. Casey Foundation, 2010; Caldas & Bankston, 1997; Frempong et al., 2012; Lee, 2002). Resources such as parental and financial support are essential ingredients for post-secondary educational degree completion. Adults with a baccalaureate and/or higher degree frequently are the most advantaged workers entering the job market. Earning higher wages is typically an outcome of a cumulative process of support (Elman & O’Rand, 2004).

At the college level, SAT and ACT scores are an integral piece of the selection process and has long been touted as meritocracy at work. This process rewards any student who scores well on these tests with college admission, regardless of their economic standing. However, even with high scores, only 44% of low income students actually go on to complete their college degree. On the other hand, almost all (80%)

high income students with high scores complete their college degree (Edsall, 2012). According to the College Board data, SAT scores are highly correlated with family income of students. In 2009, for each individual SAT score (critical reading, math and writing), the average test score/income range was  $R^2=0.95$ . On every test, an increase in the income category was associated with an average score improvement of over 12 points (Rampell, 2009). Please see Figure 2 for a breakdown on the test scores and income groups.

**Figure 2. 2009 College Board SAT scores by income category**



The value of a college degree not only increases income, it also protects the wage earner against downward economic mobility. From 1970 to 2009, the percent of low income students graduating from college by age 24 has increased 2.1 percentage points for a total of 8.3%. Conversely, the percent of high income students graduating from college by the age of 24 has increased 42.2 points for a total of 82.4% during the same 40-year time period (Edsall, 2012). According to Reardon (2011), this trend has produced a feedback mechanism that diminishes the opportunity for intergenerational mobility. He stated that, “As the children of the rich do better in school and those who do better in school are more likely to become rich, we risk producing an even more unequal and economically polarized society” (p. 2).

The belief that equivalent levels of educational expectations and resources should produce equivalent academic performance of our educational forefathers ignores the *uneven playing field* inherent in the class-based American society. Racial segregation almost always follows segregation by poverty and its associated inequalities of lower performance, lowered expectations, lowered parental involvement, and higher teacher turnover (Orfield et al., 2003). Perhaps the ‘melting pot’ metaphor has been particularly egregious to specific subgroups such as Native Americans and African Americans who were forced to submit to America’s culture involuntarily. In teacher preparation colleges, teachers traditionally have been instructed to treat all students in the same, equitable, meritocratic manner by teaching through a ‘colorblind’ lens (Gordon, 2005) where differences such as ethnicity or religion should not be publicly recognized. This approach tended to promote Protestant Anglo-ism as the unspoken

common culture in classrooms. More recently, some theorists have advocated for a 'multicultural' lens where differences among students are publicly recognized and valued rather than ignored or denied (Richeson & Nussbaum, 2004).

To understand why the academic gap persists, a variety of theoretical constructs have been proposed. One construct is called, Cumulative (Dis)Advantage Theory. CA theory posits that one individual or group gradually accumulates resources over time, creating inequity, because other individuals or groups lack equivalent access to resources. As a way of stratifying individuals or groups, these resources typically fall into the following categories: cognitive development, career position, income, wealth, or health. In the educational domain, CA theory has been used to frame the effects of poverty as an explanation for the widening academic achievement gap (Caro et al., 2009; DiPrete & Eirich, 2006; Klein et al., 2000). Phillips et al. (1998) revealed that Black students, for example, finished high school with a larger gap in math test scores by 0.18 standard deviations from when they were in first grade using data from the National Center for Education Statistics Results in addition to the National Education Longitudinal Survey (NELS). Other research indicated that Hispanic students similarly showed a widening gap in math achievement from elementary to high school. When compared with Black students, however, the gap among Hispanic students was both smaller and with a slightly later onset (Bali & Alvarez, 2004). As schools reward successful students with admission into higher level courses, with more qualified teachers and/or more rigorous programs, the gap between those who are successful and those who are not tends to grow over time, especially in middle school and high school

(Caro et al., 2009). The educational process as an institution may, therefore, inadvertently alienate lower income students from access to academic success.

In summary, “CA [Cumulative Advantage] becomes part of an explanation for growing inequality when current levels of accumulation have a direct casual relationship on future accumulation. A CA is capable of magnifying small differences over time and makes it difficult for an individual or a group that is behind at a point in time in educational development, income or other measures to catch up” (DiPrete & Eirich 2006, p. 272). This process results in an academic gap that gradually widens over time in disadvantaged populations and places them at risk for a trajectory of academic failure (Caro et al., 2009; Klein et al. 2000; Phillips et al., 1998; White, 1982).

The goal to produce a common American identity through education has discounted the uneven playing field inherent in education. Students’ cultural, ethnic, and economic heritages continue to play a significant role in the persistence of the achievement gap. This research will examine if students from low SES schools in this school district experience the repercussions of cumulative disadvantage, as expressed in a widening of the academic test scores in the middle school years, when compared to students from high SES schools.

## Research Questions and Null Hypotheses

I have [had my job] threatened so many times that it is really meaningless. Maybe somebody will come some day and take my job away, but every year they say it and every year it doesn't happen...the scores never go up as much as they are supposed to...You have to have stability over a period of time [to see gains in student achievement] and we haven't had that. When you don't have a real principal, everything falls apart.

This study used a sequential mixed-method approach (Creswell, 2009) to assess if the academic gap increases over time in low income middle schools in a school district in Southern Arizona. Students who attended the district's low income, high minority middle schools were compared to students who attended high SES middle schools in the same district. Additionally, teacher self efficacy and cultural competency from the low SES schools was examined to assess the impact on the academic performance of students.

The following hypotheses guide this research:

- 1: Is there a significant difference in standardized scores from the AIMS test between high and low SES students and schools in grades 5 – 10?
- 2: Is there a significant difference in a widening of the academic gap, in the trajectory from elementary to high school, between high and low SES students and schools?
  - Research on the academic gap has reported that by 3<sup>rd</sup> grade, the gap widens between white students and minority students during the middle school years, and remains that way through high school. The cumulative

disadvantage of being poor, minority, and attending a school of similar demographics results in a widening of the academic gap (Caro et al., 2009). Middle school appears to be the weak link for students from low SES backgrounds. In this district, it is hypothesized that the academic gap will not widen during the middle school years, but will remain constant, so that the size of the gap in 5<sup>th</sup> grade will be highly correlated to the size of the gap in 10<sup>th</sup> grade. In other words, students from low SES backgrounds will be learning at the same rate as students from the high SES backgrounds, from elementary school through high school, despite the multiple deficits they face at home and in their neighborhood.

3: Is self efficacy a greater determinant in teachers' choice to remain at a hardship school than other school conditions such as leadership or location?

- As these teachers have seen administrators come and go on a regular basis, they depend more upon their own expertise for teaching strategies than the direction of the administrative staff as a coping mechanism. Teachers working in 'hardship' middle schools prefer a school climate that provides relative autonomy in the classroom and light supervision.

4. Does teacher self efficacy and cultural competency help to narrow the academic achievement gap?

- Research indicates that having a larger amount of minority teachers also positively affects academic performance and attachment for minority students (Crosnoe et al., 2004). Many teachers working in hardship

schools are either members of the dominant school culture, or culturally competent, or both. This competency will beneficially impact student academic performance. Teacher's cultural competency includes:

- a strong identification with the culture/language of students
- a strong sense of self efficacy and
- a belief that higher education will elevate students out of poverty.

Statistical analyses will test the null hypotheses 1-2 against similar alternate hypotheses:

- Ho1: There is no significant difference in standardized scores from the AIMS test between high and low SES students and schools when controlling for SES
- Ho2: There is no significant difference in a widening of the academic gap over time between high and low SES students and schools

For hypotheses 1 and 2, a statistic such as hierarchical linear modeling and/or ANOVA will be used to test if the null hypothesis is valid. Creswell (2005) expressed that “statistical significance is when the observed values (e.g. before and after a treatment in an experiment, the difference between mean scores for two or more groups or the relationship between two variables) provide a statistical value (p-value) that exceed the predetermined alpha level set by the research” (p.599). He went on to explain that to accept or reject the null hypothesis, the following rules must be adhered to:

- a. If the probability value (p-value) is less than or equal to the significance level, then reject the null hypothesis and conclude that the research finding is statistically significant

- b. If the probability value is greater than the significance level, then fail to reject the null hypothesis and conclude that the research finding is not statistically significant (p.191).

### **Definition of terms**

1. *Achievement gap*: The disparity in educational performance among multiple groups of students identified by ethnicity, socio-economic status, or gender.
2. *Arizona's Instrument to Measure Standards (AIMS)*: A standardized, state mandated, criterion-referenced test, designed to measure the academic achievement (in the areas of math, reading, and writing) of all students in Arizona from grades 3-8 and 10; scores range from 1-4 (Falls Far Below the Standard, Approaches, Meets, and Exceeds the Standard).
3. *Concurrent triangulation*: A strategy for mixed methods analysis with qualitative and quantitative data being used concurrently. A comparison of the data will indicate convergence, differences, or some combination thereof.
4. *Dependent variable*: A variable that depends on the independent variable. They are the outcomes or results of the influence of the independent variables.
5. *Dynamic Systems Theory*: An approach that emphasizes reciprocity of influence among interdependent biological, social, and environmental components of systems over time.

6. *Ecological Approach*: a heuristic framework with a series of levels that influence human development including: micro-systems (proximal settings), meso-systems (relationships between micro-systems), exo-systems (non-proximal settings), and macro-systems (systems that create consistency or order).
7. *Grounded Theory*: A qualitative strategy that elicits a general, abstract theory of a process or interaction that is grounded in the participant's perspective in research.
8. *Human Agency*: The capacity to make choices and to enact those choices on the world. Human agency is the opposite of natural forces which are causes that involve unreflective and deterministic processes.
9. *Holism*: The understanding of society as a complex, interactive whole. An Ecological approach frames holism by including biological, social, physical, and economic views in a given area.
10. *Independent Variable*: A variable that can influence, cause, or affect outcomes.
11. *Longitudinal Student Data*: Data collected over time by schools to track individual student academic progress as well as other data.
12. *Meritocracy*: A powerful class of people who have achieved position on the basis of their merit (ability and talent) rather than by birth or privilege.
13. *Mixed Methods Approach*: Research that combines and mixes both qualitative and quantitative approaches in the investigation and interpretation of results in a study.

14. *Null Hypothesis*: A prediction that no relationship or no significant difference exists between groups on a variable.
15. *Qualitative Research*: An investigative method to explore the meaning individuals or groups attached to a social or human problem. The process uses open-ended or emerging questions and data is collected in the participants' environment. Analysis of data is inductive and builds from particular to general themes in the interpretation of the meaning of the data.
16. *Quantitative Research*: A process of testing objective theories by assessing the relationship among variables. As the data is numerical, these variables can be measured with analytic instruments using statistical procedures.
17. *Scholastic Aptitude Test (SAT)*: Widely used college admission exam
18. *Sequential Mixed-Methods*: An approach used by researchers to elaborate or expand on the results of one research method with another method.
19. *Socioeconomic Status (SES)*: a measure of a person's work experience, economic, and social position relative to others; based on income, education, and occupation.
20. *Syndemics*: A holistic approach that describes an inextricable and mutually reinforcing relationship between public health problems such as substance abuse, violence, and AIDS among urban U.S. women.

## **CHAPTER 2: LITERATURE REVIEW**

This section reviews the educational literature pertaining to the culture and social climate of schools, with an emphasis on middle schools. This section is divided into three levels that make up the culture of a school: The student, the teacher, and the school. It begins with an overview of the social and emotional development of adolescents. Next, a review of the middle school teaching experience in low income schools is discussed. Finally, a brief overview of how the middle school concept was developed is presented.

### **The Student: Identity formation of adolescents**

Adolescence is the transitional phase between childhood and adulthood. Upon entering middle school, many youth have left the familiarity of their neighborhood elementary school and become exposed to a larger, more diverse, and impersonal middle school. Peer relationships and a sense of ‘belongingness’ take on enormous importance as youth recognize different social grouping and try to fit in. Issues of ethnicity; culture; gender; school performance; and ability such as musicianship, athleticism and artistic expression; as well as socio-economic status become even more salient to adolescents as they experience their emergent identities. As Roeser et al., (1998) commented,

Upon entry to early adolescence and middle school, many youth perceive themselves as less academically competent; perceive school as less interesting,

important, and useful; and receive lower teacher-rated grades...In terms of psychological functioning, a substantial number of young adolescents report depressive symptoms, declining self-esteem, and increased engagement in school misconduct...Clearly, the early years of the adolescent period are marked by significant changes in adolescents' academic and psychological functioning (p. 125).

Integral to adolescent development are feelings of a need for belonging and acceptance from peers. Youth develop a group identity primarily through participation in cliques or small groups of tightly knit friends (3 – 10 people) who are with each other constantly. Friends in cliques conform to one another by sharing the same likes and dislikes, dressing alike, participating in the same activities, listening to the same music, and being largely of the same ethnicity, age, grade, and socio-economic standing. Cliques thus represent the acquisition and expression of shared values and behaviors. Membership can be very fluid and volatile during adolescence because youth are in the process of change by developing their social skills and their own sense of identity (Rice & Dolgin, 2002).

The universal desire to have a friend with whom to share common experiences is so powerful during the middle school years that adolescents adapt to their immediate environment as best as they can through some degree of social mimicry (Jovonen & Ho, 2008) or other peer conformity. As a result, most youth have at least one reciprocated friendship. For those youth who are friendless or struggle with low self esteem, they can fall into an undesired state of disequilibrium. To accommodate for their low social

ranking, they may seek to emulate peers by assuming their characteristics in hopes of gaining friends (Bukowski et al., 2008). Students who feel rejected by peer cliques may also feel alienated and lonely. An alienating situation arises when the individual lacks control over his environment, which produces a sense of frustration and powerlessness. Feeling a lack of power/status can lead to a possible withdrawal from the environment or deviancy against the dominant force (Bourdieu, 1977; Islam, 2005). Aggression, criminality, experimentation with drugs, alcohol, or sexual activity, gang affiliation, and disengagement from school are the most common forms of deviancy for middle school students. However, in most cases, a lack of social status for an adolescent results in a perceived need for conformity to the social norms of dominant peer groups to be able to fit in (Barry & Wigfield, 2002).

Midgley et al. (1989) developed the Stage-Environment Fit Theory for school environments. They claimed that if the fit between the needs of early adolescents and the opportunities provided to them in middle school/junior high was inadequate, then a decrease would result not only in individual motivation, but also in the attachment to the overall goals of the institution. They argued that an appropriate school fit for adolescents would encourage opportunities for student choice, respect for participation in class discussions, and high expectations from teachers. Additionally, cooperative learning would occur in classrooms, rather than competitive learning, so that academic abilities among diverse students would not be compared.

During these middle years, adolescents seek an identity with their peer network as they begin the slow, separation process from their own parents. How adolescents feel

about their own level of social competency can affect their interactions with others.

Those adolescents who perceive themselves to be socially competent are generally more socially accepted, and those who perceive themselves not to be socially competent, struggle more with peer friendships. As Barry & Wigfield (2008) noted, “children who perceive themselves to have low levels of social acceptance tend to be rejected by peers and to experience high levels of loneliness, depression, and anxiety” (p. 144). In response to being the ‘other’ (Malinowski, 1948), adolescents who feel isolated may form their own social group among other disaffected youth as a defense mechanism or try to change their own identity to become more similar to peers in an attempt to fit in.

This feeling of isolation may also be compounded by the differences in role expectations from the adults in their home environment versus the adults in their school environment. Adolescents living in poverty often assume adult responsibilities such as taking care of younger sibling or older family members at home. Additionally, to be able to survive in their community, they may develop a different set of social skills than their higher income peers (Burton et al., 1996). Some skills, such as assertiveness and self sufficiency, may be adaptive in their home environment. However, in school, where middle class social skills are valued such as collaboration and compliancy, these students might be regarded as disruptive. For minority students, and especially for those living in poverty, feelings of cultural dissonance with the mainstream educational value system can be particularly potent which can lead to feelings of social or educational alienation (Baumeister & Leary, 1995). Students living in poverty may skip the intermediate stage of adolescence in the trajectory from childhood to adulthood because

of the responsibilities they must take on to support their family (Burton et al., 1996).

The current 'one size fits all' theory of adolescent development conceived largely from white middle class experiences may, therefore, have limited applicability for adolescents growing up in poverty.

As early adolescents increasingly seek out non-parental role models, teacher relationships play a critical role in keeping students engaged with their school environment. Adolescents who feel that their teachers value and respect them may feel increased confidence and find school more meaningful (Roeser & Eccles, 1998).

Adolescent positive relationships with teachers and other staff are, therefore, essential during this time to increase a sense of social safety as well as academic success.

Midgley et al. (1989) observed in a longitudinal study among 1,300 students that student-teacher positive relationships generally decreased in the transition between elementary and middle school in math classes. Sixth grade students reported that their teachers cared less about them, were less friendly, and graded them less fairly than their teachers in elementary school. Low-achieving students were especially sensitive to this change. Students who perceived their math teachers to be less supportive than the teachers they had in elementary school, valued math less. Yet, if teachers were perceived to be more supportive, then their math value increased. This finding underscores the need to foster a school environment where teachers are accessible to a relatively limited number of adolescents on a regular basis. As Eccles et al. (1991) noted, "the declines in motivation often assumed to be characteristic of the early adolescent period are less a consequence of the students' developmental stage than of

the mismatch between the students' needs and the opportunities afforded them in many middle grades school settings" (p. 538).

In summary, with an increased level of social sophistication during adolescence, youth become acutely aware that social relationships are complex and confusing because they may feel accepted by some peers but not by others. Moreover, some peer opinions carry more salience than others. This uneven and subjective peer evaluation might provide mixed messages to an adolescent's perceived level of social competency and academic performance. Positive teacher relationships are especially important for adolescents to provide a sense of belonging, respect, and safety in a multifaceted social environment such as middle school.

### **The Teacher: Who works in high poverty middle schools?**

The sorting of teachers in schools is nothing new in educational research. How satisfied a teacher is in a school generally represents the level of compatibility or fit between the teacher and school working conditions (Becker, 1952; Johnson & Birkeland, 2003; Murnane & Steele, 2007; The Teaching Commission, 2004). School working conditions include wages, class size, administrative support, school facilities, commute time, input on school-wide decisions, and resources for students (Horng, 2009). Teachers tend to leave schools if the fit is low and seek out an environment that better suits their professional needs (Jackson, 2010). Lower-performing schools have increased challenges attracting and retaining effective teachers and subsequently,

ineffective teachers disproportionately get placed there to fill the gaps. The disparity of quality instruction between low income children and higher income children, therefore, becomes primarily a gap of opportunity (Alliance for Excellent Education, 2008).

Having an effective versus an ineffective teacher can significantly negatively impact student learning and academic performance. An ineffective teacher, for example, can result in a loss of more than a full year of standardized achievement for a student (Hanushek, 1992; Sanders & Rivers, 1996). On the other hand, having consistent, effective teachers can repair prior learning gaps. Research by Sanders and Rivers (1996) revealed that students exposed to effective teachers three years in a row made twice the gains as a comparable group of students with less effective teachers (Alliance for Excellent Education, 2008).

### **The negative association of teachers in low performing schools**

A wealth of literature exists on why teachers leave ‘hardship’ schools. However, a paucity of ethnographic research exists on why teachers persist in low income, low performing schools. The predominant tone in educational research about teachers who remain in low performing schools is pejorative by casting them as a “second class” teacher corps. This negative labeling is based on a number of criteria that proclaims that teachers in low-performing schools are less qualified than teachers in suburban schools. Criteria such as teaching certification exam scores, overall college GPA’s, and the competitive rank of the colleges, traditionally have been used to measure teacher quality in addition to the level of experience in the classroom and amount of teaching outside of their area of training (Alliance for Excellent Education, 2008; Jacobs, 2007; Murnane &

Steele, 2007). This pejorative tone is captured in Haycock's (2004) summary of teachers in low performing schools. She stated,

We sometimes see absolutely wonderful teaching in all kinds of schools. Even the lowest-performing schools always seem to have some terrific teachers. But we often see teaching that is dreadful, especially in the highest-poverty schools....The pattern nationally is the same no matter which indicator of teacher quality one uses certification status, years of experience, performance on licensure exams, academic major in field, quality of undergraduate institution, or even effectiveness in producing student learning. Typically, and this is the case across the country, students who are most dependent upon their teachers for academic learning are systematically assigned to teachers with the weakest knowledge and skills (p. 230, 231).

Haycock asserted that the college where a teacher was educated and his/her own academic performance can predict high quality teaching. Yet, educators should question if these measures are really the best indicators to evaluate teacher prowess in diverse school settings. Researchers have attempted to characterize and quantify the essential traits of an effective teacher, without consensus, for decades. This task is problematic as the definition of what constitutes an effective teacher has changed over time and subsequently, so has the criteria used to measure it (Ellett & Teddlie, 2003; Goe et al. 2008; Murnane & Steele, 2007; Patrick & Smart, 1998; Van de Grift, 2007). Recent research has revealed that characteristics such as being certified, age of teachers, or advanced degrees, which have historically been used to measure teacher effectiveness do

not actually make teachers more effective or positively impact student achievement (Goe et al. 2008; Jacobs, 2007). Nonetheless, these characteristics have been consistently used by researchers to label teachers in low-performing schools as “second class” and under-qualified. Over the last five years, educational researchers have suggested that teacher effectiveness can be more accurately measured with characteristics such as having one to three years of experience, a high cognitive ability, cultural competency, and the teacher’s contribution to student academic growth as measured by test scores (Hanushek & Rivkin, 2007; Jacobs, 2007). Please refer to Appendix F for Goe et al.’s (2008) definition of effective teaching.

### **Assessing school working conditions**

School working conditions are significant predictors of teacher turnover (Hanushek & Rivkin, 2007; Horng, 2009). The conditions that can be measured quantitatively are discipline issues, availability of resources and facilities status, amount of teacher turnover, student mobility, level and type of state/federal sanctions, and location. They can be measured statistically using value-added calculations to assess teaching and school effectiveness. However, conditions that are harder to measure with a statistical model include school leadership quality, collegiality with peers, the level of parental involvement, curricular autonomy, and feelings of safety (Loeb et al., 2010; Murnane & Steele, 2007). Qualitative methods are needed to understand the linkages between these ecological conditions and the social relationships within a school. To date, ethnographic research among teachers who persist in hardship schools is scarce in educational research. Three exceptions are Becker’s ethnographic work with Chicago

teachers (1952), Nieto's book on what motivates teachers to stay in the profession (2003) and Johnson and Birkeland's work with Massachusetts teachers (2003).

Becker's researched why teachers stayed in 'slum' schools in Chicago in 1952. This study revealed that teachers chose to remain in schools with difficult working conditions because it was easier than transferring to a more demanding school. Rather than working in a potential hostile environment of parents, peers, and administration with higher academic expectations, these teachers adapted to the climate of the hardship schools with harsher student discipline tactics, lowered expectations of student learning outcomes, and greater feelings of sympathy for the families' struggle against poverty. These teachers also became comfortable with the relative freedom of their work environment in hardship schools due to minimal administrative or parental intrusions and were gradually able to accumulate status in the community. In sum, Becker (1952) concluded that "people tend to move in patterned ways among the possible positions, seeking that situation which affords the most desirable setting in which to meet and grapple with the basic problems of their work" (p. 470).

Nieto was part of an inquiry group project as a Fellow at Brown University to understand why teachers persevered in the face of professional difficulties. From her research among teachers in the Boston public schools, she concluded that mastery teachers who chose to stay in teaching believed/practiced the following:

- Teaching is viewed as an intellectual endeavor that needs constant nurturing and reflection

- Teaching is about – and for – democracy and the need to have student practice democracy in the classroom (e.g. topics such as equality, equity, rights, and responsibilities as a citizen)
- Teaching involves love and respect which includes embedded high expectations for students
- Autobiography is an essential part of teaching
- A community of supportive teachers is needed to stay connected to profession

She advocated that the most efficient way that teachers can become master educators is to refine the skills that they have already brought with them to the profession. This approach is different from trying to ‘fix’ teachers by making them conform to a more structured and narrow view of what a proficient teacher should be through school or district mandated professional development exercises.

Recently, Johnson and Birkeland (2003) conducted a 3-year longitudinal, qualitative study among 50 new teachers in Massachusetts to describe reasons for teacher mobility. The teacher cohort was grouped as ‘leavers’, ‘movers’, and ‘stayers’. After three years, the leavers felt a sense of frustration and failure from lack of support/resources and left the profession altogether (20%) while all the movers transferred to schools serving wealthier populations than the one they left (24%). The movers sought out more stable facilities, a more supportive professional climate, appropriate assignments, and the ability to initiate and sustain improvement strategies. Indeed, the schools with the greatest instability were located in the most impoverished communities

which “says more about the inadequacy of inequity of public education in the United States than it does about the preference of teachers to work with wealthier students” (p.599). The stayers (56%) were all committed to the students. About half of the stayers were unsettled about staying longer for the same reasons as the movers indicated while the other half were settled in their positions, felt high commitment and confident about being effective teachers.

What teachers had in common from the recent studies from Nieto and Johnson & Birkeland was a high sense of professional self efficacy. Both of these studies highlighted that teachers who persisted in low income schools chose to remain because of the personal rewards including positive relationships with the students and surrounding community. Self-efficacy is different from other self constructs such as self-concept, self-worth, and self-esteem. What sets self-efficacy apart is it’s specificity to a particular task (Goddard et al., 2004). Bandura (1994) defined self efficacy as “people’s beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives” (p. 71). How people feel, think, motivate themselves, and behave are all influenced by their perceived self efficacy. People with high self efficacy:

- View challenges as tasks to be mastered
- Develop intrinsic interest and deep absorption in activities
- Establish challenging goals with sustained commitment
- Recover quickly from setbacks and disappointments

- Attribute failure to insufficient effort or a lack of knowledge or skills that can be acquired

Conversely, people with low self efficacy:

- View difficult tasks as threats to be avoided
- Attach low commitment and aspiration to goals they have chosen
- Focus on personal deficiencies, obstacles and negative outcomes
- Lose confidence quickly in personal abilities and fall victim to depression
- Are slow to recover from setbacks and disappointments

In practice, how self efficacy is demonstrated in the classroom and how it should be measured is still being defined by scholars. Nonetheless, a body of research has revealed that the level of teacher self efficacy can predict successful teaching. As Goddard et al., (2004) reported from their collation of educational research,

Teachers with strong perceptions of self capability tend to employ classroom strategies that are more organized and better planned, student centered, and humanistic. Teachers' efficacy judgments are also strongly related to trust, openness, and job satisfaction...[which] provide considerable explanation for the positive link between teachers' sense of efficacy and student achievement because such approaches and attitudes are widely accepted as educationally productive (p. 4).

In conclusion, working in a low income school presents challenges, inequities, and frustration to teachers. Published research is available on why teachers leave

hardship schools with a primary reason as a ‘lack of fit’ between the teacher and the school working conditions. Conversely, a paucity of research exists on why teachers choose to remain in hardship schools and what factors in the school environment are most amenable for staying there. In order to sustain the effort that is needed to be successful in a hardship environment, day after day, effective teachers need a solid sense of perceived high self efficacy to promote an optimistic outlook and a sense of positive well-being (Bandura, 1994).

### **The Middle School: An Overview**

At the beginning of the 20<sup>th</sup> century, K-8’s and K-12’s were the primary school systems. Over the next century, as adolescence was increasingly viewed as its own unique developmental phase, the structure of middle years schooling changed dramatically. By 1904, G.S. Hall had characterized adolescence as an unpredictable time of *sturm un drung* or storm and stress (Cuban, 1992). Other developmental theories became popularized around that time by eminent psychologists, such as Freud and Piaget, which also defined specific stages of growth. As a response, junior high schools for grades 7 – 8 or 9 were created to meet specific adolescent developmental needs and to curb drop-out rates. Junior highs were intended to be a schooling experience distinct from elementary and high school and this model prevailed for about 50 years. By 1960, about 80% of adolescents were attending a junior high (Pardini, 2002).

Over the next decade, however, criticism of the junior high system peaked as they were viewed as duplicating high schools and not adequately meeting the developmental needs of adolescence (Jackson et al., 2000). The American psyche noticeably shifted its focus in the 1960's from industrialized capitalism to more humanitarian issues such as civil rights and other social movements (Jackson et al., 2000). The design of middle schools reflected this cultural change, with the dual intention of helping students develop emotionally and socially, as well as becoming the primary vehicle to implement new desegregation policies (George, 1988). The creation of middle schools also conveniently served to mitigate the overcrowding problem in elementary schools. It was less expensive and less segregating to move students into a middle school than to construct new neighborhood elementary schools (Beane & Lipka, 2006; George, 1988; Theobald & Siskar, 2008). Finally, the earlier transition was regarded as beneficial developmentally by educational scholars, as it would occur before youth entered puberty, to provide a safe environment with like-minded peers (Wigfield & Tonks, 2002). The middle school concept was implemented across the nation in varying degrees, but it lacked a cohesive identity until about 1989. The influential Carnegie Council report, *Turning Points: Preparing American Youth for the 21<sup>st</sup> Century* (1989) and Paul George's (1988) article, "Which Way the Middle School?" helped to characterize the middle school concept as "the belief that the purpose of schools is to create children imbued with egalitarian principles—in touch with their political, social, and psychological selves – who eschew competition and individual achievement and instead focus on identity development and perceived societal needs"

(Yecke, 2005, p. 2). The middle school concept was, therefore, designed to isolate early adolescents from other age groups in order to meet their unique needs through a ‘best practices’ of pedagogy, instructional practices, small teaching teams, greater understanding of youth development, and targeted professional development for teachers (Bean & Lipka, 2006; Byrnes & Ruby, 2007). By 2000, almost 60% of schools were reconfigured as middle schools (National Middle School Association [NMSA], 2001).

When the ‘best practices’ were implemented as intended, middle schools demonstrated anticipated increases in academic achievement and decreases in behavior problems. Yet as a whole, these ‘best practices’ were not implemented with consistency or fidelity even by middle schools with a highly motivated administrative and teaching staff. This model required additional staff training, resources, and commitment from the teachers and administrators that was difficult to maintain (Booth et al. 2007). As Mac Iver & Epstein (1993) noted in the 1990’s, “few middle grades schools have implemented many of the practiced recommended for the education of early adolescents, and even fewer have implemented them well. Progress is likely to continue to be slow... comprehensive restructuring of the middle grades may be a 5-year activity at the school and district levels” (p. 530). Rather than fully adopting the middle school concept, the end result was that many schools functioned much like junior highs that simply added a 6<sup>th</sup> grade. Additionally, the partial implementation of the middle school model resulted in a lack of academic rigor and decreased student achievement (Watson, 2009). These ‘cumulative effects’ (Simmons et al., 1987) placed students at risk for

developmental problems such as lowered self-esteem, early sexual activity, or academic disengagement if several detrimental changes occurred simultaneously.

With the increased emphasis on interpersonal relationships during adolescence, Weiss & Kipnes (2006) argued that the middle school structure does not provide adequate opportunities for adults to interact with students. Adolescents have reported feeling more negative about the value of education, as well as their own academic abilities, when they enter into new middle schools. Roeser et al. (1998) observed that,

Entry into middle school marks significant changes in the social, instructional, and organizational features of school...The secondary school environment is often at odds with the developmental needs of young adolescents, leading to declines in their school motivation, performance, and well being...[thus] a focus on comparison and competition in middle school is psychologically uncomfortable for many adolescents; is at odds with their need for a safe, supportive environment to develop their competencies, and thus undermines their feelings of commitment to school and feelings of personal well-being (p.149, 152).

Also, girls in middle schools expressed lower self esteem and felt a greater sense of anonymity when compared to students in a smaller K-8 setting, while boys were less negatively impacted socially (Booth et al., 2007; Roeser et al., 1998; Simmons et al., 1977; Weiss & Kipnes 2006). According to Eccles et al. (1991), the following factors are associated with the change from elementary to junior highs or middle schools:

- Greater emphasis on teacher control and discipline
- Less personal and positive teacher-student relationships
- Fewer opportunities for student decision making, choice, and self-management
- A climate of greater control school-wide
- Increase in practices such as whole-class task organization, between classroom ability grouping and public evaluation of the correctness of work, encouraging the use of social comparison and ability self-assessment
- Lower level of cognitive skills than class work at the elementary level
- Teachers use a higher standard in judging students' competence and in grading their performance, leading to a decline in grades

The relevance of school can drop during adolescence because some students regard social activities as more important and more pleasurable than academic activities. For example, Wentzel's (1989) research found that "high, middle, and low achieving adolescents had quite different sets of goals, with the high achievers focused more on several of the achievement-related goals and social responsibility. The middle achievers and low achievers focused more on social interaction goals, and low achievers in particular stated they did not try to win others' approval, or to be successful" (*in Eccles & Wigfield, 1996, p. 18*). In short, the current middle school model is set up to reward the high achievers academically. It does not adequately recognize the needs of the

moderate and low learners to interact in a safe and nurturing community so that they can be more successful academically.

Middle school advocates, such as Susan Swaim, director of the National Association for Middle Schools, defended the middle school concept by stating that, “the middle level school movement cannot be faulted for educational deficiencies it did not create and practices it did not recommend” (Swaim, 2004, p. 35). In other words, to disregard the entire philosophy behind middle schools in favor of other models because of improper implementation could well be preemptive and undeserved. Research by Felner et al. (1997) supported this position. They conducted longitudinal research among 97 schools in Illinois that were restructured to embrace the *Turning Points* vision of a middle school. The authors of *Turning Points* believed that true middle level schools designed specifically for adolescents should have the following components (Jackson & Davis, 2000):

- Smaller communities for learning so each student will receive sustained individual attention
- A core of common knowledge grounded in robust standards that foster curiosity, problem solving and critical thinking
- interdisciplinary teams that develop and facilitate meaningful learning opportunities including cooperative learning and other techniques suitable for this developmental phase
- Teachers and principals have the major responsibility and authority to make decisions about their student’s learning.

- Teachers need to be specifically prepared to teach young adolescents
- Good health development, emphasis on life sciences and academic strength run parallel to ensure all students are supported
- Families are allied with school staff through mutual respect, trust, and communication
- Schools and communities are partners in educating youth through service learning

To be included as a school in Felner et al.'s research, high commitment was required in meeting the rigorous restructuring criteria. Schools were then grouped into high, medium and low levels of re-structuring implementation. The results revealed that when implemented with fidelity, the middle school concept was successful. Felner et al. (1997) assessed that "it takes fairly comprehensive and intensive levels of implementation for the suggested changes to produce major gains in all spheres of functioning of high-risk students [and that]...high-quality schooling, well implemented, can make profound contributions to the achievement, mental health, and socio/behavioral functioning of students who are often left behind and for whom there is often a sense that school cannot make a difference in their lives" (p. 550). Research by Anfara and Schmid (2007) suggested that the transition to a middle school could be beneficial when the adolescent academic and psycho-social development is taken into consideration. For example, some students "are afforded the chance of a fresh start" (p. 5), which would be especially important for students with previous peer conflicts, grade retention, or low school attachment.

Beane (1999) surmised that the greatest criticism of the lack of rigor associated with the middle school concept comes from a vocal group of upper-middle class competitively-driven parents, who oppose egalitarian practices of heterogeneous grouping, where the more advanced students are supposed to help the struggling students. He argued that this group desired that (their own) advanced children learn at an accelerated pace in a select group with other advanced students. George (2005) viewed that the failure of middle school concept was larger than the school itself and was the cumulative result of the failure of the entire community. He stated, “‘troubled’ middle schools are likely to result from troubled lives-millions of students and families afflicted by the harsh impact of poverty, violence, divorce, homelessness, forced mobility, alcohol and drug abuse, lack of adequate health care, and the studied contempt of policymakers, bureaucrats, politicians, and corporate CEO’s who lack the will or the interest to provide the leadership and resources required for permanent and pervasive improvement in our schools. Troubled schools are not the result of the grade configuration or the name of the school” (p. 12).

Irrespective of where blame lays, the middle school concept has been increasingly viewed as education’s ‘weak link’ (Anfara & Buehler, 2005). This perception was reinforced when the results of large scale international testing revealed a precipitous decline in academic prowess among middle school students including (Yecke, 2005):

- The Third International Mathematics and Science Study (TIMSS) results revealed that national scores in science and math dropped significantly between 4<sup>th</sup> grade in 1993 and 8<sup>th</sup> grade in 1999.
- The National Assessment of Educational Progress (NAEP) has stated that no state has improved reading scores in 8<sup>th</sup> grade since 2003 and remained at the same level that spurred the ‘nation at risk’ concern in 1983. Conversely, 8<sup>th</sup> grade math scores have increased slightly since 1990.

In summary, after a century of sweeping reform, separating adolescents from other age groups first with a junior high system and then later with middle schools, little positive effect has been evidenced on the educational practices in the middle grades, especially for disadvantaged youth (Booth et al., 2007). Across the country, middle schools were, in effect, established to deal with the overcrowding of schools rather than to meet the developmental and academic needs of adolescents. A lack of purpose for the middle school concept was the result of these decisions. Furthermore, the earlier transition from 5<sup>th</sup> to 6<sup>th</sup> grade showed negative effects both academically and socially on students. Finally, national and international comparisons of student achievement between the United States and other countries showed a decline in the academic achievement during the middle years, which encouraged the assumption that rigor was lacking (Watson, 2009). In sum, middle schools have been portrayed as “impersonal, inequitable and irrelevant structures and curriculums” (Beane & Lipka, 2006, p. 27) which has translated into poor test scores and increased discipline problems (Gewertz, 2004).

## Summary

Research among middle school populations has exploded over the last couple of decades. The awareness that adolescence constitutes one of the last prime opportunities to impact long-term educational and personal trajectories among students has swelled, especially those at risk (Mac Iver & Epstein, 1993). Indeed, in just 12 years between 1991 and 2003, more than 3,700 studies related to middle schools were published in an attempt to characterize the educational and social trends of this population (Hough, 2005).

Described in developmental psychology terminology, the mission of the middle school was “to build places where 10-to-14-year-olds can learn in ways tailored to their growth spurts and the marked diversity of the age group” (Cuban, 1992, pp. 242-243). This conceptual change shifted “away from the junior high as a ‘preparation for high school’ and toward the middle school as a ‘child-centered institution’” (Anfara & Buehler, 2005, p. 53). The middle school movement called for teachers with subject area specialties as well as increased opportunities for flexible scheduling, interdisciplinary instruction, team teaching, and special training to work with adolescent populations. Students were to be taught in small learning groups within a larger middle school population and families and communities were to collaborate in the learning process (Anfara & Buehler, 2005; Booth et al., 2007; Weiss & Kipnes, 2006).

In an effort to understand the impact of middle schools as an educational system, researchers from a variety of disciplines have examined a host of academic,

psychological, and social outcomes. The results indicated that the middle school model had fallen short of its goals. Almost all research studies have concluded that the confluence of the transition into a new school environment with the onset of puberty put students at a social and academic disadvantage (Weiss & Knipes, 2006).

Good teaching has a direct impact on student learning and academic growth. As teacher quality is the single most important factor in producing the greatest impact on student achievement, matching the fit of a school with good teachers is paramount to a school's success and teacher retention, especially in low performing schools (Hanushek et al., 2005). However, a paucity of research exists as to why effective teachers persist in low income middle schools. Also, middle school has been emphasized as a critical time for strong and respectful relationships to be developed between teachers and students. Yet, in the typical middle school model, teacher-student contact is limited because students rotate from class to class and teachers could have a hundred or more students during a typical school day.

The current 'fit' between the middle school structure and adolescent needs is not particularly well aligned. Adolescents are more developmentally ready to assert control over their actions and yet are provided with fewer opportunities for decision-making and choices during middle school (Eccles et al., 1991). This process of developing an identity involves efforts to gain power and social status for increased independence (Cillessen & Mayeux, 2004). A respectful and non-controlling school climate among teachers and students is critical for this age group, particularly for students living in poverty (Burton et al., 1996). Additionally, their sense of identity is malleable enough

so that adolescents could be strongly influenced by others or by their own perception of peer norms in seeking a balance between their actual and desired peer friendships. The Stage-Environment Fit theory (Midgley et al., 1989) advocates that the overall school psychological climate is linked to adolescents' own academic beliefs, achievement behavior, and school-related affect.

In conclusion, the middle years schooling represent a crossroads between American meritocratic ideals, adolescent identity development, and a lack of consensus on whether to isolate these students from other grades or to incorporate them. Of all the different stages of K-12 schooling over the last century, middle years schooling have seen the greatest changes in grade configuration, purpose, scale, and demands on educators. This review highlighted that the different decisions regarding middle years schooling has been strongly influenced by a combination of forces including history, psychology, sociology, and pedagogy (Seller, 2004). It also described the culture of middle schools in relation to the complex needs of adolescents due to their emerging physical, emotional, and intellectual change. The school professional climate was described and reasons were provided as to why teachers move or stay in low income schools. Finally, support was provided that the level of 'fit' of a school environment for both teachers and students can impact the level of academic success and social integration among adolescents.

## **CHAPTER 3: THE TARGET POPULATION**

### **District Characteristics and Test Scores**

This school district is situated in a medium-sized city in Southern Arizona of about 1 million inhabitants, located 60 miles north from the Mexican border. Latino culture contributes substantially to the local identity and traditions. The city is also the home to the University of Arizona, serving about 38,000 students, as well as Davis Monthan Air Force Base which employs about 6,000 military employees. An additional 13,000 military retirees reside in the area. The Tohono O'odham Tribe and the Yaqui Tribe both have reservations that are located in and around the city. The population is, therefore, diverse culturally and economically. The city is divided into three broad swaths: the east side which is primarily middle/high income and White; the central area which is mixed both ethnically and economically; and the west side which is primarily low/middle income and minority including a majority of Hispanic families, and to a lesser degree, Native American families.

In 2010, the U.S. Census Bureau announced that Arizona was ranked second across the nation for the highest percentage of residents living in poverty at 21.2%. The federal poverty index for a family of four is \$21,954. In other words, one in five Arizonans experiences hardship to meet basic necessities such as food and shelter. The majority of this city's residents live modestly with the median household income around \$33,259 a year. The median income for Arizona as a whole is just slightly higher at

\$34,282 (Arizona Daily Star, 2010). Compared to the rest of the nation in 2009, where the U.S. median family income was \$49,777, Arizonans make about a third less in income annually (www.census.gov).

The district used in this research is the largest district in Southern Arizona and the second largest in the state with about 55,000 students in 106 schools that covers an area of more than 200 square miles. In 1983, desegregation policies were implemented in the district to reallocate resources, increase school quality, and integrate schools with increased diversity through the introduction of magnet schools. At that time, about 70% of students were Anglo and 30% were minority. Shifting demographics over the last 25 years have resulted in a reversal of student enrollment where today, about 70% of students are minority and 30% are Anglo. Additionally, about two-thirds of families in this district live in poverty. Sixty percent of students receive the federal free food program and another 7% receive the federal reduced food program. In 2011, the student population included: Hispanic (56%), Anglo (29%), African American (8%), Native American (4%) and Asian/Pacific Islanders (3%). Other student characteristics that help to define this district are:

- About 22% of students are English Language Learners (ELL's).
- About 82% of students graduate from high school in four years.
- Student mobility is high so that only 1 in 3 students who begin as kindergarteners graduate from a district high school on average
- About 33% of graduating seniors go onto a 4-year college/university

In summary, this district is large with considerable poverty among its diverse constituents. The majority of the student population is minority with Hispanics making up the largest ethnic group.

### The Teacher Cohorts

Two data collection protocols were implemented in the qualitative study among teachers: open-ended qualitative interviews with 15 teachers (called informants) who taught at hardship schools for five years or more and a Likert-type survey with 116 teachers who taught at the same hardship schools. See Table 1 for a breakdown of participant response rates by school.

<b>Table 1. Number of Teacher Responses by Middle School (N=116)</b>				
<i>Schools</i>	<i>No. of Teachers Invited to participate by school</i>	<i>No. of Teachers who responded to the On-Line Survey</i>	<i>No. of Face to Face Interviews*</i>	<i>Percent of Participating Teachers from each school</i>
1	39	32	3	82%
2	31	20	4	65%
3	18	12	1	67%
4	39	27	3	69%
5	29	25	4	86%
<b>Total</b>	<b>156</b>	<b>116</b>	<b>15</b>	<b>74%</b>

*\*These teachers also filled out the on-line survey*

Fifty teachers were invited to participate in the face-to-face interview that lasted about 1 to 1 ½ hours. These fifty teachers were selected because they met the criteria that:

- They worked at a one of the five selected middle school for five years or more
- Their school served a low-income, high minority population
- Their school experienced frequent administrative turnover
- Their school is at risk for academic failure, falling under the sanctions established by the No Child Left Behind (NCLB) legislation.

Of these teachers, 15 or 30% responded to the invitation for participation. Additionally, a confidential, on-line school climate survey was made available to all teachers in the 5 low achieving middle schools. The purpose of the on-line survey was to describe the school working conditions at each school. A total of 156 teachers were invited across the 5 schools to participate of which 74% or 116 teachers completed the survey. Questions were overlapping on both the face-to-face interview and the on-line survey. Please see Appendices D and E to review the questions posed to teachers on each survey instrument.

### **Distribution of effective and non-effective teachers across the district**

According to the educational literature, less effective teachers are disproportionately employed in low-income schools (Annie E. Casey Foundation, 2010; Bali & Alvarez, 2003; Hanushek et al., 2005; Haycock, 2004). To examine the relative distribution of effective and non-effective math and language arts teachers in the district's middle schools, teachers were compared to one another in terms of student growth over one

year. Teachers were then ranked, using averaged student growth from the state's standardized test (called AIMS) with math and reading scores from 2006-07 and 2007-08. This data is relevant because the student cohort used in this study (the high school graduation classes of 2012) was enrolled in middle school during that time period from 7<sup>th</sup> to 8<sup>th</sup> grade. To be included in this analysis, students needed to have two years of AIMS data, be enrolled in a math or language arts class with ten or more other students, and have attended that class for 80% of the year with the same teacher. The percent of academic growth was calculated for each student over one year and these scores were then averaged by teacher. Finally, the teachers were ranked by comparing their overall percent growth to the other middle school teachers by subject. This data, thus, provided a relative ranking of teachers across the district for grades 6-8. All language arts and math teachers at the middle school level were included. Please see Table 2 for the distribution of the 25% highest and 25% lowest ranked teachers in a comparison of academic growth of their students over one year by school, grouped into high, medium and low SES schools.

<b>Table 2. A distribution on the 25% highest and lowest ranked teachers for student growth over one year from 2006-07 to 2007-08 using math and reading AIMS scores for students enrolled in grades 6-8</b>				
	<i>Top 25%</i>		<i>Bottom 25%</i>	
<i>SES School Groups</i>	<i>Reading</i>	<i>Math</i>	<i>Reading</i>	<i>Math</i>
High	12%	12%	2%	6%
Medium	43%	61%	63%	64%
Low	45%	27%	35%	31%

The high, medium and low SES schools have been divided so that about 25% of students attended the high SES schools, about 50% of students attended the medium SES schools and about 25% of students attended the low SES schools. The results of this data revealed that effective reading teachers were distributed disproportionately in the low SES schools, whereas the non-effective reading teachers were somewhat over-represented in both the medium and low SES schools. In math, the effective teachers were fairly evenly distributed across the district, whereas the non-effective math teachers were somewhat over-represented in the medium and low SES schools. Interestingly, high SES schools had an under-representation of both effective and non-effective teachers. The teachers in the high SES schools had, thus, been able to maintain average student proficiency from one grade to the next without significant increases or decreases in performance. This data conforms to educational research that non-effective

teachers are disproportionately located in lower income schools (Haycock, 2004).

However, the data also showed that effective teachers were also disproportionately located in lower income schools. In short, the middle and low income schools had an over representation of both effective and non-effective teachers. For students who live in poverty, an ineffective teacher can slow academic growth for years to come. Sanders & Rivers (1996) described the long-term impact of ineffective teaching on student gains from their research in Tennessee. He stated,

students assigned to ineffective teachers continue to show the effects of such teachers even when these students are assigned to very effective teachers in subsequent years. Although an effective teacher can facilitate excellent academic gain in students during the years in which they are assigned to them, the study found that "the residual effects of relatively ineffective teachers from prior years can be measured in subsequent student achievement scores (p. 4).

In sum, this data revealed that middle and low income schools have been heavily staffed by two dichotomous types of teachers: master teachers or low-skilled teachers.

### **Limitations of Teacher Cohorts**

The teacher ranking presented some formidable methodological limitations. Gifted and Talented teachers (GATE), for example, were always ranked in the middle because their students began and ended the year with about 100% proficiency and, hence, did not show positive or negative growth. Also, the schools with lower student scores had a greater potential to show larger gains in growth than schools with higher scores. Averaging is a gross measure for comparison and obscures any variation of skill

levels within the group. Finally, the relative ranking cannot provide an absolute value of teacher effectiveness, and thus relegates some teachers to higher or lower rankings, that may be more an effect of their peer group rather than their true teaching effectiveness. Even with these caveats, this data is instructive about the relative distribution of the district's effective teachers.

Another limitation of this study was that students in the longitudinal quantitative analysis were not matched to individual middle school teachers to assess academic impact. The effectiveness of teachers who were interviewed in the qualitative analysis could not be quantified through student academic performance. The 15 teachers who consented to be interviewed, unfortunately, did not all teach core math or language arts classes in 2007-08. Standardized test results become diluted or inferred when used to assess academic impact of non-core subject teachers. As a compromise, student academic performance was assessed as the school level in the three-level hierarchical linear modeling.

### **The Longitudinal Student Population Cohorts**

The graduating class of 2012 is currently made up of approximately 3,990 students. Of these students, 2,238 (or 56%) have continually attended a district school and have a complete set of standardized tests scores for grades 5, 6, 7, 8, and 10. These students made up the cohort of this study and were assigned one of three socio-economic groups (SES) of low, medium, and high. SES is generally described as “an

individual's or a family's ranking on a hierarchy according to access to or control over some combination of valued commodities such as wealth, power, and social status" (Sirin, 2005). Generally, the definition of SES is comprised of three distinct variables including parental income, parental education, and parental occupation as primary indicators (Sirin, 2005).

Census track median income provides a relative index of neighborhood SES. This index categorizes an aggregate measure of social and economic well-being that may or may not be greater than the resources available to the student at home. Although aggregated SES data from the neighborhood cannot be interpreted to represent family income in isolation (Sirin, 2005), it was used in combination with the Federal Food Program to infer relative income markers in this research. Based on census track median income and receipt of the Federal Food Program, at any point during their schooling, students were grouped into one of three income categories: low (<\$29,000 per year), medium (between \$30,000 and \$45,000 per year), and high (>\$45,000). Table 3 shows the SES group breakdown by student.

<b>Table 3. SES category by student</b>		
<i>Annual Income Range</i>	<i>SES Category</i>	<i>Number of Students</i>
\$29,000 and Below	Low	N=755 (34%)
\$30,000 - \$45,000	Medium	N=748 (33%)
Above \$45,000	High	N=735 (33%)
<i>Total</i>		2238

To qualify for the National School Free Food Programs, a family of four must be at 130% of the poverty guidelines or make \$28,665 or less per year. All students who received the federal free lunch program, at any time during their schooling, were placed in the lowest income category, regardless of their census track income, and made up 60% of the cohort. To qualify for Reduced Food Programs, a family of four must be between 131- 185% of the poverty guidelines or making between \$28,666.00 - \$40,793.00 per year. All students who received the federal reduced food program were placed in the middle income category, regardless of their census track income, and made up 7% of the cohort. The remaining 33% who did not receive benefits from a federal

food program were placed in income categories based on the median income for their neighborhood from census track data.

All student placements from census track data were matched against the federal Food Program data. The census track data and the National Free Food Program data matched perfectly for families at the economic extremes including the income ranges of below \$29,000 (low) and above \$60,000 (high). In other words, families who lived in low income neighborhoods all participated in the federal food program and families who lived in the high income neighborhoods did not participate at all. For middle income families, which fell between \$29,000 and \$60,000 range in census track data, some discrepancies emerged. The census track data placed this group in a somewhat higher income group than did the Federal Food Program data. This data suggests that these families are living in mixed income neighborhoods where the median income is somewhat higher than their own. Finally, any student without an identifiable address (about 1%) who did not receive any federal food assistance was placed in the middle income category.

Table 4 presents the 19 traditional middle schools grouped by SES at the school level as determined by the federal Free and Reduced Lunch program. Level 1 is the highest economic group with 35% or less students receiving free and reduced lunch per school. This group was made up of four schools with a total 8<sup>th</sup> student population of 515 or 24% of the sample. Group 2 was the middle economic level with students receiving free and reduced lunch per school being between 36% and 76%. The middle group was made up of 9 schools with a total 8<sup>th</sup> grade population of 1,039 students or

50% of the sample. Group 3 was the lowest economic level with a 77% or higher students receiving free and reduced lunch per school. This group was made up of 6 schools with a total 8<sup>th</sup> grade student population of 535 or 26% of the sample. Table 4 displays the percent who met proficiency on the 2007-08 AIMS in reading and math by school when this cohort was in 8<sup>th</sup> grade. The data indicated that the greater the poverty of the student population at the school level, the lower the overall academic proficiency, especially in math. The findings in Table 2 showed that effective teachers were fairly evenly distributed across the district in both math and language arts. This data suggested that effective teaching in isolation of other comprehensive school wide and/or community initiatives was not enough to compensate academically for students in low income schools. In Table 4, for example, the difference in academic performance between the high and low SES groups is about 25% in grade level proficiency in both reading and math. Please see Appendix C for a breakout of individual school AIMS scores.

<b>Table 4. 2007-08 AIMS 8th grade by school percent proficiency of the 19 middle school by SES groups</b>		
<i>SES Group</i>	<i>Average % Proficiency</i>	
	<i>Reading</i>	<i>Math</i>
High SES 4 Schools N=519	78%	72%
Medium SES 9 Schools N=1,184	60%	53%
Low SES 6 Schools N=535	43%	36%

### **Limitations of Student Grouping by SES**

Limitations in characterizing students by SES include the problem of skewed data from ecological fallacy. Under this fallacy, relationships observed in aggregated groups such as census data and National Free Food program are assumed to be true for individuals as well (Sirin, 2005). Also, the use of the National Free Food Program data may have errors in eligibility determination and/or families may opt not to participate due to uncertain citizenship status or to social stigma as students grow older. These errors may underreport the percent of families living in poverty. Despite these limitations, this data was used because of the large number of families (67%) who

participated in this program in this district. Moreover, participation in a Federal food program by students at any point during their schooling was used in this study as a static marker for income group categorization, in an effort to account for reduced participation in the program during the middle or high school years.

Using census tract data to assess an averaged neighborhood SES was also problematic because families with diverse SES could live in the same neighborhood. Additionally, the census tract information takes all citizens into account and not just the families with students who attended school in this district. Census tract data could potentially skew average family income upward as it included families without children/grown children or families with children who chose to send their children to private or charter schools. Census tract data, therefore, can only provide a distal indicator for family SES. In sum, these data points when taken together, infer relative family SES, and are estimates. However, this process is nonetheless cost effective and can provide any school district a comparative method to assess the impact of SES ranges on student academic performance. Also, this data is readily available and not dependent upon exhaustive surveying of families about individual characteristics.

Using SES as the primary organizing variable is another limitation in this study. Additional research is needed to understand the impact of culture and ethnicity, in addition to SES, on student performance with a multi-method design. For example, at the national level, the achievement gap among Hispanics is smaller when compared to Whites than the Black-White achievement gap (Bali & Alvarez, 2004). In the

Southwest, students with different ethnic groups, cultural background and SES co-exist in public school classrooms and those effects should be accounted for.

## CHAPTER 4: METHODOLOGY

Support was received both by the University of Arizona and the school district for this research. The IRB (Institutional Review Board) application was successfully approved by the University of Arizona's Human Subjects Protection Program. Subsequently, the proposal called, *Request to Conduct Research* was also approved by the district's Research and Accountability (A&R) Unit. The 50 teachers selected for participation in the in-depth interviews were identified by A&R using specific criteria delineated by this study. Additionally, the one time, on-line confidential teacher survey was administered internally to 156 teachers through the district's A&R unit. Results were provided to this researcher with all personal identifiers removed. Finally, a cohort of longitudinal student data was provided by A&R to this researcher with all personal identifiers of students including name or matriculation number removed. Students were assigned random identification numbers to link data sets together over time.

### **A sequential mixed-methods approach**

A sequential mixed-method approach was used to address the research questions because the objective, scope and logic of inquiry were consistent for both qualitative and quantitative methods. Additionally, this approach can elaborate on the interpretation and is the most appropriate approach in discovering the best answer (Tashakkori & Teddlie, 1998). A sequential mixed-method approach is where the researcher expands on the results of research from one method with another method. In this study, for example, qualitative research was initiated for exploratory purposes among teachers.

Subsequently, a quantitative research was conducted from a larger sample of student achievement data. A mixed-method approach is, therefore, more than simply using qualitative and quantitative data in one study. It must also include the interpretation of findings from both approaches in tandem. The overall strength of a study is greater and the interpretation is richer than either approach could provide in isolation (Creswell, 2005, 2009; Tashakkori & Teddlie, 1998). According to Johnson and Onwuegbuzie (2004), this approach includes “the use of induction (or discovery of patterns), deduction (testing of theories and hypotheses), and abduction (uncovering and relying on the best of a set of explanations for understanding one’s results)” (p. 17). Dominant characteristics are:

- Induction, exploration, and hypothesis development are included in qualitative research. With its foundations in anthropology, ethnography is holistic and seeks the interrelationships in human behavior relativistically and comparatively. The researcher serves as the principal ‘instrument’ of data collection and data analysis (Fetterman, 1989). This approach “maintains that human events must be viewed in the larger contexts in which they naturally occur, and that much of the meaning people attribute to their lives is specific to their socio-cultural surrounding” (Zaharlick, 1992, p. 117).
- Deduction, hypothesis testing, and explanation are included in quantitative research. This approach is both confirmatory and predictive and stems from the fields of psychology and economics. The primary data collection is standardized.

Analysis is conducted through statistical, mathematical or computational techniques (Johnson & Onweugbuzie, 2004).

Benefits to this type of approach include feasibility in implementation for a single researcher and the ability to elaborate on results with rich detail or what anthropologist Clifford Geertz (1973) called, 'thick description'. The weaknesses of this approach include time intensity of analyzing text and numeric data, multiple resources that are required for data collection and analysis, and the need for versatile skills in interpretation (Ivankova, 2002). Three basic decisions are needed when designing a mixed methods study: priority, implementation, and integration (Creswell, Plano Clark, Guttman, & Hanson, 2003). Priority refers to which method, either quantitative or qualitative, receives a greater emphasis in the research. Implementation refers to the organizational placement of the research in terms of sequencing the data collection and analysis: e.g. following one another, in parallel, or concurrently. Integration refers to the mixing or connecting of quantitative and qualitative data (Creswell, 2009; Creswell et al., 2003). Please see Table 5 for a model of this sequential mixed-methods process.

<b>Table 5. A sequential mixed-methods model for data analysis</b>	
<i>Method</i>	<i>Procedure</i>
<b>Qualitative</b> 	<p><b>Data Selection:</b> purposefully selecting teachers for participation with maximal variation sampling</p> <p><b>Data Collection:</b> In-depth interviews with 15 teachers and written survey responses from 116 teachers across 5 hardship schools</p> <p><b>Data Analysis:</b> Coding and thematic analysis within and across schools environments using grounded theory; linkages to literature</p>
<b>Quantitative</b> 	<p><b>Data Selection and Collection:</b> longitudinal standardized AIMS scores for 2,238 students (Graduating Class of 2012) in reading and math, grades 5 through 10</p> <p><b>Data Analysis:</b> Frequencies, correlation, and ANOVA with SPSS software as well as multi-level modeling with HLM software to provide descriptive and analytic statistics of the widening or narrowing of the academic gap over time between high and low income schools</p>
<b>Mixed-Methods Analysis and Integration</b>	<ul style="list-style-type: none"> <li>• Explanation of quantitative findings</li> <li>• Interpretation of qualitative findings</li> <li>• Triangulation of data (convergence, differences, or some combination of results) in using teacher narratives as explanatory model for student academic trends over time</li> <li>• Compare and contrast data sets using a holistic approach in analysis</li> </ul>

Table 5 demonstrates how the sequential explanatory mixed methods design was used to connect the qualitative and quantitative data in the findings. The first phase was conducted through a qualitative analysis of the face-to-face, semi-structured interviews

with teachers to help explain the culture and climate of hardship middle schools. Included in this phase was the triangulation of data from the confidential on-line responses, in a Likert format, from the larger teaching community at the five schools to the ethnographic findings for validation of dominant themes. The next phase provided a quantitative analysis of longitudinal student achievement data in reading and math from grades 5 – 10 of the high school graduation cohort of 2012. Finally, interpretation and analysis of the quantitative student data relied heavily upon the qualitative teacher data results. This study emphasized the teacher's narratives as the explanatory model for changes in student achievement over time. The strengths and weaknesses of a mixed methods approach have been reviewed extensively in the research literature (Creswell, 2009; Tashakkori & Teddlie, 1998, 2003).

### **Qualitative Methods**

An ethnographic paradigm, using grounded theory, structured the methodology of this research. Ethnographic research is a “dynamic, interactive-reactive approach...[through the] collection and analysis of descriptive socio-cultural data from a single social group, society, or several closely related societies” (Zaharlick, 1992, p.118, 120). Grounded theory is a strategy to elicit a process or interaction that is grounded in the world view of the selected participants (Creswell, 2009). It uses the following procedures:

- Creating categories of information (coding) and prioritizing categories according to research question(s) and
- Explicating a narrative from the inter-relationships from the categories

The objective of the qualitative research is to assess the level of cultural competency and self efficacy among targeted teachers. Semi-structured, open-ended interviews were conducted with 15 middle school teachers who taught in five low-income, high minority schools for five years or more. A series of open-ended questions were posed and teachers were asked to respond candidly and thoroughly. Initially, questions were posed to ascertain how teachers interpreted their reasons for persisting in a ‘hardship’ teaching position. Teachers were asked to describe the school working conditions and the impact it has had on student learning. Finally, informants were asked to make recommendations about improving the overall school working environment to help students become more academically successful.

Questions routes were developed from a variety of sources including Bandura’s Teacher self-efficacy scale, teacher effectiveness surveys, and feedback from middle school principals and administrators. Additionally, 10 school experts including school coaches, teachers and district leaders who worked in low performing schools reviewed and revised the questioning protocol. These experts also served as gatekeepers to schools and teachers. The face-to-face interview with each teacher lasted about one to one and a half hours. See Appendix D to review the face-to-face interview questions. The nonrandom representative sample of 15 teachers had been purposively chosen. Limited funding and a fixed time frame in which to conduct the interviews confined sample size. Fifty teachers met the criteria that:

- They worked at a one of the five selected middle school for five years or more
- Their school served a low-income, high minority population

- Their school experienced frequent administrative turnover
- Their school is at risk for academic failure, falling under the sanctions established by the No Child Left Behind (NCLB) legislation.

Of these teachers, 15 or 30% responded to the invitation for participation. Not surprisingly, the teachers who were willing to be interviewed were experienced, comfortable in their status within the school, and regarded their own teaching skills as high. According to these informants, the primary reason other teachers did not respond to the invitation to be interviewed was due to the added work load and pressure to perform in a ‘failing school’ which did not leave much extra time. Also, some informants suggested that teachers would rather stay ‘under the radar’ than to express opinions that they feared could potentially be associated with them. The professional environment was not considered to be safe in this district currently with budget cuts, proposed teacher lay-offs, and potential school reorganization from federal and state sanctions.

To protect the confidentiality of subjects, all interviews were coded. No names appear anywhere on interview transcripts or in any ensuing research documents. Participants were free to refuse to answer any question, at any time, during the interview. Participants could terminate any interview spontaneously for whatever reason, without repercussions. The open-ended interview questions were pre-tested among the gatekeepers before being administered to teachers involved in this project.

Additionally, a confidential, on-line school climate survey was made available to all teachers in the five low achieving middle schools. The purpose of the on-line survey

was to describe the school working conditions at each school. The results of this data were triangulated with the individual interviews to assess commonalities and trends in the data. See Appendix E to review the on-line survey questions. This survey took about 10 minutes to complete and submit. A total of 156 teachers were invited across the 5 schools to participate of which 74% or 116 teachers completed the survey.

A qualitative approach includes a standardized data gathering methodology that provides detailed descriptions of the context of a social problem. As the data collection is a product of the collaboration between the investigator and the teacher, the result is an inter-subjective (rather than subjective or objective) dialogue. These dialogues are intended to capture the multiple perspectives of teachers. The analysis process, therefore, distills these dialogues into themes and then integrates the commonalities that surface from one interview to the next. The qualitative approach is invested in depicting process, rather than outcome, and in developing a holistic description of the relationship of the individual to the environment (Fetterman, 1989). The process gathers information in the form of individual narratives and dialogues from targeted teachers, interprets and describes the dominant behavioral patterns found in the research, and links the findings to the larger sample from the on-line survey and through a review of current literature.

Each school projects a social climate that is reinforced through school practices. This research untangled the interrelationships between the overall school climate and teachers' own academic beliefs, achievement behavior, and school-related affect.

## Quantitative Methods

The intent of the quantitative research is to examine if the achievement gap widens or narrows from 5<sup>th</sup> to 10<sup>th</sup> grade among different SES groups (low, medium and high) among a cohort of 2,318 students who made up 56% of the graduating class of 2012. To be included in this cohort, all students needed to have attended one the district's schools and have a valid AIMS test score in reading and math for each of the following grades: 5, 6, 7, 8, and 10. A five-time point longitudinal design was used for math and reading achievement in a hierarchical linear model (HLM) procedure. HLM was chosen because the hierarchical data structure is capable of highlighting specific contextual variables in students and schools that impact the direction of the slope. This approach can also be used to model longitudinal change in academic growth where students might be assumed to show linear improvement. HLM is particularly useful in school evaluations because it can account for the interaction of processes at the higher level (school) that can impact the processes at the lower level (student) over time (Luke, 2004).

The dependent variables were math and reading achievement. The Arizona Instrument to Measure Standards (AIMS) was the standardized instrument to measure student proficiency. The AIMS calculated a gross score and a scaled score each year for every student, both of which were used in this analysis. The gross score was the number of correct answers per student. The AIMS reading test has been relatively unchanged in content and cut scores since 2005. In math, the AIMS test content was revised in 2008 to align more closely to Arizona's new math standards which increased its rigor. The

AIMS scaled scores in reading and math ranged from 200 in 3<sup>rd</sup> grade to 900 in 10<sup>th</sup> grade and were standardized for this research so that the mean score for 5<sup>th</sup> grade was 100, 6<sup>th</sup> grade was 200, 7<sup>th</sup> grade was 300, 8<sup>th</sup> grade was 400 and 10<sup>th</sup> grade was 500 with a standard deviation of 15. The conventional alpha value level for behavioral science research of  $p < .05$  was allotted to this research to determine statistical significance.

A three-level HLM was used: five-time point longitudinal design for math and reading achievement made up level 1 as a repeated measure (standardized scores over time from grades 5 to 10); then, nested within the student to make up level 2 with associated demographic variables such as SES, and other variables including English Language Learner status, Special Education status, and ethnicity; and lastly, nested within the school (N=19) to make up level 3. Additionally, other statistical methods were used in addition to HLM such as Pearson's  $r$  correlation, one-way ANOVA (analysis of variance) and a comparison of means. These methods were implemented to assess if the analysis trends were similar across various statistical processes.

## **CHAPTER 5: QUALITATIVE FINDINGS**

The summary of the qualitative findings has been divided into three sections: School working conditions, school leadership and teacher self efficacy. These sections highlight dominant themes that teachers raised during the course of the interview. The term, ‘informants’ refers to the 15 teachers who participated in the in-depth, face-to-face interviews. Aggregated responses from the confidential, on-line survey from the majority of the teachers who taught at the same schools as informants will also be included in the findings.

### **School Working Conditions**

Informants were asked to describe what was different about working in a hardship school versus a higher income school. In order of frequency, informants revealed the following characteristics to describe the conditions typical of hardship schools such as:

- Expectations of students are lowered because poverty is overwhelming, immediate, and results in limited experiences for students, which slows the pace of learning
- Parent involvement is minimal
- Value of education and the desire to go to college is low
- Discipline policies are inconsistent
- Student mobility is high
- Teacher and administrative turnover is high

- Lack of class norms or behavioral skills are evident in students

These conditions were evident in all of the five hardship schools in varying degrees. They challenged teachers to fulfill their mission of adequately preparing students for the next grade.

### **Low parent involvement**

Here if you have a problem child, you call home to tell the parent, "this is what happened today. Can you talk to your child?" You explain what the next step will be if it happens again. It gets to a point where you can't find the parent anymore. We call the number, the number is disconnected. You call their work, they no longer work there. Parents have so many other things to worry about. Then, you start doing referrals and the kid is more out of the classroom [than in the classroom] because of referrals. The unacceptable behavior in the classroom is not being controlled by anyone other than the child.

Parents have a powerful influence on the type of educational experience their child will face. Jacobs & Harvey's (2005) research illustrated that parents from low-income and single parent homes have lower academic expectations of their children and feel that a successful school experience includes enrichment and character building more than core academic activities. Additionally, they do not monitor school performance or social activities of their children as much as parents do from more affluent homes. Lack of parent involvement was integral to the prevailing school culture as the majority of teachers (80%) from the on-line survey agreed that parent support was low. Concordant with Jacobs and Harvey's findings, informants felt that parents were generally satisfied with the schooling experience as long as their child(ren) were not causing trouble. One

informant described how low income parents had different sets of priorities about what school success meant than higher income parents. She said,

[Higher income] parents are concerned about their kids doing the best they can as opposed to [our parents who] are concerned about putting food on the table. "Is my child safe?" is their first issue and not, "Is my child succeeding in school?" They work maybe one, two, three jobs and they are not at home. Their primary worry is, "As long as my child is not being arrested, that they are getting fed and that they are clothed [they are doing alright]". There is a difference when you have a family that is more well-off because they can say, "You need to improve for yourself". They can be more involved because they have less worries on the outside. It is a different set of problems.

The deleterious effects of poverty was described as woven into the community fabric such as uncertain legal status or other legal issues, health problems, addiction, minimal adult supervision, and safety concerns. These conditions frequently spill over into the classroom. Informants felt compelled to adjust their teaching style and expectations to deal with the complex lives of their students. For example, homework was not assigned because it would not get completed on a regular basis. One informant reflected on how educational expectations become modified at low-income schools so that students can show success and thus be motivated to grow academically, albeit at a slower pace. She said,

I think the expectations are different. In hardship schools, a teacher only has control on what goes on in their class period. In a [higher income] school like my daughter's, the expectation was that she would do homework every night and if she didn't, it was like really, really serious. That is not true here.

And another,

Students start with limited vocabulary and limited experiences. I mean simple things - they can talk about their religion, but they can't talk about what their religious beliefs are because they don't necessarily go to church. You talk to them about current events and it's like, "I was taking care of my little sister". I can't expect a lot of homework to get done because there's no monitoring. We have to do all the work in class which may prevent me from being on the level with other middle schools where I could say, "read the packet from your book". Many of the kids don't have computers at home, so I can't give those types of assignments anyway.

In summary, informants described a low-income community where parents typically work very hard just to get by. In order to meet basic needs, children must help out by supervising younger sibling or engage in other household duties. Because the net effect of poverty is the inability to plan ahead, students and their families become acclimated to an environment of crisis control and meeting the most immediate need. Homework completion, involvement in organized sports or the arts may not be feasible for many students because of their precarious financial situation.

### **Whose expectations are to attend college?**

I think they still have the same likes: they like the same music, they have the same dreams, they have the same ideas, the sense of self where they want to be better than where they're at. I do see the drive in the kids here, same as I saw it anywhere else...these kids try harder to get what they want because it takes a lot more effort for them to get what they want versus other parts of the community where [kids] are maybe handed what they receive. They didn't earn it as much. Some of these kids really have to fight and the parents have to work twice as hard to provide for what the kids want because they have the same wants and needs. But because there's that lack of a strong educational background, it seems to me that only a small percentage of our kids that get the idea that college is an option.

McNamee and Miller (2004) argued in *The Meritocracy Myth* that a gap has always existed between how Americans believe the system works and how the system actually does work. According to the ‘American Dream’ ideology, an individual will get out of the system what s/he puts into it. Success is therefore a reflection of individual merit including hard work, innate abilities, the right attitude, high moral character, and integrity. In this view, success is equated with wealth and failure with poverty. One informant described the complex family situations associated with the poverty where meeting basic needs is a necessary and immediate priority. Additionally, the financial burden of going to college is an enormous barrier vis-a-vis getting a job right out of high school and helping to support their family. She commented,

Certain kids know that will be hard for them [to go to college] but they will try it anyway. Others are on the line and would like to [go to college] but they don't know if they have it in them to try their hardest so that they can get those scholarships...They are so overwhelmed with their family lives that other barriers get in the way. I mean, you have no food, or getting kicked out, or getting deported, or your parents going to jail. There are so many different factors that our kids have to deal with.

The impact of non-merit features such as inheritance, social, educational and cultural advantages, the shifting face of job opportunities, the decline of self-employment, and discrimination have all worked against the principals of meritocracy (McNamee and Miller, 2004). Nowhere is this division more apparent than in the lower economic strata where the possibility of moving up into the middle class is becoming increasingly difficult to attain. One informant observed,

The way we treat kids is we act as if everyone is going to...the University of Arizona and get the PhD's and that is just not the case...I think it would be far more beneficial for kids to be able to say, "I want to work as an auto mechanic or airline mechanic"...I have seen the middle class disappear. The kids that can afford to go to college get the higher education. The kids that can't [afford college] will have this huge divide between them...I go to [educational] seminars and people say, "have the kids bring out their smart phones and do surveys with them". But when I send home my syllabuses, I ask, "Who has access to the Internet?" and I have maybe 25% [of families who have Internet access]. There is [already] a big divide and I don't think anyone is addressing it.

The belief in the 'American Dream' appears to have further segregated the poor from the middle/upper classes by implicitly blaming them for their situation. To compensate for impoverished students' reduced array of realistic college and career choices, academic expectations among informants were moderated to be accepting of blue collar or trade careers as 'good enough'. However, the meritocratic ideal continues to be so pervasive in education that teachers are fiercely divided on what the higher educational message should be to students. One informant explained,

Everybody always comes here and says, "You could be a doctor!" Well, it's true, they could be a doctor, but the likelihood of that happening with their family infrastructure is pretty darn low. It's a steep, steep climb. I think a more realistic objective would be to say, "Your dad works in construction; you could own a construction company". That seems like something that would build on their family strength and yet move them up the ladder a couple of notches and give them something that their parents can get behind and support and it makes sense. It is something they could understand. It would use the skills that they have from their family and it would make college [meaningful], "okay, we need some business skills here and some accounting and some tax knowledge". ..Parents loved it. [However], teachers were very resistant and a lot of them were indignant. "You're trying to force these people into blue collar jobs!" Yet, a good plumber or electrician can have a very comfortable living.

Results from the on-line survey revealed that 85% of teachers agreed that students in poverty should be held to the same academic proficiency criteria as students from more wealthy households. This sentiment differed from informant statements. It is unclear if this difference was a result of different data collection methods or if teachers were really divided as to what is appropriate to expect from students who live in poverty. The position that teachers struggled with was: Is it culturally competent not to expect students to attend college by recognizing the significant financial and culture challenges that face them with limited support at home? Or, is it covertly prejudiced to diminish higher education expectations for students living in poverty by tacitly reinforcing their perceived lower capacity to achieve a higher social status?

### **Time commitment**

I think everyone of us [in this hardship school] recognizes that we're all, in a way, an exceptional education teacher. Every single child here, even our highest performing kids, have issues. So in this community, you can't treat a regular education class like a regular education class because we don't have regular issues. You have exceptional, extraneous circumstances that you have to attend to right then and there before you even try and get to the learning...Somebody could come here from another part of the city, and do just as well - as long as they're willing to make that extra effort...The reason [teachers] want to stay is because they get rewarded for that extra effort...And I think those that leave, leave because they didn't get the reward, because they didn't put forth the effort.

Difficult working conditions all share one commonality: they translate directly into a greater workload for teachers. According to research by the Alliance for Excellent Education (2008), students who are consistently exposed to effective teachers can

overcome obstacles such as a lack of school readiness, close the achievement gap, and perform at grade level. However, what this research doesn't specify is how 'effectiveness' is translated into practice. To be successful in a hardship school, informants expressed the necessity to work long hours to be responsive to the array of student needs. Those hours were frequently spent helping individual students, heading up clubs and other extra-curricular activities, designing lessons that differentiated instruction, analyzing student performance data, attending profession development and other trainings mandated by federal school improvement status, advocating for supplies and resources, making connections with parents and doing home visits, etc. As one informant reflected,

*I am here a long day, generally ten to eleven hours a day. While I am here I am with the students. I am theirs; they are my family. I've told them that. I have no family at home. You have to make an emotional connection with these kids. If you don't, they're just another number. I like being with the kids. I like what they do.*

Because the time that is needed to be effective in these schools can total 50 or more hours a week, it might be unmanageable for teachers with children at home to make that type of time commitment. Although not explicitly defined as one of the difficult working conditions in the literature, the huge time commitment required to show academic success may be a primary motive for some teachers to transfer to another school. One informant described,

*People who have families, it is hard to teach [in hardship schools]. You can't be thinking about one or the other. Some teachers do have families and they are not able to commit to the kids like I have been able to....[In*

addition to overseeing] my after school activities, I still have a fourteen-mile one way trip for me each day to get home from school.

Of the 15 teachers who agreed to be interviewed, only 13% still had children at home. About half of informants (54%) had children who were grown and out of the house and the remaining third (33%) never raised children. The overwhelming majority of informants, therefore, did not have multiple competing demands from their own children and were able to spend more time at school. In summary, to be effective in hardship schools, a greater time commitment is required of teachers than for those in middle income schools which may, in part, account for the high teacher turnover.

### **The impact of turnover**

*We have a high administrative turnover rate here; maybe four principals in the last five or six years. I think a lot of teachers deal with [the turnover in leadership] by leaving. We have had so many teachers leave over the course of nine years, it is almost like a new school every year.*

At these schools, teacher turnover is part of the school culture with 47% of all teachers across schools reporting on the on-line survey that they have worked at their school for three years or less. Educational research has repeatedly reported that teachers move in predictable patterns within a school district. Teachers will search for the most satisfactory fit so that the school working conditions are compatible to his/her own expectations and needs. These patterns show that more effective teachers generally want to leave hardship schools for positions that do not have such difficult working conditions, which leaves inexperienced and/or ineffective teachers to assume the 'hard to fill' slots (Becker, 1952; Johnson & Birkeland, 2003). High turnover rates of

teachers negatively impacts the school working climate and is an ongoing challenge for remaining teachers because of the lack of continuity when working in teacher teams.

When asked on the on-line survey, if they saw themselves transferring to a different school within a year or two, just over a third of teachers (38%) responded affirmatively.

This ongoing turnover creates instability in the teachers who remain. As one informant commented,

We have some problems keeping teachers in addition to the turnover of the administration. We have a 30% - 40% turnover in teachers. I have probably had eight different language arts teachers on my team in the five years that I have been here.

The placement of teachers in hardship schools generally fell into two camps: the ones who chose to work there and the ones who got placed there by an administrator to fill a vacant slot. Ineffective teachers with tenure are often cycled through the lower performing schools in attempts by principals to get rid of them without having to fire them, in what is euphemistically called, 'the dance of the lemons' (The Teaching Commission, 2004). Given the option of a substitute or an ineffective teacher, administrators, to date, in this district still consider ineffective teachers to be a marginally better choice for students because of their higher content area knowledge.

Research by Zambo & Zambo (2008) revealed that teachers at low performing schools tended to work more frequently as independent units rather than collaboratively with their peers, the common practice in more effective schools. The results of this study differed from trends in the educational literature because teacher collaboration was evident in each of the five hardship schools, but was implemented in varying degrees.

Nonetheless, about 60% of teachers across schools reported in the on-line survey that they were satisfied with their professional learning communities. In spite of the general satisfaction in peer collaboration, informants indicated that collaboration was often preferred with a select group of other seasoned teachers because the turnover of newly hired teachers can be exhausting and ultimately non-productive. One informant said,

*I have created relationships [with my team] and I absolutely trust them. Those teachers are the ones that have been around here a while. Teachers that come in here that are new, it's hard. We are open to them, but we are guarded. You want to see if they are going to stick around. You want to see if the district flushed and they just ended up here.*

The lack of openness of the staff to new teachers was experienced by one informant when she first arrived at her new school. She felt she needed to prove that she was going to stick around for a while before the faculty would open up to her. She remembered,

*I don't want to sound negative. When I first started here, it was a little challenging, kind of like the staff that had been here for a while...were not warm and friendly. I felt confused. You want to make friends and be able to collaborate. [I felt that] there was tension in the air...as the year went on, it went much better.*

In summary, the flow of teachers and administrators through these schools creates a culture where change is ongoing, professional relationships are transient, and teachers who stay become the institutional memories of the school. The seasoned teachers tended to collaborate with one another more frequently and depended upon the continuity of those relationships to temper the disruption that accompanied the constant turnover in the schools.

### **No Child Left Behind policies marginalize hardship schools**

There's an old joke about the army going through the desert and the general tells the troops, "I've got good news and I've got bad news. The good news is that you're all going to get new underwear. The bad news is that you will change with him and you will change with him" on down the line. [School improvement is the same situation]. From what I've seen in the [hardship] schools around here, when they clean out one, they basically move the teachers to the other schools. It's just the same old, same old. It's not like the teachers go away.

Loeb's et al. longitudinal research (2010) indicated that poor school conditions were a stronger mediator for principal and teacher turnover than student characteristics. The pressure from state and federal accountability systems and associated sanctions is another highly undesirable working condition. The threat of losing their job, regardless of individual performance, was a common concern among informants because of their underperforming status. As one remarked,

I am in a grade that has been failing because of one particular area: math. Our reading scores have improved, our climate is better and yet this year we may be subject to the restructuring or the turnaround model. It has been over our heads and beaten down our throats that "you're going to be without a job". I can pull my AIMS scores out and show you that the kids I was with improved in reading two years in a row. [I could lose my job] because of something outside of my control.

Working in a school under school improvement sanctions not only promotes feelings of insecurity about job status, but also can negatively impact a teacher's reputation. The very sanctions that are designed to improve schools perpetuate the low status of hardship schools and the teachers who work there by negative public proclamations with the 'failing' label. One informant lamented,

People judge you if [you come from a hardship school]. I've done some interviewing and one said, "Well, you have always worked with low socio-economic kids. Our kids are middle to upper-middle class, college-bound kids. How are you going to relate to them?" I am like, "What are you talking about?"

Conversely, the No Child Left Behind assessment uses results from averaged performance levels on annual standardized tests. This approach rewards wealthier schools with higher student achievement and reprimands poorer schools with lower student achievement. Research by Hanushek and Rivkin (2007) assessed teacher mobility in Texas and revealed that teachers who stayed in urban schools were not lower in quality as assessed by average student test score gains than those who left for other schools. In other words, if value-added calculations were included in school assessments rather than the absolute performance scores, some low income schools may not be considered 'failing' after all. The federal accountability system therefore has a tenacious negativity that falls hardest on the shoulders of high-poverty schools.

Regardless of the stigmatizing proficiency rating from No Child Left Behind, 79% of teachers across schools reported on the on-line survey that they felt that students were getting a high-quality education to be productive in society. However, they also recognized that student achievement was lagging as only 30% agreed that the majority of students in their school would begin next year with grade level proficiency in core subjects. Indeed, when the 2012 cohort of students graduated from 8<sup>th</sup> grade in 2008, the low income students showed about a 35% mastery gap in both reading and math when compared to high income students (TUSDstats, 2012). To improve student

achievement, teachers were not keen on district and state intervention as just 22% agreed that outside intervention was needed to raise student proficiency.

In summary, multiple adverse working conditions compromise teachers' ability to be effective in hardship schools because of the distractions in the larger school culture. Federal legislation and ensuing sanctions have accelerated the principal turnover, negatively labeled hardship schools including faculty and students as 'failures', and increased the stress of teachers who work there with threats to their job security. Positive academic improvement such as incremental growth over time, the hallmark of successful education, is simply not recognized by this system.

### **Principal Leadership in Hardship Schools**

When informants were asked what could be done to strengthen leadership at the school, the most frequent response was that continuity was needed at the administrative level. The revolving door of principals left informants feeling uncertain about the direction of the school. They also felt that five years was needed under the same leadership before change should be assessed. A five year window would allow sufficient time for interventions to become embedded into school culture. In order of frequency, the changes informants wanted to see a principal endorse most were:

- Uniform discipline policies including positive rewards for students
- Increased accountability and evaluations of teachers to improve instruction
- Greater parent and community involvement

- Higher academic expectations by faculty
- More enrichment opportunities for students
- Fewer vision changes that involve new curricula etc.
- More professional development/modeling of effective instructional practices

This section reviews what teachers wanted in a principal in a hardship school.

### **Strong principal leadership**

*There has been a lack of leadership at the principal level. You get a person in one year, you buy into their plan and then they are gone. Then, you get somebody else in and they totally undercut any kind of plan or vision that you've worked on with consistency. They scrap it. We also have some discipline issues. When the teacher is blamed continuously and the student accountability is lessened, that can be frustrating for the teacher.*

Effective principals can positively affect student achievement by developing capacity in the faculty, creating a vision for the schools to unite teachers, showing strong organization at the school and administrative levels, and allocating resources (Loeb et al., 2010). Effective principals also stay at a school long enough to develop and implement their vision. Unfortunately, at these hardship schools, turnover at the administrative level is so frequent that constant change is the norm. Each new administrator brings a different way of running the school, in part, to separate themselves from their predecessors and, in part, because they were brought as 'change agents' for an underperforming school. As one informant described,

*The biggest problem that we have is getting hit with change, change, change. When we have been able to stick with something over several years, that's have made a huge difference in our test scores and our learning community. I don't think change is good for the kids, the teacher*

and our test scores; even though whatever's coming in is supposed to be better.

Like teachers, principals in educational research expressed a preference for schools that are safe, equipped with adequate resources, with minimal teacher turnover that is located closer to their home. Loeb's et al. (2010) research indicated that schools that serve students at risk are more likely to have first time principals or have an interim principal. Effective principals gain initial experience at low-income schools with low achieving students and then transfer to schools that serve fewer at-risk students.

Because four of the five hardship schools were in corrective action under the No Child Left Behind (NCLB) accountability sanctions, turnaround principals had been recently hired to support the schools. In this district, to qualify as a turnaround principal, one needed to have experience as part of an administrative team that demonstrated prior academic success in a low-income, high-minority school. Table 6 provides a breakdown of the principal turnover over the last 5 years at each school:

<b>Table 6. Principal turnover at the 5 hardship middle schools 2006-2011</b>		
<i>School</i>	<i>Total principals in the last 5 years</i>	<i>Years as current principal</i>
1	3	1
2	3	2
3	3	1
4	2	3
5	3	1

As Table 6 illustrates, not one of the 5 hardship schools has had the same principal for more than three years. This constant turnover in leadership encouraged teachers to continue with their own teaching style, for better or worse. According to informants, this void permitted greater freedom for effective teachers to experiment with curricular content. For less effective teachers, it provided fewer opportunities of becoming a target for a plan of instructional improvement. All informants, however, adapted a 'wait and see' approach to new principals and his or her fresh vision for increasing student achievement. One informant explained,

There is a lot of talk, but never any consistency. They keep coming up with magic pills that you take for six months and it's supposed to solve the problem. Then next year, it's another magic pill [to solve low student achievement]...so when the [new] plan is introduced that is *really* going to be the one that fixes it, you have a bunch of faculty who are dubious and ask, 'why is this [approach] any different?'

In summary, the changes in leadership impacted the entire school culture and increased the work load of effective teachers because they had to solve problems and advocate for resources without the support of the administration. According to informants, the two greatest barriers from inconsistent leadership were a lack of a sustained vision to bring the faculty together as well as a lax discipline policy which negatively impacted teacher's ability to teach all their students effectively.

### **Discipline needs**

With the turnarounds in administration, one of the difficulties we get into is that each administrator has a different thought about how to run the school's discipline. Teachers would like some standardized policy that we can understand what we're supposed to do. We started to move in that direction, but now we're losing the principal again...If there is not a

uniform, consistent reaction to [specific] behavior, the kids are always testing it and it increases classroom behavior problems.

Lax discipline procedures frustrated teachers because they felt abandoned by their principals. According to the on-line survey, more than half (56%) of teachers across schools were dissatisfied with discipline policies. They commented that a consistent policy must be reinforced throughout the school so that the message was clear to each student. Without that structure, they felt that not only was their authority undermined in the classroom, but that the students were given unintended power. For example, one informant protested,

*A cohesive discipline policy is needed where the consequences are real and they are effective. [For example], we are a uniform school. We are going to tuck them in; we are going to pull them up. We are going to follow these directions. When you send a kid to the office saying, "I've asked five times for this student to tuck in his shirt, pull up his pants", like you have asked us to do. Next thing, he is walking back in un-tucked, because there was no consequence from the administration. Yet, when you come in here to observe me, it's written down, 'five students un-tucked, two are chewing gum. You hold me accountable, but nothing's happening to them from the administration. I don't feel I've been supported.*

Neglect from the school administration on discipline ultimately affected classroom management. As a result, informants eventually resisted referring students to the office. The consequence of this system is that disruptive behavior by a select few must be tolerated by all in the classroom. These students compromised the expectations of the learning environment. One informant complained,

*I am really tired of not being treated as a professional by administration. When it comes to discipline, it just never fails, they take the word of the child over me. I do not give out a lot of referrals. I am not one of those*

teachers that says, 'they're chewing gum, get them out of here!' If we are not firm on discipline, what did we just tell that child? They can do it again and again. What does it tell teachers? Don't refer a kid.

In summary, informants felt that the way principals could support them most was to provide consistent and positive discipline to students. With the turnover in administration, discipline was the single most tangible deficit in the school culture.

### **Teacher Self Efficacy**

When asked what they thought was their biggest impact on students, informants responded that the positive relationships they developed with students was certainly the most important. Other actions that resulted in a positive impact on students, in order of frequency, were:

- Putting in added effort including long hours before and after school and extra-curricular activities
- Teaching in a culturally competent manner to gain respect from students and to build student academic confidence
- Impart useful knowledge and skills
- Providing a safe place that is consistent with good classroom management
- Using multiple teaching strategies to reach all students

This section reviews how teachers regarded their own role. The strategies listed above, that improved student learning, were instrumental in framing their rationale for staying at a hardship school.

### **What makes a good teacher?**

The demographics say that if you are average or above intelligence and you're exposed to education and your parents are reasonably educated; you can have some mediocre teachers and you are still going to college. You can blow it, but you don't have two strikes against you. Here the kids clearly need more than that. Not all of them. But I've had bright kids who really don't understand the educational path that they can go to college. They are very 'here and now'. Nobody in their family has gone to college. Who models that for them? For a lot of them, their idea of a great job is driving a truck. There is nothing wrong with driving a truck. But that is their ceiling.

Conventional wisdom has presumed that what students learn is primarily a result of the level of family income or parental education, and less a result from the impact of schools. But recent research has revealed that the impact of schools can be enormous on student performance and that the pivotal variable is good teaching (Haycock, 2001).

Informants echoed this finding and felt that teachers in hardship schools may be as important an influence on a student as their parents because of their consistency and availability. One informant stated,

The single most important thing is that teacher. The research says it is the teacher and the supportive environment at home. But here is what I have discovered: When you go hunting, who can you find every time? The teacher - because the parent might have to work three jobs [whereas] the teacher is accessible. You can always find the teacher.

Research has shown that in higher performing schools, teachers behave differently than teachers in schools with low student performance (Zambo & Zambo, 2008). In low performing schools, classes began late, teachers displayed uneven instructional skills, and the classrooms were constantly being interrupted. Interruptions

could be family initiated, such as tardies, or neighborhood initiated, such as criminal activity where school lock-downs are enforced in each classroom to promote student safety (Teddlé et al., 1989). In this study, informants who had worked in both a middle income school and a hardship school also noted this difference among some of their colleagues. However, they felt that the school was a community where all the players were accountable. For example, they felt that higher income students came to school better prepared about expectations of what appropriate school behavior was. Some students in hardship schools simply did not receive that instruction at home and it could take a teacher almost all year to establish classroom norms, which impeded upon instructional time. One informant explained,

These kids really don't understand what society expects of them to succeed. Even with classroom behavior and the concept of yelling across the room [as being an inappropriate behavior is not understood by students]. We have to teach those skills to a lot of kids: No, do not yell. We have to respect one another. To have a conversation, you have to take turns.

Other interruptions inherent in low income classrooms include the accommodations that teachers must make in an ever-changing set of students. This ongoing mobility is disruptive to the students transitioning in, as well as for the more stable students, and negatively affects classroom culture and academic expectations (Jacobs, 2007). Student expectations must be adjusted for students who move in and out of schools because they lose valuable instructional continuity. One informant reflected on the high value placed on students who stay the entire year. He said,

The number of kids that start the year and the ones that end are not the same kids all the time. They come in with low skills. Parent support is also very low. [There are multiple] qualifiers to low achievement. The kids that have good attendance and a modicum of family support, that is highly valued here.

Schools that serve large concentrations of low-income students must continually deal with complex needs that coexist with poverty such as the lack of clothing, food, housing, health care, and mental health issues. Schools frequently have inadequate resources to deal with these issues comprehensively (Murnane & Steele, 2007). For example, children and families living in poverty are four times more likely to have learning disabilities than middle income students (Apple & Zenk, 1996). One informant explained how challenging it is to teach when students are not properly identified or have inadequate interventions. She described,

We haven't figured out what to do with that 2% that just can't fit into a regular classroom...what do you do with a kid who rip wires? They shouldn't be in my classroom. We need more options for those kids to have alternative learning settings instead of suspension. I think our special education population is 20%. Maybe that is another difference between a school like this and a higher income school. I don't think they have as big a special education community...We have so many kids with so many economic struggles and parenting problems that it leads them to be placed in special education when they might not actually be in special education if they had more resources.

Informants also felt that teachers in hardship schools needed a variety of high level teaching skills to be effective with their hard-to-reach population including differentiation, project-based learning, and strong classroom management with clear behavioral expectations. One informant said,

What I observed in the [higher income] schools...was lecturing. No work was really done in class and then homework was given; which is a really traditional model, and does not work here. If I hadn't had the training for differentiated instruction...I'd be dead in the water here...You can be any teacher [in terms of skill level] and stand up and lecture, but you can't be any person in *this* school and expect to make things work...For example, I dumped out a puzzle in front of some students and everybody grabbed pieces and pulled it to them. "It's all about me, what I can get!" I had to teach them how to put the puzzle together by cooperating, by looking for pieces that other people had. So, eventually they left the pieces out on the table and started looking for matches. But at first, it was a survival mode thing. That's the way our kids are here.

In summary, this research concurs with Olson & Einwohner (2001) that teacher behavior and expectations are influenced by the larger school and community environment. Effective teachers in hardship schools have the double duty of indoctrinating students into middle class social and behavioral expectations, in addition to providing them with adequate content area knowledge, in a schooling environment with constant change. Effective teachers use multiple teaching skills to reach their population including differentiated teaching and in-class projects and spend long hours at school building relationships and supporting students.

### **Teacher cultural competency**

Even making the wrong reference here: 'where's your mom?' [can isolate you from the students]. Many students do not want to tell the whole class that their mom just got deported. Making one-on-one contact with that student as well as asking the team of teachers about the student's family is important. Also, non-Spanish speaking teachers struggle more if they fight it. It is easier to adapt and enrich themselves with the language than fight and be closed minded about it.

Informants strongly identified with the students and the surrounding community. Their sense of identification came from one of three sources: similar ethnic background including Latino culture and language; similar socio-economic background including poverty and the hardships associated with being an economic underclass; and/or cultural competency where curiosity and love of diversity is emphasized. This identification helped teachers relate to the students and make learning relevant to their surroundings. Of the informants who participated in the interviews, about 27% grew up immersed in Latino culture and speaking Spanish where finances were typically tight; 33% were non-Latinos who grew up in poverty; and 40% were non-Latinos, who did not grow up in poverty, but became fully engaged with the student population and community because of their interest in diversity. Informants felt that to be effective as a teacher in these schools, cultural competency was requisite. One informant reflected,

*I love to hear about their culture and their language. I ask them to come in and teach us something. Speak to us in your language. Teach us a new word every single day. Show us what you do. Oh, I love it. I want them to show off and to showcase what they know.*

In summary, informants identified strongly with the culture and traditions of the surrounding community. This cultural competency helped them relate to their student's world view, talk to them in a common language, and be effective as teachers. See Appendix F for a comprehensive definition of teacher effectiveness that includes cultural competency.

### **Why teach at a hardship school?**

My biggest impact has nothing to do with what I am teaching. My biggest impact is that they know somebody cares about them, cares enough to get in their face when they're wrong so they say, 'he backed up what he said every time that I've talked with him'. And I make them better readers. Kids can talk to me...and give me a hug; kids who I [used to be] scared of can do that. It is much greater than the sum of their reading scores that has ultimately kept me here.

All informants were deeply committed to their profession and expressed high self efficacy, not only about their own skills as a teacher, but also their positive impact on students. Throughout the interviews, informants voiced concern that these students were not getting sufficient positive adult role modeling and that a large part of their job was to provide a trusting and consistent relationship to their students. As one informant reflected,

In [my experience with higher income schools] there were certainly more helicopter parents. We don't have that here. [It's too bad] because I would really, really like to see more parental involvement here. The kids here don't have what other schools have - starting with the parents. Their level of interest in what happens to their kids, versus what is happening to them is lower. Parents who have money sometimes can stay home and take care of their [kid's] basic needs. Our kids don't have that. They take care of others' needs, like their little brothers and sisters because their parents aren't around. No one is taking care of their needs.

Even though these hardship schools experienced ongoing administrative and staff turnover, informants felt that the work they provided and the relationships they developed with the students was the single greatest motivator to return each year. On average, informants had about 17 years of experience. Reasons for choosing teaching were:

- Always wanted to be a teacher (33%)
- Did not like prior job and wanted to work in a field that gave back to the community (27%)
- Wanted a profession that was on the same schedule as own children (20%)
- Teaching provided a sense of mission to work with disadvantaged kids (20%)

Johnson & Birkeland's (2003) longitudinal study of teacher mobility and Nieto's (2003) reflective work among teachers revealed that some effective teachers chose to stay in hardship schools because of a strong commitment to the students and their families, a connection to the surrounding culture and language and/or a need to be challenged professionally. This research corresponds with Johnson & Birkeland and Nieto's findings as informants were quite clear that their reasons for staying had little to do with the shifting administration and everything to do with the significant impact they have on students. The on-line survey corroborated these findings as 95% agreed that the relationship with students was the most rewarding aspect of their job. Also, 81% of teachers agreed that they look forward to their job almost every day. Informants repeatedly expressed that their sense of purpose as a teacher felt more tangible in a hardship school because they could witness the growth in their students. One teacher explained,

*I see dedicated teachers who want to make a difference. It is more of a challenge [at hardship schools] and it makes you feel really good when you see a student that's coming from a hard life and they excel. Especially in high school, when they come back and tell you about their successes. That is the most wonderful experience I think any teacher could have.*

Informants also felt that if they extended themselves and put in the long hours, their impact would be significant. As these students may not have the family support, community culture or adult role modeling for high educational expectations that students from higher income schools have access to, teachers can fill the gap.

Informants felt that they must be more than instructional leaders; they needed to create a positive and nurturing relationship with students to keep them engaged in learning and to experience academic success. One teacher remarked,

Our kids just want to be accepted as to who they are and what their lives are like, listened to, ideas shared with just like every other middle school kid. In many ways, our kids are similar other kids at other school, but in many ways they are not the same... Our kids are extremely needy in terms of emotional needs and acceptance. Until they get that, they will not work. They will not open themselves up to learning...our kids won't automatically come in and sit down and be quiet. That has to be established. How to play a classroom game has to be established because our kids are used to loud, raucous, outdoor games. They are not necessarily used to inside, quieter games or how to react in the classroom versus outside a classroom. Teachers are just shocked at the work it takes to establish relationships with the kids. It is not just an automatic...you really have to work at it...you have to prove to them that you care, that you are going to stay and that you are worth their respect and attention. They don't automatically give the respect, you have got to earn it...Once you do, they'll do anything for you.

In terms of satisfaction with their job, 76% of teachers from the on-line survey and 93% of informants stated that they were not ready to leave education - even if they could retire immediately with a full benefits package. Indeed, on a scale from one to ten, informants were asked to rate their level of satisfaction with teaching. The average

score for informants was about an 8.5, which indicated a very high rate of satisfaction.

One informant noted,

*I feel good about what I do. It is the first time in my life [that my job has a purpose] which is probably why I stay here too. It's not just about the kids, but about how I am doing it as well.*

In summary, teachers chose to work at a hardship schools because the rewards were high and made the hard work worthwhile. They felt that their impact on students was significant and could temper the other, more negative messages students picked up from the surrounding community in terms of future aspirations. Informant's self efficacy was high because it was continually being reinforced by the positive influence and academic growth that they witnessed in their students.

## CHAPTER 6: QUANTITATIVE FINDINGS

This research assessed the trajectory of academic growth over time of students attending high, medium, or low SES schools. The AIMS reading test has a total of 54 questions and, on average, across grades, about 33 questions (or about 61%) correct indicate grade level mastery. The AIMS math test has a total of 67 questions and, on average, for grades 5-10, about 42 questions (or about 63%) correct indicate grade level mastery for grades 5-8. In high school, however, mastery is indicated by 49 questions (or about 73%) correct. Figures 3 and 4 compare the means in the reading and math gross scores by school group from 2005 to 2010. This repeated-measures ANOVA analysis must be read with caution because of the risk of ecological fallacy where the group data (or mean) is assumed to be representative of an individual's data (Sirin, 2005). The breakdown of the three schools grouping is:

- High SES group = 4 middle schools with 519 students
- Middle SES group = 9 schools with 1,184 students and
- Low SES group = 6 schools with 535 students

Figure 3 illustrates that the mean number of questions answered correctly remained at essentially the same proficiency level from 5<sup>th</sup> grade to 10<sup>th</sup> grade. In other words, how students performed on the AIMS reading test in 5<sup>th</sup> grade was predictive of how they performed in high school. Additionally, Figure 3 shows that the students in the high SES schools consistently and significantly outperformed the students in the low

SES schools by about 10 questions with each testing period over five years. The red dotted line on Figures 3 and 4 show the number of questions that is needed to be answered correctly for grade level proficiency. In reading, the low SES schools, on average, produced a mean score that was just below grade level proficiency until high school. Conversely, the middle and high SES schools produced a mean score that was higher than grade level proficiency. These data show that the majority of the students in the middle and high SES schools scored above grade level proficiency.

**Figure 3. Mean AIMS reading scores by grade from 2005-2010 for the 19 middle schools**

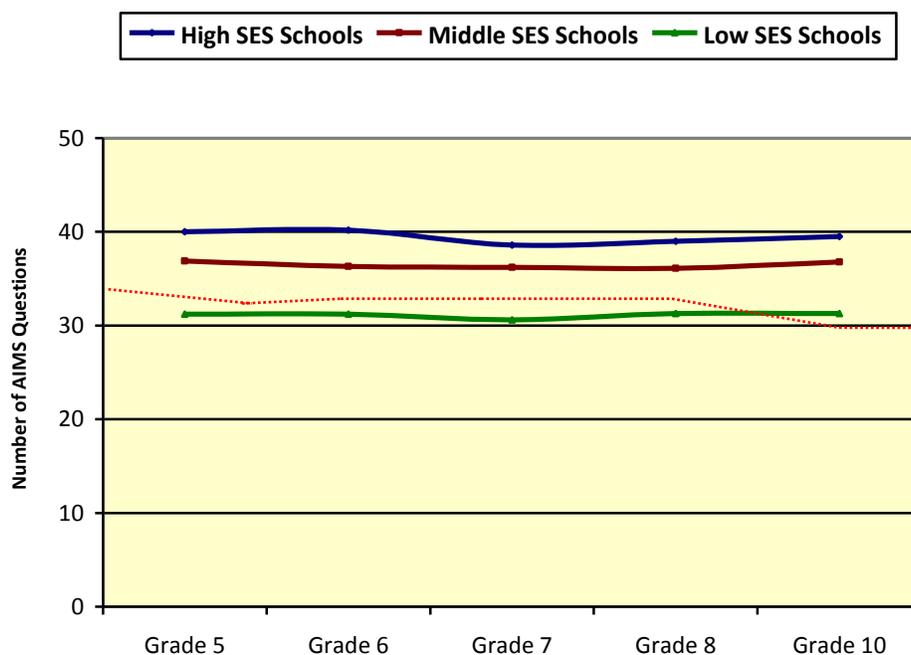
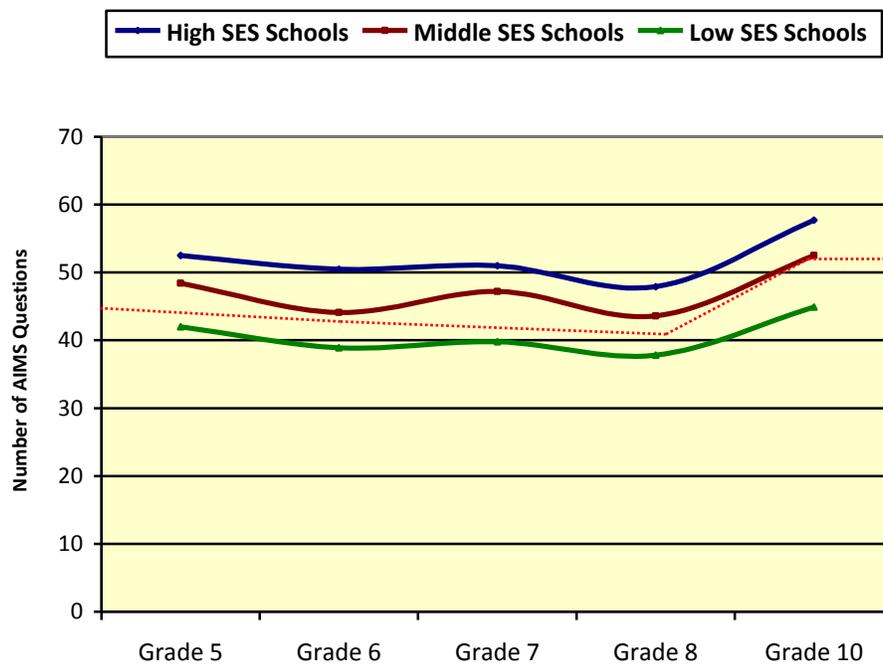


Figure 4 suggests a similar scenario in math as to what was revealed in reading proficiency. For the low and middle SES schools, on average, the students scored below

grade level proficiency in every grade. Similar to the reading breakdown in Figure 3, students from the high SES schools consistently and significantly outperformed the low SES schools in math, as shown in Figure 4. Finally, the proficiency means trajectory between the 3 SES school groups, over 6 years, remained essentially parallel.

**Figure 4. Mean AIMS math scores by grade from 2005-2010 for the 19 middle schools**



As might be expected from the repeated-measures ANOVA analysis displayed in Figures 3 and 4, academic achievement in 5<sup>th</sup> grade was predictive of high school performance. Using Pearson's  $r$ , 5<sup>th</sup> grade achievement overall was highly correlated to 10<sup>th</sup> grade achievement in math,  $r(2,238) = .76, p < .00$  and in reading,  $r(2,236) = .80, p < .00$  for this cohort. High SES students consistently performed at or above grade level

proficiency, middle SES students consistently performed at or just below grade level proficiency, and low SES students consistently performed below grade level proficiency over the course of 6 years. Please refer to Appendix G to review the reading and math correlation tables.

The repeated ANOVA analysis was conducted among the three SES school groups using the SPSS software. The results showed a significant difference between at least one SES group at each grade and subject with 2 degrees of freedom. The results were:

- **5<sup>th</sup> grade:** Math– $F(2, 2235)=97.18$   $p<0.00$ ; Reading– $F(2, 2235)=104.57$ ,  
 $p<0.00$
- **6<sup>th</sup> grade:** Math– $F(2, 2235)=104.28$ ,  $p<0.00$ ; Reading– $F(2, 2235)=109.87$ ,  
 $p<0.00$
- **7<sup>th</sup> grade:** Math– $F(2, 2235)=115.22$ ,  $p<0.00$ ; Reading– $F(2, 2235)=88.91$ ,  
 $p<0.00$
- **8<sup>th</sup> grade:** Math– $F(2, 2235)=96.70$ ,  $p<0.00$ ; Reading– $F(2, 2235)=85.30$ ,  $p<0.00$
- **10<sup>th</sup> grade:** Math– $F(2, 2235)=85.65$ ,  $p<0.00$ ; Reading– $F(2, 2235)=87.23$ ,  
 $p<0.00$

Using linear regression for school-based research is problematic because this approach includes an underlying assumption of independent and identically distributed residuals. However, a relationship may exist among the students that belong to a given

school. In other words, academic achievement among students in the same school may be related although the individual schools in a study may not be related to one another at all (Recchia, 2010). Repeated observations such as longitudinal research also run the risk of showing a correlated outcome.

To account for these limitations with the repeated ANOVA analysis, a hierarchical linear model was used. The HLM process prevents a violation of the assumption of independence and serves to reduce standard errors and Type 1 errors. The upshot is that the students in the same class are a part of their classroom and thus not independent of the classroom effects. An HLM analysis was conducted using software called ‘Hierarchical Linear Modeling’ to examine what predictors at the school level might be contributing to the differences in student academic performance. A three-level model was chosen. The levels were:

1. **Repeated measures** of student level AIMS results were used with a total of 10,404 cases in reading and math for grades 5, 6, 7, 8, and 10. The dependant variable was academic growth among individual students.  $Y$  was the math or reading score,  $\pi_{0ij}$  was the intercept, and  $\pi_{1ij}$  was the rate of change or time slope, and  $e$  was error or the residual.

$$Y = \pi_{0ij} + \pi_{1ij} (\text{TIME}) + e$$

2. **Student demographics** such as school, SES level (high medium or low), grade level, subject (reading or math), English Language Learner status, Special Education status, and ethnicity was used with a total of 2,085 students. The dependent variable was academic growth among students

within schools. The  $\pi_{0ij}$  was the intercept from level 1,  $\beta_{00j}$  was the intercept for level 2 with contextual variables such as SES ( $\beta_{01j}$  and  $\beta_{02j}$ ), ethnicity ( $\beta_{03j}$ ,  $\beta_{04j}$ , and  $\beta_{05j}$ ), and specialized services ( $\beta_{06j}$  and  $\beta_{07j}$ ), and  $r_{0ij}$  was the residual.

$$\begin{aligned} \pi_{0ij} = & \beta_{00j} + \beta_{01j}(\text{SES MEDIUM}) + \beta_{02j}(\text{SES HIGH}) + \beta_{03j}(\text{HISPANIC}) + \\ & \beta_{04j}(\text{AFRICAN AMERICAN}) + \beta_{05j}(\text{NATIVE AMERICAN}) + \\ & \beta_{06j}(\text{SPECIAL EDUCATION}) + \beta_{07j}(\text{ENGLISH LANGUAGE LEARNER}) + \\ & r_{0ij} \end{aligned}$$

3. **Schools.** The dependant variable was academic growth differences between schools using 8<sup>th</sup> grade enrollment as the link between the student and the school.  $\beta_{00j}$  was the intercept from level 2. Each of the contextual variables was listed in level 3 and linked to the 19 schools.

$$\begin{aligned} \beta_{00j} = & \gamma_{000} + \gamma_{001}(\text{SES MEDIUM}) + \gamma_{002}(\text{SES HIGH}) + \gamma_{003}(\text{HISPANIC}) + \\ & \gamma_{004}(\text{AFRICAN AMERICAN}) + \gamma_{005}(\text{NATIVE AMERICAN}) + \\ & \gamma_{006}(\text{SPECIAL EDUCATION}) + \gamma_{007}(\text{ENGLISH LANGUAGE LEARNER}) \\ & + \gamma_{010}(\text{SCHOOL}) + U_{00j}, \end{aligned}$$

One of the purposes of estimating a null model is to assess the degree of within (student level) and between (school level) group variance in academic growth. A common metric for this process is the Intra-Class Correlation or ICC =  $\tau / (\tau + \sigma^2)$ . The ICC's were calculated using the following components of total variability,  $Y_{ijk}$ : (level 1) among time within students,  $\sigma^2$ ; (level 2) between students within schools,  $\tau_{\pi}$ ; and (level

3) among schools,  $\tau_{\beta}$  (Raudenbush & Bryk, 2002). This approach estimated the proportion of variation that is within students, between students within schools, and among schools. That is,

$\sigma^2 / (\sigma^2 + \tau_{\pi} + \tau_{\beta})$  is the proportion of variance within students;

$\tau_{\pi} / (\sigma^2 + \tau_{\pi} + \tau_{\beta})$  is the proportion of variance between students within schools; and

$\tau_{\beta} / (\sigma^2 + \tau_{\pi} + \tau_{\beta})$  is the proportion of variance among schools.

The ICC variance results were small at each level in this balanced design data set. For example, about 95% of the variance was explained by the passage of time in level 1. At level 2, only .004% in math and .005% in reading of the variance was not explained by student characteristics (between students within schools). At level 3, only 3.19% in math and 2.94% in reading of the variance was not explained by the different schools. In other words, academic growth was almost entirely explained by the contextual variables inherent to each student over time, regardless of the school they attended.

The analysis was run using random intercepts and fixed slopes. The intercept described the extent to which the variation was explained by SES, and the slope described the degree of growth attributable to contextual variables over time. As indicated by Table 7 for reading results and Table 8 for math results, key explanatory variables were SES, ethnicity, and special services such as special education or English language.

**Table 7. Hierarchical linear models for students' achievement over time in reading**

Fixed Effects:	Reading		
	Coefficient	se	t-ratio
Model for initial status, $\pi_{0ij}$			
Level 2:			
SES Middle, $\beta_{01j}$	0.81	0.45	1.82
SES High, $\beta_{02j}$	4.57	0.46	9.96***
Hispanic, $\beta_{03j}$	-4.37	0.53	-8.29***
African American, $\beta_{04j}$	-6.08	0.91	-6.66***
Native American, $\beta_{05j}$	-5.58	0.93	-6.03***
Special Education, $\beta_{06j}$	-13.94	0.99	-14.13***
ELL, $\beta_{07j}$	-12.86	0.73	-17.64***
Level 3:			
Intercept, $\gamma_{000}$ (initial status)	125.43	0.67	186.48***
Intercept, $\gamma_{100}$ (growth)	81.29	0.08	996.24***
	Variance	df	$\chi^2$
School mean status, $u_{00j}$	4.700	18	87.31***
Initial status, $r_{0ij}$	0.34	2067	1503.88
Level-1 error, $e_{tij}$	676.22		

Note: \* $p < .05$ ; \*\* $p < .001$ ; \*\*\* $p < .001$

**Table 8. Hierarchical linear models for students' achievement over time in math**

Fixed Effects:	<i>Math</i>		
	Coefficient	se	<i>t</i> -ratio
Model for initial status, $\pi_{0ij}$			
Level 2:			
SES Middle, $\beta_{01j}$	0.81	0.65	1.24
SES High, $\beta_{02j}$	4.57	0.74	6.20***
Hispanic, $\beta_{03j}$	-4.37	0.66	-6.63***
African American, $\beta_{04j}$	-6.08	1.11	-5.49***
Native American, $\beta_{05j}$	-5.58	1.44	-3.87***
Special Education, $\beta_{06j}$	-13.94	0.74	-18.90***
ELL, $\beta_{07j}$	-12.86	0.93	-13.90***
Level 3:			
Intercept, $\gamma_{000}$ (initial status)	125.43	0.91	137.59
Intercept, $\gamma_{100}$ (growth)	81.29	0.15	546.79
	Variance	df	$\chi^2$
School mean status, $u_{00j}$	4.7	18	87.31***
Initial status, $r_{0ij}$	0.34	2067	1503.88
Level-1 error, $e_{ij}$	676.22		

Note: \* $p < .05$ ; \*\* $p < .001$ ; \*\*\* $p < .001$

Results from the HLM in Table 7 for reading and Table 8 for math indicated that students in high SES families were positively associated and statistically significant for academic performance, and that reading showed a higher benefit than math. For SES, low SES students served as the control. Minority status was negatively associated and statistically significant for academic performance, and reading achievement showed slightly higher deficits. For ethnicity, White/Asian served as the control. Students flagged as needing services, such as Special Education and English Language Learner students, were negatively associated with performance as well. Special Education students were more negatively associated in math achievement than reading, while English Language Learners were more negatively associated with reading achievement than math. All outcomes were significant except for the comparison between low SES and middle SES students. In summary, a significant difference existed between high and low SES students in terms of academic performance in both reading and math, regardless of their school. Low income students attending lower income schools consistently scored lower academically than students from high SES schools, even though the growth rate slopes were essentially parallel over time.

## CHAPTER 7: DISCUSSION

Students have been told their whole lives that they are dumb, stupid...Some of them said that their parents tell them that. Some of them just don't believe they're smart because of where they live [in economically depressed neighborhoods]... Our kids need more than the average kid to be told how smart they are. They are equal to everybody else but they don't see themselves as equals.

The beliefs of our educational forefathers that equivalent levels of educational expectations and resources should produce equivalent academic performance ignore the *uneven playing field* inherent in the class-based American society. Educational research has revealed that low income schools have higher teacher and administrative turnover as well as more teachers who are inexperienced or teaching outside of their content area specialty than the wealthier schools (Haycock, 2004). The social capital that produces academic success is found primarily in higher SES neighborhoods where expenditures and resources per student are greater (Sirin, 2005).

The purpose of this research was to assess the level of fit of middle school teachers who taught in hardship schools in Southern Arizona and to understand the costs and benefits of working there. Additionally, this research linked effective teaching practices associated with high self efficacy and cultural competency to increased student academic achievement. A hardship school is defined as a school with working conditions that include poor academic performance among a low income, high minority student population, in a school with frequent administrative turnover and often a long

commute. These schools epitomize the complex problems of our class-based society and serve as a reflection of the zeitgeist of our times (Zaharlick, 1992).

Using a sequential mixed-methods approach, standardized student longitudinal achievement data provided the ‘what’ of this research by revealing academic performance in reading and math among a cohort of students at particular points from grades 5 - 10. Additionally, the teacher ethnographic data provided the ‘why’ of this research by highlighting the hard work of effective teachers under the shadow of a ‘failing’ school label. Research findings aligned with Barry’s (2008) recommendation that all teachers, and especially those in hardship schools, need additional information to understand how and why they are effective. See Appendix H for Barry’s synthesis on the criteria needed to staff hardship schools. By integrating both quantitative and qualitative data, this study is holistic and describes the multiple, coinciding ecological conditions that impact student academic achievement. These conditions include family and neighborhood characteristics; school, district and federal educational policies; and entrenched beliefs of meritocracy.

The following sections will address the questions posed by this study. The research questions are:

1. Is there a significant difference in standardized scores from the AIMS test between high and low SES students and schools in grades 5 – 10?
2. Is there a significant difference in a widening of the academic gap in the trajectory from elementary to high school between high and low SES students and schools?

3. Is self efficacy a greater determinant in teachers' choice to remain in a hardship school than other school conditions such as leadership or location?
4. Does teacher self efficacy and cultural competency help to narrow the academic achievement gap?

This chapter identifies essential characteristics of teacher effectiveness with a low income, majority-minority population. Teacher effectiveness has been identified as a primary factor in increasing student academic achievement (Hanushek, 2005; Hattie, 2003; Sanders & Rivers, 1996).

### **Achievement gap differences between high and low SES students**

I taught at a higher income school. The kids would come in, you could literally ask them to read, say two or three pages and then you could discuss them. Take some notes on what is pertinent and then we'll enrich it a bit. When I got here, that wasn't something the kids had the skills to do. It wasn't that they couldn't develop the skills, but most of them just didn't already have them.

The first research question inquired if a significant difference in standardized scores existed between high and low SES students and schools in grades 5 – 10 from the AIMS test. It was hypothesized that a significant difference did, in fact, exist. Longitudinal standardized test data were used among 2,238 students who had both a math and reading score for each grades, 5 through 8, and 10. The results from three different types of analysis including ANOVA, HLM and correlation all produced very similar results: the

achievement gap that appeared in 5<sup>th</sup> grade between students of high and low SES families was significant.

An ANOVA was conducted with the three school groups: high SES, medium SES, and low SES. The results showed a significant difference between high and low SES schools at each grade and subject with 2 degrees of freedom. As the results from the HLM analysis (please see the quantitative results section) revealed a significant difference between the high and low SES groups, the same can be assumed for the ANOVA results. The ANOVA results by grade were:

- **5<sup>th</sup> grade:** Math– $F(2, 2235)=97.18$   $p<0.00$ ; Reading– $F(2, 2235)=104.57$ ,  
 $p<0.00$
- **6<sup>th</sup> grade:** Math– $F(2, 2235)=104.28$ ,  $p<0.00$ ; Reading– $F(2, 2235)=109.87$ ,  
 $p<0.00$
- **7<sup>th</sup> grade:** Math– $F(2, 2235)=115.22$ ,  $p<0.00$ ; Reading– $F(2, 2235)=88.91$ ,  
 $p<0.00$
- **8<sup>th</sup> grade:** Math– $F(2, 2235)=96.70$ ,  $p<0.00$ ; Reading– $F(2, 2235)=85.30$ ,  $p<0.00$
- **10<sup>th</sup> grade:** Math– $F(2, 2235)=85.65$ ,  $p<0.00$ ; Reading– $F(2, 2235)=87.23$ ,  
 $p<0.00$

Using Pearson's  $r$ , 5<sup>th</sup> grade achievement overall was highly correlated to 10<sup>th</sup> grade achievement in math,  $r(2,238) = .76$ ,  $p<.00$  and in reading,  $r(2,236) = .80$ ,  $p<.00$  for all students. Please refer to Appendix G to review the reading and math correlation tables. In other words, the achievement gap that was first documented in elementary school

between high and low SES schools persisted into high school at about the same rate. With relative confidence, students' high school AIMS scores can thus be predicted based on their fifth grade AIMS performance.

Ethnicity/race has been the conventional means to subdivide students nationally, but the underlying issue may be more complex than group membership. Poverty is similar to 'ethnicity' in that they both serve as umbrella terms for variety of conditions. Although the level of poverty can be readily measurable for a family, the cause of poverty may be the result of various inter-related conditions (Magnuson & Duncan, 2006). Additional multi-method research is needed to unpack these umbrella terms such as ethnicity/race and poverty to understand more clearly which variables are most predictive of academic performance.

Results from the National Assessment of Educational Progress (NAEP) have demonstrated that minority students have made improvements in 4th grade math and reading and 8th grade math between black and white students from 1992 to 2007. Although this progress has been notable, it has still not been sufficient to close the achievement gap. Black and Hispanic students continue to lag behind their White peers by an average of more than 20 test-score points on the NAEP math and reading assessments at 4th and 8th grades, a difference of about two grade levels (Hempill & Vanneman, 2010). Please refer to Appendices A and B for a graphical representation of the gap between Hispanic and White students over 30 years.

The primary focus of the NCLB legislation in 2001 was to close the achievement gap. Under the federal accountability system, schools and districts were required to

disaggregate student test scores by ethnicity and service (English Language Learners, Special Education, and Free and Reduced Lunch). This process produced a greater awareness by school staff of the academic disparities between ethnicities and students who received services. Even with this improved awareness, the achievement gap has still not really changed. Moreover, federal labels such as ‘failing’ from this legislation have done nothing to help these schools improve. In fact, this negativity has the opposite effect by adding one more disapproving label, reinforcing its already disparaged status, and compounding stress to the school community.

Surprisingly, the NCLB accountability system has discounted fifty years of research documenting that students living in poverty are less school-ready than their middle class counterparts. By third grade, the significant academic gap in standardized tests results can be correlated with family income levels nationally and this gap persists into middle and high school (Annie E. Casey Foundation, 2010). The NCLB system is, therefore, preferential to middle and higher income schools by using annual student performance scores as its primary measure. To help even the educational playing field, a design that analyzes student growth data over time or a value-added calculation to assess student achievement should be implemented. When growth measures are used, low income schools may no longer be ranked at the bottom of the list in terms of student performance.

The economic inequities in society are played out in the hallways of our schools daily where students from middle and higher incomes bring more resources and educational capital to school than do students living in poverty. Unfortunately, low

student achievement has been an accepted reality in low income schools by educators despite the NCLB mandate that all children will perform at proficiency by 2014. The results of this study confer with national data. Students who began school behind grade level expectations do not catch up. The low scores of this cohort from elementary school were translated into low scores throughout their school career.

### **Does the gap widen from elementary to high school?**

I want to be that one more person, that one more adult in their life that can make that personal contact so that they have that positive male role model, and they have even just somebody that took the time to look at them and says, "Are you doing okay? Hey, good job"...I know for so many of our students, this is the only place that they get looked at or talked to. They get so ignored anywhere else. I don't want to be one more person in their life that ignores them.

The cumulative (dis)advantage theory claims that being poor, minority, and attending a school of similar demographics can result in the widening of the academic gap in the trajectory from elementary to high school (Caro et al., 2009). Some researchers have suggested that students who lack middle-class social capital will not perform as well in school as those students who have more resources available to them (Lareau, 2002). Social capital is a means for the dominant class to reproduce social norms and values to preserve their hegemony (Bourdieu, 1977). Social capital can be symbolic or structural and is realized in the accumulation of wealth and power. In American society, social capital is reinforced through governmental and institutional policies, and ideologies (Dika & Singh, 2002). According to this perspective, students

in low SES neighborhoods internalize the economic disparity they experience on a daily basis and may feel discouraged or trapped. Conditions such as unemployment, inadequate health-care, segregation, substandard housing, drugs, and lack of social services isolate residents from more affluent segments of the city (Stall et al., 2008). These deleterious conditions gradually cumulate to create barriers for academic success in children.

For research question 2, it was hypothesized that the academic gap of this cohort would not widen during the middle school years. Rather, it would remain constant so that the size of the gap in 5<sup>th</sup> grade would be highly correlated with the size of the gap in 10<sup>th</sup> grade. In other words, students from low SES backgrounds would be learning at the same rate as students from the high SES backgrounds from elementary school through high school, despite the multiple deficits they face at home and in their neighborhood.

Seventy-eight percent of the middle schools in this research had poverty rates that exceeded 40%. Poverty is therefore pervasive in many of our schools and chronic in some. Regardless of the needs of students in the hardship schools where the poverty rate ranged from 75% - 98%, the gap did not widen. The findings of this study revealed that the academic gap evident in elementary school among students attending low SES schools did not widen over time relative to their peers in the high SES schools.

In the educational literature, the disparity stemming from the academic gap can become a sole focus, with poverty as the single independent variable. What is overlooked, when focusing only on poverty as a causal agent for the gap, is the social context. If students from low SES schools can match the growth rate of students from

high SES schools despite considerable social and economic deficits at home and in their community, schools may well have a positive mediating influence that produces equivalent academic progress. In this research, for example, the gap did not close, but it did not widen either. Recognition should therefore be provided to the teachers at the low SES schools for keeping pace with the growth rate of the rest of the district in terms of academic achievement, even without the family support found in the higher SES schools. Rather than criticize the teachers and administrators for not being able to close the achievement gap, these educators should be applauded for their ability to promote equivalent academic growth rates of their peers from higher SES schools.

This research has assumed a ‘systems’ or holistic theoretical approach because of its responsiveness to change. This approach is conceptualized differently than the somewhat fatalistic and uni-directional cumulative advantage theory. The theoretical premise of holism is similar to the cumulative advantage theory in that overlapping conditions interact simultaneously to produce gaps in student academic achievement over time and that these conditions include family and neighborhood characteristics, as well as school, district, and federal educational policies. What is different, however, in the holistic construct is that a significant change in one condition may produce a positive (or negative) ripple effect into the other arenas because these processes are so closely intertwined. Resiliency, resistance, and human agency are integral to a holistic approach. The process is responsive to human interaction and can produce change that may be cumulative, equalizing, or diminishing. In this district, despite the barriers

created by family and neighborhood poverty, students were sufficiently resilient to maintain a consistent rate of learning as their more wealthy peers.

### **Teacher self efficacy in high poverty schools**

*This is the kind of community I came from. I'm Hispanic myself and I grew up in a Hispanic community and I feel at home here...That's part of who I am and I think I understand it better than somebody who grew up in a different type of culture...Strategies come automatically to me and I have an idea and an experience what to do and how to do it here. So, I don't want to go anywhere else.*

We all recognize effective teachers when we see them in action. They inspire us to explore in new and more complex ways. They motivate us to work harder for their assignments. They make us feel valued and capable. Most importantly, they leave an indelible mark of sustained interest in a subject area or idea long after the class has finished. Effective teachers can and do change lives because they embody the message that to be masterful, the needed skills are all within reach. Research question 3 asked if self efficacy was a greater determinant in teachers' choice to remain at a hardship school than other school conditions such as leadership or location. It was hypothesized that teachers working in 'hardship' middle schools preferred a school climate that provides relative autonomy in the classroom and light supervision. As they have seen administrators come and go on a regular basis, teachers had to depend more upon their own expertise for teaching strategies than the direction of the administrative staff.

The student cohort used in this study all attended a district middle school from 2005-06 through 2007-08. Using the math and reading results from the AIMS test from

their 7<sup>th</sup> and 8<sup>th</sup> grade, teachers were ranked by comparing their students' growth to the other middle school teachers by subject. This approach is limited and results should be read with caution. Please see Chapter 3 for an explanation of the limitations of this type of teacher ranking. However, these data do provide a relative snapshot of the distribution of effective and non-effective teachers across the district. Please see Table 2 for a breakdown by school group (high, medium and low SES). The results suggested that the most effective teachers in this district during 2007-08 were disproportionately serving our medium and low income students. The high SES schools did have some effective teachers and only a very few ineffective teachers. Most of the teachers in the high SES schools, however, appeared to maintain average student proficiency without dramatic increases or decreases. It can be postulated that student growth over one year was more varied in the medium/low SES schools than the high SES schools because students may be more dependent upon teacher expertise as their primary source of academic information. Conversely, students from high SES families have more resources available to them on a regular basis to supplement their academic learning beyond the school day (Barton & Coley, 2010; Bradley & Corwyn, 2002; Sirin, 2005). Also noteworthy is that the least effective math and reading teachers preferred to work in middle income schools. According to Jacobs (2007), 'most teachers are attracted to high-functioning schools with competent administrators, dedicated colleagues, and reasonably well-behaved children, who are 'teachable' even if they may come from poor families and have low skills' (p. 142). It could be assumed that the higher demands from parents and administrators kept the most effective and the least effective teachers

away from high SES schools. The middle SES schools and to a lesser degree, the low SES schools were bifurcated with an over-representation of both effective and ineffective teachers.

Informants confirmed these findings that their colleagues in low income schools had a wide range of expertise. They described the type of teacher who was satisfied to persist in a hardship school for five years or more as generally falling into two categories: Either they identified strongly with the student population and/or sought out a professional challenge serving students at risk or they couldn't find a teaching job anywhere else. About half of informants accepted their current job initially because it was offered to them without really knowing what it meant to work at a hardship school. Because of their concern for the students, their natural curiosity and acceptance of diversity, their ability to work independently and their willingness to invest long hours at the school, they became successful teachers, despite the difficult working conditions. Not all teachers came from poverty, a Hispanic background or spoke Spanish; but all informants expressed a high level of both cultural competency and self efficacy. For them, it became a self fulfilling prophecy that the more time they invested building relationships with students, the more culturally competent and self directed they became, and the better their students performed academically. Also, the longer they stayed at the school, the deeper their sense of purpose became.

Another benefit that teachers expressed was being able to witness their impact on the students. Because many of the students have inconsistent adult presence in their lives, teachers wielded considerable influence during a critical point in their

development. The growth potential among these adolescents was pronounced because they began each year with multiple academic gaps and social-emotional needs. Teachers were aware that to be effective with this population, high level teaching skills such as differentiated teaching must be implemented, which necessitated the development of individualized lessons and use of data to guide instruction. But informants expressed that it was all worth it. Watching the student growth literally unfold before their eyes was enormously rewarding and served to reinforce their self efficacy. Additionally, when students continued to be successful in high school and beyond, even in the face of formidable social, financial or family barriers, teacher's commitment to their profession was validated.

Because working in a low income school presented ongoing challenges, inequities and frustration, informants high self efficacy set them apart from their less effective colleagues. For example, they perceived challenges as tasks to be mastered, were deeply engrossed in teaching-related activities, stayed committed to challenging goals they set for themselves, and attributed failure to their own lack of knowledge or skills. Most importantly, there were optimistic and felt that they could overcome obstacles by acquiring new skills. All of these qualities align with Bandura's definition of high self efficacy.

Informants felt high self efficacy despite the reality that their schools were in school improvement due to low student achievement with the unwanted negative attention from the district and state. Although the aggregate achievement scores were well below grade level standards, teachers still felt hopeful that the beneficial impact

they had on students would expand their future opportunities. They also felt that their impact could not be captured on a single standardized test. Effective teaching, according to informants, was centered on building positive and trusting relationships with students and their families. Moreover, they felt that their students were improving academically and were approaching grade level standards. Not only did they develop supportive relationships, teachers with high self efficacy also imparted life skills, modeled the thrill of discovery, encouraged the need for higher education, and demanded consistency and structure for intellectual productivity from their students. In a nutshell, they loved their job. The positive reinforcement they received from students outweighed the frustration and added effort of working in a hardship school.

Defining teacher 'effectiveness' in the educational literature is another example where teachers in hardship schools are often cast in a negative light. Relational skills such as cultural competency or a sense of purpose, critical for effective teaching in hardship schools, cannot be easily measured quantitatively and are thus simply left out of the equation. For example, an 'effective teacher' as defined by Hancock's research (2004) tended to be biased toward those from higher socio-economic standing who have more resources in obtaining certification from exclusive colleges. These teachers may not persist in hardship schools where the need for high cultural competency is a more important skill than alumni affiliation or a high college GPA. Research on teacher effectiveness is an excellent example of the need for a 'systems-based', mixed-methods approach. A quantitative approach misses phenomenological (Goffman, 1959) nuances between actors and social relationships that are requisite for effective teaching. The

qualitative approach misses out on the power of statistics in assessing or predicting student achievement, or identifying the level the influence that can be attributed to different variables.

The costs of staying in a hardship school were described primarily as adult-related issues by informants. Although the demographic profile of students presents considerable challenges, principal turnover may ultimately be the greatest contributor in perpetuating difficult working conditions. On average, principals stayed at these schools about two or three years over the last five years. Without dependable leadership, teachers were left to fend for themselves, solve problems, and advocate for their own resources. These responsibilities increased their work load even more and distracted them from focusing on the needs of the students. Three issues were voiced repeatedly about the unwanted consequence of principal turnover that spilled into the classroom: lax discipline policies that resulted in students leveraging too much control; constant instructional changes attached to each new principal in an effort to improve student academic performance with too little time to understand impact; and a lack of accountability for ineffective teachers who needed oversight. Teachers felt autonomous in their classrooms and that the administrative supervision was generally light. The costs of staying in a hardship school environment can be overpowering for teachers who need support, structure, and continuity to perform successfully. The added pressure of prioritizing time demands between work and their personal lives may push capable teachers to seek a job in middle or high income schools with fewer hassles. The teachers who stayed five years or longer in hardship schools weathered the revolving

door of school staff and other adult-generated issues because of their high commitment to their students.

### **Impact of teachers on the achievement gap**

As I look at my colleagues over the years, there are some who actually came from this community. It's almost like this is their own family. Then you've got another category of people who, like myself, have a sense of mission [to help those most in need]. And then there's other people that, frankly just can't get a job anywhere else. They're fearful of the community. They don't want to get out there to talk to parents. They blame the kids for their problems. [They are afraid of] the "gangs" and the unknown. Some of them have language issues; they can't speak Spanish and it's a context they're unfamiliar with...I think fear is the undoing of many, many teachers.

In this last section, it was hypothesized that teacher self efficacy and cultural competency helps to narrow the academic achievement gap. Even with adverse working conditions, teachers still *chose* to work at hardship schools. According to Eccles et al., (1991) 'individuals are not likely to do very well or be very motivated if they are in social environments that do not fit their psychological needs' (p. 573). Indeed, the 116 teachers who filled out the on-line survey indicated that their fit in the school overall was good as evidenced by 81% who looked forward to their job every day. Their psychological needs were also met as 95% stated that the positive relationships they shared with their students was the most rewarding part of their job.

Research has shown that having a larger amount of minority teachers positively affects academic performance and attachment for minority students (Crosnoe et al.,

2004). Many teachers working in hardship schools in this study were either members of the dominant school culture, culturally competent, or both. This competency beneficially impacted student academic performance because of the respectful and trusting relationship between teacher and student. Results from the qualitative research with teachers brought to light specific qualities that defined cultural competency in hardship schools. They were:

- a strong identification with the culture/language of students
- a strong sense of self efficacy and
- a belief that higher education will elevate students out of poverty.

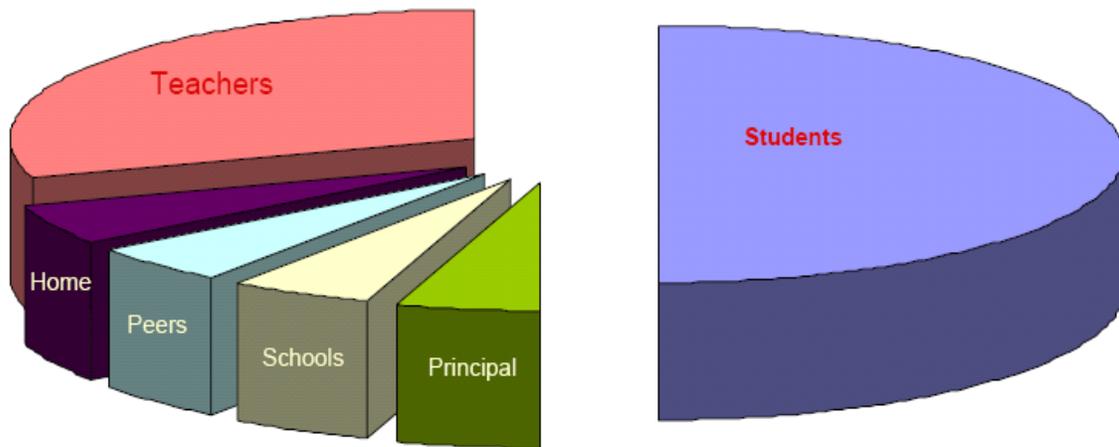
Informants felt that the trusting relationships they developed were paramount to their success. Moreover, their sense of purpose was reinforced regularly in the small successes of many of their students and further fortified by the big successes of a select few students who went on to exceed their expectations by completing high school or attending the university. These teachers believed that their students were capable, bright, and ingenious. They continued working long hours year after year to ensure that their students had an opportunity for post-secondary success in college or a career to help raise them from the tentacles of poverty.

Hattie (2003) conducted research on the key factors that influenced student achievement. Using Hierarchical Linear Modeling, he discovered that six factors produced the greatest amount of variance among the different influences that impact student achievement. They were:

- The student – about 50%
- The teacher – about 30%
- The home – between 5 – 10%
- The school – between 5 – 10%
- The principal – included in the school variance and
- Peer effects – between 5 – 10%

The student variable referred to what the student brought to the task and predicted achievement more than any other variable. Although the home only accounted for 5-10% of the variance, the primary home effects were already largely accounted for in the student variable. What was left over included the level of support and expectations from the home. The school also accounted for a small amount of the variance at 5-10%. Although principals were primarily accounted for in the school variable, they were also related to the overall school climate and thus included as a key variable. The peer effects were also small which inferred that the influence of peers was generally minimal (except in the cases of bullying). Finally, these data indicated that outside of student ability, teachers accounted for the largest amount of variance, which suggested that they are the single greatest influence on student achievement. In short, Hattie concluded that all teachers impacted students to some degree, but effective teachers had tremendous positive influence on the academic growth of students. Please refer to Figure 5 for a pie chart for the major sources of variance of student academic achievement.

**Figure 5. Primary sources of variance of student academic achievement (taken from Hattie, 2003)**



Similar to Hattie's results, this study also demonstrated that the school only accounted for a small amount of the variance at about 3%. What was different about the two studies was that in these findings, the student's growth over time accounted for a much greater variance (95%), suggesting that student and home characteristics determined the majority of academic performance. However, this study was limited because other variables, evident in Hattie's research, were not measured such as the academic impact of students by individual teachers and peer influence.

The qualitative findings from this study concur with Hattie's analysis about the significant influence teachers wield in students academic success, especially for students

living in poverty. To be effective in low income schools, teachers must go above and beyond what was typically expected of them to develop trusting relationships with their students and surrounding community. A strong work ethic, high expectations, a willingness to be challenged professionally, and cultural competency were the most critical skills to be successful. Despite the negativity surrounding hardship schools in the educational literature and through NCLB legislation, teachers in hardship schools knew that their job was one of the most demanding in the profession and that their own human capital was the backbone of student success.

According to the research framed by the cumulative advantage theory, students living in poverty gradually develop a widening gap in academic performance that places them at risk for a trajectory of failure (Caro et al., 2009; DiPrete & Eirich, 2006; Klein et al., 2000; Phillips et al., 1998). Why has the achievement gap remained consistent over time in this district when other studies have shown otherwise with students who live in poverty? One factor might be the high degree of self efficacy and cultural competency of key teachers who work in the low SES schools. These educators identify strongly with the students and their families. Their sense of identification comes from: similar ethnic background including Latino culture and language; similar socio-economic background, including poverty and the hardships associated with being an economic underclass; or cultural competency where curiosity and love of diversity is emphasized. These educators interact daily with the deleterious effects that poverty places on their students and families. In response, they have adjusted their teaching

strategies to be sensitive to students' situations and designed lesson plans that are relevant to their lives.

Effective teachers in low income schools have the double duty of indoctrinating students into the middle class with the associated behavioral expectations as well as providing them with adequate content area knowledge. To get all of these duties met, they must spend long hours at school nurturing relationships with students and providing a positive adult presence. Teachers reported that in order to feel prepared to provide quality differentiated instruction each day, they can easily spend 50 hours or more each week at school. This big time commitment may be a deciding factor for some teachers to move to higher income schools where the professional demands may be less while they can still feel as though they have a positive impact on their students.

In contrast to the punitive approach of the NCLB legislation, the author advocates for the end of blaming teachers as the sole scapegoat for the student achievement gap. More studies such as this dissertation need to be published that describe the complexities of teaching in a low income school. Recognition of teacher excellence within challenging environments such as low income schools needs to occur publicly to celebrate their commitment and beneficial influence on students. To narrow the achievement gap, our low income schools need additional resources to extend and enrich students' school day and a higher pay scale for teachers and administrators who work there. Additionally, for schools in federal or state mandated school improvement, greater flexibility should be granted to administrators to get rid of the ineffective teachers in an expedient way. As this study has repeatedly noted, teachers have the single

greatest influence on student achievement, but they cannot do it alone. They need consistent school leadership, district support and the opportunity to collaborate with their colleagues regularly. Additionally, they should be granted relative autonomy in the classrooms if they show adequate student growth. It is time for districts to prioritize their lowest performing schools, place the best teachers and most committed administrators where they are most needed, and reward them with financial incentives and the prestige that they deserve.

### **Summary**

The relationship is the first thing that needs to be built with these kids. To be able to get through that barrier - they put a shield up. They don't want to let anybody in...from telling you what is going on at home. They are making sure that their parents don't get into trouble for leaving them by themselves, or they are illegal and they don't want anybody to know. It could just be anything. Once they know they can trust you and it is not going anywhere, it doesn't matter what their parents do. [They understand that] you are willing to help them no matter what or even just listen to them.

This research contributes to the educational research field by providing a voice to teachers working in low income schools on what works to narrow the achievement gap with students at risk who are predominantly of Mexican-American heritage.

Traditionally, research on the achievement gap uses statistical methods such as correlation, regression and multi-level modeling to interpret the educational trends. This research takes analysis one step farther than a single reliance on quantitative methods for interpretation. This research also used qualitative research from teacher narratives as the

explanatory model to describe the complexities of increasing academic performance among low SES students. The sequential mixed-methods approach (Creswell, 2009) of this study is holistic, integrative and innovative as it examines the academic gap over time between low income middle schools and the high income middle schools in this district.

There is nothing easy about teaching in a low income middle school. Turnover is high among teachers and administrators, parent involvement is low, students typically do not connect their current schooling as relevant for their future profession/skills, students' life experiences are limited and their academic performance is, on average, one to two grades below state standards. Additionally, schools may be situated in on the edges of district boundaries and often fall under the microscope of state or federal mandated sanctions. The complexities of poverty can be overwhelming to deal with in a classroom on a daily basis. Mobility, language barriers, safety concerns, an inconsistent adult presence in many students' lives, a lowered educational community capital and impending crises in meeting immediate needs can all influence the classroom environment. Cognizant of the barriers to higher education because of family, community and school-based issues, some teachers in low income schools cope by decreasing their academic expectations of students (Haycock, 2004). This study found, however, that not all teachers took the road of less resistance: some teachers held high expectations of their students, but those expectations were based on the skill level that the student came in with and not necessarily on their grade level standards. These

teachers had taught in a low income middle school for five years or more and had learned how to balance their feelings of realism and optimism about their students. They felt realistic that the institutional barriers against their students were formidable and unrelenting. At the same time, they maintained feelings of optimism that the potential their students exhibited might be enough for them to be successful in school and in life. Teachers were able to find a way to reconcile these juxtaposed feelings by developing meaningful relationships with students which then allowed them to teach more effectively in the classroom. Because these teachers were culturally competent and could empathize with the struggles of poverty, the small steps of academic and social progress that their students demonstrated reinforced their sense of self efficacy.

In conclusion, the results revealed that an academic gap existed between high and low income schools, and that the difference was statistically significant. Additionally, the longitudinal student data with standardized math and reading scores from 5<sup>th</sup> grade to 10<sup>th</sup> grade indicated that the gap did not widen between high and low SES students. Thus, the academic gap that was evident in elementary school was consistent over the next six years. Students from low income schools lacked social capital and other resources available to their wealthier peers. Despite these deficits, these students were still able to make equivalent academic growth as students in the high SES schools, albeit at a lower performance level. One reason that the gap did not widen, according to this research, can be attributed, in large part, to a dedicated teacher cadre that had chosen to work in low income middle schools. These teachers expressed both a high level of self efficacy and cultural competency.

## CHAPTER 8: RECOMMENDATIONS

This section provides four recommendations that were developed from this research. They are:

- A call for high-quality, intensive, early education programs for low SES families
- A call for an increase in K-8 school configurations, especially for low SES students
- A call to relocate and recognize effective teachers into low income schools
- A call for increased multi-method research in future educational studies

### **Recommendation #1: A call for high-quality, intensive, early education programs for low SES families**

*In the 9 years that I have been at this school, I've seen some strong students; but most [students] are not at their respective grade levels in academic skills.*

Increased federal funding should be allocated to support high-quality educational programs for years 0-8 or infancy through third grade for our country's most economically vulnerable children. Nationally, data has shown that the achievement gap is already established by 3<sup>rd</sup> grade (Annie E. Casey Foundation, 2010). A call for subsidized, intensive, early educational programs for infants and preschoolers is

warranted to produce educational and social capital more equitably among our financially struggling families. A sliding fee scale should be offered to other families interested in having their children participate as well.

Rigorous evaluations of intensive early childhood programs revealed that they produced enduring improvements in the life chances of children living in poverty. The Head Start program, the Perry Preschool intervention study, and the Abecedarian program all demonstrated significant improvements in academic performance of participating children during the elementary school years in experimental and quasi-experiment evaluations. However, some ‘fade out’ of the beneficial program effects were documented as early as third grade. This finding suggests that high-quality learning environments are needed, as a follow up to these early education programs, in elementary school to sustain the effects of the early intervention (Duncan et al., 2007).

According to the report from Voices for America’s Children and the Child and Family Policy Center (2005), ‘while 85% of the brain’s core structure (size, growth, and much of its hard wiring) is developed by age four, less than 9% of public investments in education and development are made by that time...for every dollar invested in a school-aged child: 52.1¢ is invested in a college-aged youth, but only 21.3¢ is invested in a pre-school aged child and only 8.9¢ is invested in an infant or toddler’ (p. 3, 6). This public ‘investment gap’ in early education must be addressed to provide the opportunity for all children to be school-ready by kindergarten. Increased investments in high-quality, early education programs can enhance academic success and future career opportunities of participating children. The benefit to society easily outweighs

the costs of implementation. Through these programs, infants and preschoolers can be supported and enriched developmentally in the following areas: (Duncan et al., 2007; Florez, 2011)

- Complex cognitive neurological capabilities that are built upon by early foundational skills during infancy and preschool years
- Language and cognitive skill development to support the primary influence of the home learning environments
- Socio-emotional skills such as self-regulation that are hardwired in the brain by early emotional experiences

Additionally, strategic academic intervention and enrichment for students in the elementary grades, K-3, is needed to support development with the same rigor as the intensive early education programs. For children who fall behind during the elementary grades, targeted enrichment programs with embedded core skills, such as self regulation, are needed to provide a versatile and challenging learning environment. According to Florez (2011),

Children who cannot effectively regulate anxiety or discouragement tend to move away from, rather than engage in, challenging learning activities.

Conversely, when children regulate uncomfortable emotions, they can relax and focus on learning cognitive skills. Similarly, children experience better emotional regulation when they replace thoughts like “I’m not good at this” with thoughts like “This is difficult, but I can do it if keep trying.” Regulating anxiety

and thinking helps children persist in challenging activities, which increases their opportunities to practice the skills required for an activity (p. 47).

In summary, programs that support infants' and preschoolers' social, emotional and cognitive development are critical. According to Duncan et al.'s (2007) estimate, a government-funded national high-quality, early education program would not be cheap; costing taxpayers about \$20 billion a year. However, if these programs can produce a portion of the social and academic gains revealed by the model programs, the social investment to reduce poverty in the next generation would be profitable to all sectors of society.

### **Recommendation # 2: A call for an increase in K-8 school configurations, especially for low SES students**

The restructuring of our school was accompanied by the most destructive mechanism I have seen at work in the system. Nearly all the students shut down, using the excuse that since they were 'failing', there was no longer a need to continue to learn. Undoubtedly, the restructuring [to a K-8 school] was the best thing that ever happened to this school, but the bad publicity was un-excusable.

The renewed interest in K-8 schools has been propelled by the public perception that the middle school model has failed as a social experiment and that the K-8 model is better suited to adolescents emotional and academic needs (Watson, 2010). This author supports the movement towards smaller K-8's for adolescents as the best fit because of the smaller scale of the school. Typically, K-8 schools are closer to home and draw students from the surrounding neighborhoods, reinforcing a sense of community that

extends beyond the school day (Byrnes & Ruby, 2007). Ironically, the smaller size of the traditional K-8 may actually be better suited to implement the same set of ‘best practices’ originally developed for middle schools. K-8’s may be more a more appropriate environment to establish personal learning communities, team teaching, and mixed-age classrooms than the larger and more institutionalized middle schools (Byrnes & Ruby, 2007).

However, it is also recognized that a supportive and nurturing school climate does not have to be confined structurally just to smaller K-8 schools. Middle schools can implement a child-centered, ‘best practices’ model by dividing their staff and student population into houses to create a school-within-a-school environment, effectively creating smaller learning communities within a larger setting. These options thus take scale of the school into consideration that can match fewer students per teacher to foster relationship building.

Adolescence is a time of social, emotional, and physical changes. As the middle school years may be the last real opportunity for educators to influence students’ personal and educational trajectories, the school environment must fit the multifaceted needs of this population. Adolescents perform better in environments that allow them increased decision-making opportunities and greater control (Eccles et al., 1991). The fit between adolescents and the middle school structure has been repeatedly reported in the educational literature as a failed experiment (Anfara & Buehler, 2005; Bean & Lipka, 2006; George, 2005; Watson, 2009). Smaller systems such as K-8’s are

becoming the preferred model to address the perceived decreased academic performance and social well-being of students (Byrnes & Ruby, 2007; Weiss & Kipnes, 2006).

Theobald and Siskar (2008) argued that size and scale are important criteria for student success and teacher satisfaction. Their research revealed that smaller schools produce 'better student achievement, higher graduation rates, fewer discipline problems, fewer violent incidents, less vandalism and theft, reduced truancy, less substance abuse and decreased gang participation. Small schools have higher rates of participation in extracurricular activities and in general, students feel greater school connectedness with less alienation. Similarly, teacher morale is better and teachers exhibit more positive attitudes when teaching in a small school setting' (p. 295).

One factor that distinguishes the overall school climate of middle schools from K-8 schools is how students are regarded by the school staff. In traditional middle schools, students are typically regarded as if they were no different from older adolescents about to enter high school; whereas in traditional K-8 schools, students are typically regarded as if they were no different from the younger students in the upper elementary grades. This distinction influences social and intellectual expectations of students. The middle school climate emphasizes more rules and self sufficiency, similar to high schools; whereas the K-8 school climate emphasizes more nurturing and support, similar to elementary schools (Mac Iver & Epstein, 1993).

George (2005) listed the benefits and detractions of a K-8 configuration in contrast to a traditional middle school. He stated that K-8's would benefit student achievement and learning with: increased test scores; improved student discipline; relief

from overcrowding in some larger middle schools; elimination of the transition from 5<sup>th</sup> to 6<sup>th</sup> grade; longer and potentially more positive teacher-student relationship; longer amount of time in a neighborhood school; children stay younger longer; increased parent involvement and communication; enriched curriculum for younger children; elementary and secondary educator collaboration/reculturing; and positive influence on teacher education and administrator preparation. Negative outcomes from the conversion to a K-8 from a middle school might be: reconfiguration may end up as ‘restructuring’ without ‘reculturing’; conflict between the different paradigms of elementary and secondary education in a school; evidence is not clear that changes in grade levels alone produce significant test score improvement; professional development and other resources may be slighted for school leaders and teachers; teacher preparation and orientation is unclear for ‘highly qualified’ teachers; transition to a high school may be more difficult from a K-8 setting; some students are ‘finished’ with elementary school and want more diversity at the end of 5<sup>th</sup> grade; potential ‘corruption’ of younger children by older students on campus; scheduling issues and conflicts between elementary and secondary classes; administrator preferences may lag for K-8’s; additional staff associated with educating young adolescents may be too expensive; refitting the elementary school facilities to accommodate labs and space issues; and moving materials from one school to another is expensive.

With all of these considerations taken into account, it appears that a move towards a K-8 environment may benefit the student; but at the same time, the move may inconvenience established procedures of the school and district. More research is

needed to understand more clearly the aspects of the different middle years systems such as K-8 schools, traditional middle schools and schools-within-schools middle schools. Regional research is called for to decide which model fit best into a district's educational vision and which model yields the greatest benefit for adolescent academic performance and social well being.

### **Recommendation #3: A call to relocate and recognize effective teachers into low income schools**

*It is a difficult job here. I've grown to love my students; relationships are key!! However, I feel there is a lack of consistency and expectations for discipline at the school. Teachers are feeling overworked, stressed and unsupported. There is far more expected of us (training, paperwork, observations) due to being in corrective action that seems to take away from planning for the kids.*

Educational paradigms can be changed with relevant research findings and theories to guide decision-making. Decisions such as the appropriate identification and placement of effective principals and teachers within a school district can result in improvement at the school level in short order. As low income schools are at-risk for academic failure and associated sanctions by state and Federal entities, principals and district administrators can also apply these findings immediately to support existing teachers in becoming more effective in the classroom. Results from this study can guide reform and accountability decisions at the school level as well as help meet particular needs of teachers in hardship schools. Additionally, because the specific benefits of teaching in

hardship schools have been well documented in this study, the information can be used to attract high quality teachers. This author recommends the following:

- a. Effective teachers and administrators with high self efficacy and cultural competency should be placed in our lowest performing schools with a commitment to remain at the school for a minimum of five years, especially the principal. This commitment to continuity will serve to alleviate feelings of uncertainty by providing consistent roles, rules, and expectations for faculty and students.
- b. Effective teachers and administrators should be compensated financially and socially for their added efforts/time in low income, low performing schools.
- c. Evaluations of effective teaching and administration should be ongoing with sufficient time for reflection.
- d. Administrators in low income, low performing schools should be able to choose their own teachers, rather than have them simply 'placed' at the school by the district. Additionally, these administrators should be permitted an expedient process to remove ineffective teachers from the school by the district.
- e. Effective teachers and administrators of low income, low performing schools need to serve as regular guest speakers or be available for other mentoring opportunities for pre-service teachers in teacher preparation programs

Collective efficacy is defined as (Goddard et al., 2004), ‘the judgment of teachers in a school that the faculty as a whole can organize and execute the courses of action required to have a positive effect on students’ (p. 4). The four sources of collective efficacy-shaping information are derived from Bandura’s original concept of self-efficacy. They are (Goddard et al., 2004):

- Mastery experience – the active learning of the group is translated into learning at the larger organizational level
- Vicarious experience – observing successful programs by high achieving schools and then replicating them at own school
- Social persuasion – motivational talks, workshops, profession development and ongoing feedback for teachers can influence action within the school and positively affect the climate
- Affective states – the stress associated with high-stakes standardized testing impacts the mood of a school because the information labels the school as successful or unsuccessful.

School districts can place their best and brightest teachers and administrative leaders in the most academically struggling schools to encourage collective mastery experiences through collaboration and high expectations. Vicarious experiences can shape school culture, for example, by asking teachers to report about their past schools and experiences of ‘what works’ in addition to observing their peers in action. Teacher’s professional needs should be accommodated to keep them satisfied such as a consistent and positive discipline policy, collaborative planning and teaching

opportunities, and continuity in leadership. School staff could sign a five year commitment to remain at the school. Although they would be evaluated annually by administration to retain their position, their commitment to stay each year would be rewarded through bonuses or stipends. If a teacher chooses to break the contract, he or she would need to pay the school district the equivalent amount in bonus or stipend money as a disincentive to leave. Moreover, the faculty who work in low SES schools would be recognized publicly each semester through print or other media. They would also be compensated with financial incentives to acknowledge their commitment to our most vulnerable children to reinforce the sense of collective social persuasion. In this scenario, competition would naturally occur in filling vacancies because teachers would be motivated to seek out a position that offers added prestige and increased pay. After all these staffing and financial investments, it would be expected that student performance would increase, adding a heightened sense of urgency to meet or exceed academic expectation in the collective affective state of the school faculty. These combined efforts would serve to build collective efficacy in the school and result in increased student performance.

#### **Recommendation #4: A call for increased multi-method research in future educational studies**

I taught math at a high SES school for five years. I transferred to this school because I wanted a challenge and had graduated from a south-side school. I am the same teacher that I was at the other school where the test scores were excelling. I work just as hard; but the scores here are not up to par. Everyone can teach in high SES schools, but not everyone can teach at this school and be a highly effective teacher. The one thing that I do know is that I am here to stay!!

A holistic or ‘systems’ theory needs to be developed for educational research that incorporates a mixed-method tool kit. This theory needs to be operationalized into research practice with distinct and measurable categories. Systems theory, to date, tend to be all inclusive, which can limit its usability in research design, because of a lack of specificity. These categories do not have to be mutually independent but they do need to possess an underlying logic that ties them together. As student achievement is the result of multiple and interactive variables that occur at different levels or tiers such as the home, the school, and the neighborhood, a non-linear model is needed that allows for the active participation of human agency. The idea of nesting categories is particularly appealing because it can be operationalized both quantitatively and qualitatively in a complimentary paradigm. The current application of statistics such as multi-linear modeling is powerful but is limited to linear analysis. Research would therefore benefit from a theoretical framework that lends itself to a mixed-methods approach with initial exploratory ethnographic work to define specific variables that are responsive to human agency prior to deciding the order and direction of nesting of selected variables.

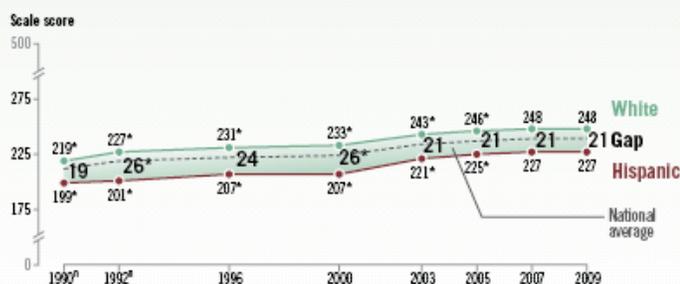
Analysis of findings would require triangulation of both text and trends for a more comprehensive understanding of the problem.

For example, research among teachers who persist in hardship schools is scarce. Educational research must use qualitative and quantitative methods in tandem to explore in depth what motivates teachers to work diligently in hardship positions. Additionally, those teachers could be evaluated in a nested model to assess individual effectiveness based on student academic performance. Together, this approach would give us the tools of effective teaching and the matched results of student achievement. With additional insight, teachers could be better trained or strategically recruited to work in these hardship positions.

Mixed-methods research is also needed to revise the non-praxis based classification biases of effective teachers inherent in quantitative measures. Some biases that are currently reported in educational literature include the type of college that teachers graduated from, the number of degrees, or the number of years in the classroom. Effective teaching criteria should be developed from observational studies of classroom practices.

## APPENDIX A: NATIONAL MATH ACHIEVEMENT SCORE RESULTS FOR HISPANIC AND WHITE 4<sup>TH</sup> AND 8<sup>TH</sup> GRADERS: 1990 – 2009\*

**Figure 5. Mathematics achievement score gaps between Hispanic and White public school students at grade 4: Various years, 1990–2009**



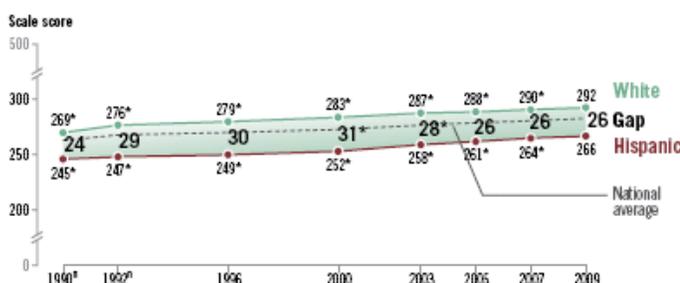
<sup>a</sup> Accommodations were not permitted for this assessment.

\* Significantly different ( $p < .05$ ) from 2009.

NOTE: Score gaps are calculated based on differences between unrounded average scores.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1990–2009 Mathematics Assessments.

**Figure 6. Mathematics achievement score gaps between Hispanic and White public school students at grade 8: Various years, 1990–2009**



<sup>a</sup> Accommodations were not permitted for this assessment.

\* Significantly different ( $p < .05$ ) from 2009.

NOTE: Score gaps are calculated based on differences between unrounded average scores.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1990–2009 Mathematics Assessments.

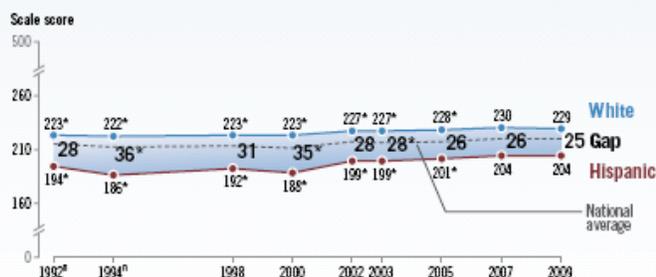
**\*Data is taken from NAEP Report,**

Hemphill, F.C., Vanneman, A & Rahman, T. (2011). *Achievement Gaps: How Hispanic and White Students in Public Schools Perform in Mathematics and Reading on the National Assessment of Educational Progress*, Statistical Analysis Report

<http://nces.ed.gov/nationsreportcard/pdf/studies/2011459.pdf>

## APPENDIX B: NATIONAL READING ACHIEVEMENT SCORE RESULTS FOR HISPANIC AND WHITE 4<sup>TH</sup> AND 8<sup>TH</sup> GRADERS: 1990 – 2009\*

Figure 17. Reading achievement score gaps between Hispanic and White public school students at grade 4: Various years, 1992–2009



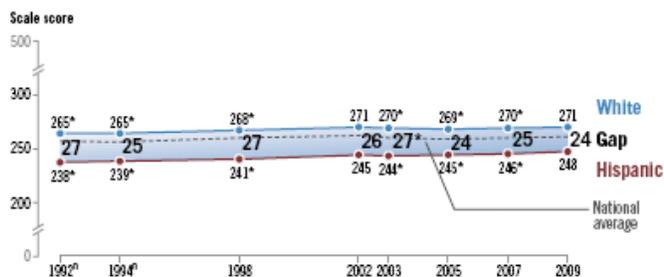
<sup>0</sup> Accommodations were not permitted for this assessment.

\* Significantly different ( $p < .05$ ) from 2009.

NOTE: Score gaps are calculated based on differences between unrounded average scores.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1992–2009 Reading Assessments.

Figure 18. Reading achievement score gaps between Hispanic and White public school students at grade 8: Various years, 1992–2009



<sup>0</sup> Accommodations were not permitted for this assessment.

\* Significantly different ( $p < .05$ ) from 2009.

NOTE: Data were not collected at grade 8 in 2000. Score gaps are calculated based on differences between unrounded average scores.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 1992–2009 Reading Assessments.

As measured by NAEP, the educational performance of Hispanic students has generally lagged behind the performance of White students. The gap in scores between White and Hispanic students in mathematics in 1990, when the current main NAEP mathematics assessment was first administered, was not significantly different from the gap in scores

in 2009, for either grade 4 or grade 8 (National Center for Education Statistics 2009). The same is true in reading, comparing results in 2009 with the scores for 1992, when the current main NAEP reading assessment was first administered (National Center for Education Statistics 2010). At the state level, in 2009 gaps between Hispanic and White students were statistically significant in almost every state for which reliable results were available in both reading and mathematics at both grades 4 and 8. (p. 16)\*

**\*Data is taken from NAEP Report,**

Hemphill, F.C., Vanneman, A & Rahman, T. (2011). *Achievement Gaps: How Hispanic and White Students in Public Schools Perform in Mathematics and Reading on the National Assessment of Educational Progress, Statistical Analysis Report*

## APPENDIX C: 2007-08 AIMS 8<sup>TH</sup> GRADE BY MIDDLE SCHOOL

2007-08 AIMS 8th Grade by School Percent Proficiency in 19 Middle Schools by SES Group			
<i>School</i>	<i>SES Group*</i>	<i>Reading</i>	<i>Math</i>
A	1	86.8	82.2
B	1	77.2	74.3
C	1	72.4	69.1
D	1	75.3	63.6
<i>Average % Proficiency</i>		<i>77.9</i>	<i>72.3</i>
E	2	65.2	50.7
F (w/GATE)	2	59.2	53.8
G	2	70.6	66.6
H	2	61.4	57.4
I (w/GATE)	2	64.2	49.2
J	2	59.3	53.3
K- Magnet	2	49.1	44.8
L (w/GATE)	2	65.9	57.5
M - Magnet	2	48.6	47.3
<i>Average % Proficiency</i>		<i>60.4</i>	<i>53.4</i>
N	3	46.8	32.9
O	3	45.1	40.5
P	3	34.0	42.5
Q	3	45.5	38.9
R	3	49.1	33.1
S	3	35.4	28.1
<i>Average % Proficiency</i>		<i>42.7</i>	<i>36.0</i>

## **APPENDIX D: FACE-TO-FACE INTERVIEW QUESTIONS**

### School working conditions

1. How many years have you been a teacher? How many years with this district?
2. Have you worked at other schools before this one? How is this one different from your last school?
3. Teaching middle school is no easy task...what made you decide to teach middle school kids? What was your path?
4. What is different about working in this school versus a non-hardship school?
5. How are the students different? How about the parents?
6. What strategies do you use here that you might not use in non-hardship school?
7. What kind of teacher teaches at a non-hardship school?
8. How are they different from the teachers at your school?
9. What are the biggest reasons for staying at this school, rather than changing to another one?
10. If you could change three things at this school, what would they be?
11. How much autonomy do you have in your classroom? How much do you need/want?

### School Leadership

1. What about the leadership in this school? How is it working for you?
2. What could be changed to strengthen the current leadership at this school?
3. Because this school is struggling to meet state proficiency rates, what are your feelings about possible district or state interventions within the school?

### Teaching as a profession

1. What motivated you to choose teaching as a profession?
2. If you could retire tomorrow with your full retirement, would you?
3. How strongly do you identify with the culture, language, customs etc. of the surrounding community?
4. What do you feel are your strengths as a teacher?
5. At the end of the day, what do you feel is your greatest impact on your students?
6. Do you enjoy working at this school? On a scale from one to ten, where would you rate your level of overall satisfaction? Can you explain how you came to this decision?

## APPENDIX E: ON-LINE SCHOOL CLIMATE SURVEY QUESTIONS

1. How many years have you been a teacher?
2. How many years have you been at this school?
3. Did you have another career for five years or more before deciding to become a teacher?

I am satisfied with how our school implements:
5. Consistent discipline policies for students
6. Professional learning communities and/or time to collaborate with my fellow teachers
7. Professional development
8. High academic expectations
9. Resource sharing within the school
10. Home-school communication
11. Reward policies for students
12. Use of data to drive instruction

13. I have the autonomy to teach what I want in my classroom
14. When the principal/assistant principal observes a teacher repeatedly in the classroom, it suggests that something is wrong with the teaching
15. After principal/assistant principal observation, instructional quality increases
16. The majority of our students will begin next year with grade level proficiency in math and reading
18. Parent support for their child's academic success is high in our school
19. Students who live in poverty should not be held to the same academic proficiency criteria as students from middle class and higher income households
20. In the next year or two, I still see myself teaching at this school
21. In the next year or two, I see myself transferring to a different school
22. If I could retire tomorrow with my full benefits, I would leave teaching altogether
23. In most cases, my relationships with the students at this school is the most rewarding aspect of my job
24. Regardless of our school's proficiency rates in reading and math on AYP and AZLearns, I believe that our students are getting a high-quality education at this school to be productive in society
25. I look forward to my job as a teacher almost every day at this school

## **APPENDIX F: DEFINITION OF EFFECTIVE TEACHING**

*Taken from:* Goe, L., Bell, C. & Little O. (2008). Approaches to evaluating teacher effectiveness: a research synthesis. National Comprehensive Center for Teacher Quality. Available [Online]  
[http://tqcenter.learningpt.org/whatworks/WWC08buildingCapacity/resources/Research\\_Synthesis.pdf](http://tqcenter.learningpt.org/whatworks/WWC08buildingCapacity/resources/Research_Synthesis.pdf)

After an extensive literature review, Goe et al. (p.8) came up with a comprehensive five-point definition of effective teachers. This definition underscores the multiple skills effective teachers need to promote student learning including:

- Having high expectations for all students and help students learn as measured by value-added or other test-based growth measures, or by alternative measures
- Contributing to a positive academic, attitudinal, and social outcomes for students such as regular attendance, on-time promotion to the next grade, on-time graduation, self-efficacy, and cooperative behavior
- Using diverse resources to plan and structure engaging learning opportunities; monitor student progress formatively, adapting instruction as needed; and evaluate learning using multiple sources of evidence
- Contributing to the development of classrooms and schools that value diversity and civic-mindedness
- Collaborating with other teachers, administrators, parents, and education professionals to ensure student success, particularly the success of students with special needs and those at high risk for failure

## APPENDIX G: AIMS READING AND MATH CORRELATIONS, 2005-2010

<b>District AIMS Reading Scale Score Correlations 2005 – 2010</b>						
		5th gr. Read 2005	6th gr. Read 2006	7th gr. Read 2007	8th gr. Read 2008	10th gr. Read 2010
5th gr. Read 2005 N=2234	Pearson Correlation	1	.819**	.795**	.788**	.748**
	Sig. (1-tailed)		.000	.000	.000	.000
6th gr. Read 2006 N=2236	Pearson Correlation	.819**	1	.832**	.823**	.799**
	Sig. (1-tailed)	.000		.000	.000	.000
7th gr. Read 2007 N=2238	Pearson Correlation	.795**	.832**	1	.835**	.809**
	Sig. (1-tailed)	.000	.000		.000	.000
8th gr. Read 2008 N=2237	Pearson Correlation	.788**	.823**	.835**	1	.820**
	Sig. (1-tailed)	.000	.000	.000		.000
10th gr. Read 2010 N=2205	Pearson Correlation	.748**	.799**	.809**	.820**	1
	Sig. (1-tailed)	.000	.000	.000	.000	
** . Correlation is significant at the 0.01 level (1-tailed).						

<b>TUSD AIMS Math Scale Score Correlations 2005 – 2010</b>						
		5th gr. Math 2005	6th gr. Math 2006	7th gr. Math 2007	8th gr. Math 2008	10th gr. Math 2010
5th gr. Math 2005 N=2238	Pearson Correlation	1	.837**	.813**	.799**	.761**
	Sig. (1-tailed)		.000	.000	.000	.000
6th gr. Math 2006 N=2238	Pearson Correlation	.837**	1	.853**	.834**	.818**
	Sig. (1-tailed)	.000		.000	.000	.000
7th gr. Math 2007 N=2238	Pearson Correlation	.813**	.853**	1	.853**	.822**
	Sig. (1-tailed)	.000	.000		.000	.000
8th gr. Math 2008 N=2238	Pearson Correlation	.799**	.834**	.853**	1	.831**
	Sig. (1-tailed)	.000	.000	.000		.000
10th gr. Math 2010 N=2226	Pearson Correlation	.761**	.818**	.822**	.831**	1
	Sig. (1-tailed)	.000	.000	.000	.000	

TUSD AIMS Math Scale Score Correlations 2005 – 2010						
		5th gr. Math 2005	6th gr. Math 2006	7th gr. Math 2007	8th gr. Math 2008	10th gr. Math 2010
5th gr. Math 2005 N=2238	Pearson Correlation	1	.837**	.813**	.799**	.761**
	Sig. (1-tailed)		.000	.000	.000	.000
6th gr. Math 2006 N=2238	Pearson Correlation	.837**	1	.853**	.834**	.818**
	Sig. (1-tailed)	.000		.000	.000	.000
7th gr. Math 2007 N=2238	Pearson Correlation	.813**	.853**	1	.853**	.822**
	Sig. (1-tailed)	.000	.000		.000	.000
8th gr. Math 2008 N=2238	Pearson Correlation	.799**	.834**	.853**	1	.831**
	Sig. (1-tailed)	.000	.000	.000		.000
10th gr. Math 2010 N=2226	Pearson Correlation	.761**	.818**	.822**	.831**	1
	Sig. (1-tailed)	.000	.000	.000	.000	
**. Correlation is significant at the 0.01 level (1-tailed).						

## **APPENDIX H: RECOMMENDATIONS FOR STAFFING HARDSHIP SCHOOLS**

***Taken from:*** Barry, B. (2008). Staffing high-needs schools: insights from the nation's best teachers. *The Phi Delta Kappan*, 89(10), pp. 766-771.

Recommendations for staffing hardship schools include:

- Resources in schools such as
  - Early childhood education for high needs students,
  - Alliances with local and state agencies for students with behavioral and social challenges
  - Up to date technology and adequate infrastructure
- Accountability that recognizes growth in student achievement. Teachers in high-needs school are discouraged with static high stakes testing because of greater student challenges and fewer bonuses.
- Peer collaboration increased – now an average of two hours per week nationally
- Professional development about beliefs, customs and learning styles of diverse students. Many teachers do not want to teach in schools where they cannot be successful.
- Mentorship for new teachers to support in cultural competency and differentiated instruction

- Improved working conditions such as smaller class sizes and student loads
- Access to good principals and skilled colleagues. A focus on growing accomplished teachers from within the high needs schools

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